Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation Summit

Significance for India and the Region

The Office of the Governor
Need for Neutrality in the Use of Discretionary Powers

Exports Cross $400-bn Annual Target
Record Merchandise Exports

Intergovernmental Panel on Climate Change Report
Consequences of Insufficient Climate Action

A Blow to Equitable Access to Essential Medicines
New Proposal for IPR Waiver at WTO

Outstanding performance by BYJU'S students in IAS 2020

Congratulations to our toppers

| **02** Ranks in Top 10 | **18** Ranks in Top 50 | **36** Ranks in Top 100 |

RANK 02
Jagrati Awasthi

RANK 8
Kartik Jivani

RANK 13
Gaurav Budania

RANK 14
Karishma Nair

RANK 17
Sarthak Agarwal

RANK 25
Vaibhav Rawat

RANK 26
Pulkit Singh

RANK 28
Divya Mishra

RANK 30
Divyanshu Choudhary

RANK 31
Megha Swaroop

RANK 32
Rallapalli Jagat Sai

RANK 35
Aparna Ramesh

RANK 37
Narwade Vinayak

RANK 38
Varuna Agarwal

RANK 41
Aswathy Jiji

RANK 42
Pooja Gupta

RANK 46
Jubin Mohapatra

RANK 50
Abhishek Shukla

Incredible Results

CSE 2019

| 4 Ranks in top 10 | 13 Ranks in top 50 | 22 Ranks in top 100 |

Rank 3
Pratibha Verma

Rank 6
Vishakha Yadav

Rank 8
Abhishek Saraf

Rank 10
Sanjita Mohapatra

CSE 2018

| 11 Ranks in top 50 | 28 Ranks in top 100 | 183 Ranks in the final list |

Rank 11
Pujya Priyadarshni

Rank 16
Dhodmise Trupti Ankush

Rank 21
Rahul Jain

Rank 24
Anuraj Jain

Rank 31
Mainak Ghosh

CSE 2017

| 5 Ranks in top 50 | 34 Ranks in top 100 | 236 Ranks in the final list |

Rank 3
Sachin Gupta

Rank 6
Koya Sree Harsha

Rank 8
Anubhav Singh

Rank 9
Soumya Sharma

Rank 10
Abhishek Surana

CSE 2016

| 8 Ranks in top 50 | 18 Ranks in top 100 | 215 Ranks in the final list |

Rank 2
Anmol Sher Singh Bedi

Rank 5
Abhilash Mishra

Rank 12
Tejaswi Rana

Rank 30
Prabhash Kumar

Rank 32
Avdhesh Meena

CSE 2015

| 5 Ranks in top 50 | 14 Ranks in top 100 | 162 Ranks in the final list |

Rank 20
Vipin Garg

Rank 24
Khumanthem Diana Devi

Rank 25
Chandra Mohan Garg

Rank 27
Pulkit Garg

Rank 47
Anshul Agarwal

CSE 2014

| 6 Ranks in top 50 | 12 Ranks in top 100 | 83 Ranks overall selections |

Rank 4
Vandana Rao

Rank 5
Suharsha Bhagat

Rank 16
Ananya Das

Rank 23
Anil Dhameliya

Rank 28
Kushaal Yadav

Rank 39
Vivekanand T.S

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8th March to 11th April, 2022	Geography	Geography					
12th April to 16th May, 2022	Economics	Economics	Economics				
17th May to 17th June, 2022	Modern History + Post Independent India	Modern History + Post Independent India	Modern History + Post Independent India	Modern History + Post Independent India			
20th June to 21st July, 2022	Polity	Polity	Polity	Polity	Polity		
22nd July to 26th August, 2022	Ethics + Governance	Ethics + Governance	Geography	Geography	Geography	Geography	
29th August to 30th September, 2022	International Relations + World History	International Relations + World History	International Relations + World History	Economics	Economics	Economics	Economics
3rd October to 7th November, 2022	Environment & Ecology + Science & Technology + Disaster Management	Environment & Ecology + Science & Technology + Disaster Management	Environment & Ecology + Science & Technology + Disaster Management	Environment & Ecology + Science & Technology + Disaster Management	Modern History + Post Independent India	Modern History + Post Independent India	Modern History + Post Independent India
9th November to 12th December, 2022	Social Issues & Social Justice + Essay + Compulsory Language Paper	Social Issues & Social Justice + Essay + Compulsory Language Paper	Social Issues & Social Justice + Essay + Compulsory Language Paper	Social Issues & Social Justice + Essay + Compulsory Language Paper	Social Issues & Social Justice + Essay + Compulsory Language Paper	Polity	Polity
13th December to 13th January, 2023	Internal Security + CSAT	Internal Security + CSAT	Internal Security + CSAT	Internal Security + CSAT	Internal Security + CSAT	Internal Security + CSAT	Geography
16th January to 16th February, 2023		Ancient India + Medieval India + Art & Culture	Ancient India + Medieval India + Art & Culture	Ancient India + Medieval India + Art & Culture	Ancient India + Medieval India + Art & Culture	Ancient India + Medieval India + Art & Culture	Ancient India + Medieval India + Art & Culture
17th February to 22nd March, 2023			Focus Prelims	International Relations + World History	International Relations + World History	International Relations + World History	International Relations + World History
23th March to 25th April, 2023			Focus Prelims	Focus Prelims	Environment & Ecology + Science & Technology + Disaster Management	Environment & Ecology + Science & Technology + Disaster Management	Environment & Ecology + Science & Technology + Disaster Management
26th April to 30th May, 2023			Focus Prelims	Focus Prelims	Focus Prelims	Focus Prelims	Internal Security + CSAT
31st May to 11th June, 2023	PRELIMS 2023	PRELIMS 2023	PRELIMS 2023	PRELIMS 2023	PRELIMS 2023	PRELIMS 2023	PRELIMS 2023
12th June to 14th July, 2023			Ethics + Governance	Ethics + Governance	Ethics + Governance	Ethics + Governance	Ethics + Governance
17th July to 18th August, 2023						Social Issues & Social Justice + Essay + Compulsory Language Paper	Social Issues & Social Justice + Essay + Compulsory Language Paper
1st September to 30th September, 2023	MAIN 2023	MAIN 2023	MAIN 2023	MAIN 2023	MAIN 2023	MAIN 2023	MAIN 2023

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Monday to Friday | 5:00 PM to 8:30 PM

Slots	Batch 1	Batch 2	Batch 3	Batch 4	Batch 5	Batch 6	Batch 7
1st Feb to 7th March, 2022	Economics						
8th March to 11th April, 2022	Modern History + Post Independent India	Modern History + Post Independent India					
12th April to 16th May, 2022	Polity	Polity	Polity				
17th May to 17th June, 2022	Geography	Geography	Geography	Geography			
20th June to 21st July, 2022	International Relations + World History	Economics	Economics	Economics	Economics		
22nd July to 26th August, 2022	Environment & Ecology + Science & Technology + Disaster Management	Environment & Ecology + Science & Technology + Disaster Management	Modern History + Post Independent India	Modern History + Post Independent India	Modern History + Post Independent India	Modern History + Post Independent India	
29th August to 30th September, 2022	Ethics + Governance	Ethics + Governance	Ethics + Governance	Polity	Polity	Polity	Polity
3rd October to 7th November, 2022	Internal Security + CSAT	Internal Security + CSAT	Internal Security + CSAT	Internal Security + CSAT	Geography	Geography	Geography
9th November to 12th December, 2022	Ancient India + Medieval India + Art & Culture	Ancient India + Medieval India + Art & Culture	Ancient India + Medieval India + Art & Culture	Ancient India + Medieval India + Art & Culture	Ancient India + Medieval India + Art & Culture	Ancient India + Medieval India + Art & Culture	Economics
13th December to 13th January, 2023	Social Issues & Social Justice + Essay + Compulsory Language Paper	Social Issues & Social Justice + Essay + Compulsory Language Paper	Social Issues & Social Justice + Essay + Compulsory Language Paper	Social Issues & Social Justice + Essay + Compulsory Language Paper	Social Issues & Social Justice + Essay + Compulsory Language Paper	Social Issues & Social Justice + Essay + Compulsory Language Paper	Modern History + Post Independent India
16th January to 16th February, 2023		International Relations + World History	International Relations + World History	International Relations + World History	International Relations + World History	International Relations + World History	International Relations + World History
17th February to 22nd March, 2023			Environment & Ecology + Science & Technology + Disaster Management	Environment & Ecology + Science & Technology + Disaster Management	Environment & Ecology + Science & Technology + Disaster Management	Environment & Ecology + Science & Technology + Disaster Management	Environment & Ecology + Science & Technology + Disaster Management
23th March to 25th April, 2023				Focus Prelims	Internal Security + CSAT	Internal Security + CSAT	Internal Security + CSAT
26th April to 30th May, 2023				Focus Prelims	Focus Prelims	Ancient India + Medieval India + Art & Culture	Ancient India + Medieval India + Art & Culture
31st May to 11th June, 2023	PRELIMS 2023	PRELIMS 2023	PRELIMS 2023	PRELIMS 2023	PRELIMS 2023	PRELIMS 2023	PRELIMS 2023
12th June to 14th July, 2023				Ethics + Governance	Ethics + Governance	Ethics + Governance	Ethics + Governance
17th July to 18th August, 2023							Social Issues & Social Justice + Essay + Compulsory Language Paper
1st September to 30th September, 2023	MAIN 2023	MAIN 2023	MAIN 2023	MAIN 2023	MAIN 2023	MAIN 2023	MAIN 2023

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Sunday - 10:00 AM to 8:00 PM

| Slots	Batch 1	Batch 2	Batch 3	Batch 4	Batch 5
February (05, 06, 12, 13, 19, 20, 26 & 27) + March (05, 06 & 12)	Polity				
March (13, 19, 20, 26 & 27) + April (02, 03, 09, 10, 16 & 17)	Economics	Economics			
April (23, 24 & 30) + May (01, 07, 08, 14, 15, 21, 22 & 28)	Modern History + Post Independent	Modern History + Post Independent	Modern History + Post Independent		
May (29) + June (04, 05, 11, 12, 18, 19, 25 & 26) + July (02 & 03)	Geography	Geography	Geography	Geography	
July (10, 16, 17, 23, 24, 30 & 31) + August (06, 07, 13 & 14)	Ancient India + Medieval India + Art & Culture	Polity	Polity	Polity	Polity
August (20, 21, 27 & 28) + September (03, 04, 10, 11, 17, 18 & 24)	International Relations + World History	International Relations + World History	Economics	Economics	Economics
September (25) + October (01, 02, 08, 09, 15, 16, 22, 23, 29 & 30)	Environment & Ecology + Science & Technology + Disaster Management	Environment & Ecology + Science & Technology + Disaster Management	Environment & Ecology + Science & Technology + Disaster Management	Modern History + Post Independent	Modern History + Post Independent
November (05, 06, 12, 13, 19, 20, 26, 27) + December (03, 04 & 10)	Social Issues & Social Justice + Essay + Compulsory Language Paper	Social Issues & Social Justice + Essay + Compulsory Language Paper	Social Issues & Social Justice + Essay + Compulsory Language Paper	Social Issues & Social Justice + Essay + Compulsory Language Paper	Geography
December (11, 17, 18, 24 & 31) + January '23 (07, 08, 14, 15, 21 & 22)	Ethics + Governance	Internal Security + CSAT	Internal Security + CSAT	Internal Security + CSAT	Internal Security + CSAT
January '23 (28 & 29) + February '23 (04, 05, 11, 12, 18, 19, 25 & 26) + March ' 23 (04)	Internal Security + CSAT	Ancient India + Medieval India + Art & Culture	Ancient India + Medieval India + Art & Culture	Ancient India + Medieval India + Art & Culture	Ancient India + Medieval India + Art & Culture
March '23 (05, 11, 12, 18, 19, 25 & 26) + April '23 (01, 02, 08 & 09)	Focus Prelims	Focus Prelims	International Relations + World History	International Relations + World History	International Relations + World History
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31st May to 11th June, 2023	PRELIMS 2023	PRELIMS 2023	PRELIMS 2023	PRELIMS 2023	PRELIMS 2023
July '23 (16, 22, 23, 29 & 30) + Aug '23 (05, 06, 12, 13, 19 & 20)					Social Issues & Social Justice + Essay + Compulsory Language Paper
1st September to 30th September, 2023	MAIN 2023	MAIN 2023	MAIN 2023	MAIN 2023	MAIN 2023

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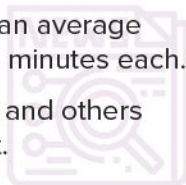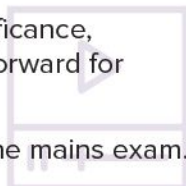
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POLITY

Issues and Challenges Pertaining to the Federal Structure

1. ### The office of the Governor

   » Prelims: Discretionary powers available to the Governor and related Constitutional provisions

   » Mains: Important recommendations by related commissions and committees and related Supreme Court Judgments.

   Controversy surrounding the role of Governors:

   Misuse of discretionary powers:

   - As an appointee of the Union Government, the Governors have been prone to act on the instructions by the ruling party at the Centre. Some state governments have alleged the functioning of the Governors as an agent of the centre

   - The discretion in choosing a Chief Minister, determining the timing for proving legislative majority, or dismissing a Chief Minister, dissolving the legislature, recommending President's Rule, taking apparently a long time in giving assent to bills or reserving bills for the President have often come to be tainted with partisan political considerations. The Governor's discretionary powers have been abused.

   Bickering between the office of Governor and state governments:

   - State governments have also alleged the constant and often unnecessary meddling in state administration by the office of Governor. This includes demanding information about day-to-day administration, commenting adversely on specific policies of the state government and exercising powers of the governor as the chancellor of state universities.

   - The constant bickering between the State Governor and elected governments could upset the harmonious administrative balance at the state level.

   Details:

   - The above developments have brought the focus on the role and functions of governors in India. In the midst of these recurrent controversies, discussion of the constitutional debates on the role of the Governor, important recommendations given by related commissions and landmark Supreme Court Judgments on the issue would help understand the role and position of Governor in the Indian Constitutional setup.

Constituent Assembly deliberations

- The original draft of the Constitution provided for a directly elected Governor or a Governor appointed by the President from a panel of four candidates elected by the Legislative Assembly.

- However, finally, the Constituent Assembly chose to have the Governor appointed by the President, given that having an elective governor along with a parliamentary system of democracy could lead to confrontation and conflict apart from being a waste of energy and money.

- Finally, a process by which the Governor is nominated by the President on the advice of the Council of Ministers was adopted and it became Article 155 of the Constitution.

- In the words of the Drafting Committee chairman, Dr. B.R. Ambedkar, instead of a powerful Governor, what the Constitution conceived was a duty-bound Governor.

Related Commission recommendations:

Administrative Reforms Commission:

- The first Administrative Reforms Commission (1966) in its report on "Centre-State Relationships" had recommended that once the Governor completes his/her term of five years, he/she shall not be made eligible for further appointment as Governor.

- This was to address the challenge of possible politicisation of the office of the Governor.

The Sarkaria commission on Centre-State Relations:

- The Sarkaria Commission was set up in 1983 by the Union government to examine the central-state relationship on various portfolios and suggest changes within the framework of the Constitution of India. Given the pivotal role played by the office of the Governor in Centre-State relationship, the commission made several related recommendations.

- The Sarkaria Commission recommended that the Governor appointee should be an eminent person in some walk of life and that he/she should be from outside the respective State. The person should be a detached figure without political links or should not have taken part in politics in the recent past. It condemned the practice of Governors venturing into active politics as well as ascending to other offices after the completion of the term.

- Suggesting measures to safeguard the neutrality of the Governors, the commission argued for a secure term for the Governor.

- Regarding the Governor's role as the Chancellor of State universities, the Sarkaria Commission suggested that it was desirable to consult the Chief Minister or the concerned minister, though it shall be left to the Governor to act on the same or not.

National Commission to review the working of the Constitution:

- The National Commission to review the working of the Constitution (NCRWC) also known as Justice Venkatachaliah Commission was set up in 2000 for suggesting possible amendments to the Constitution of India.

- The National Commission also reiterated the view of the Sarkaria Commission regarding the appointment of Governor.

- Additionally it argued for stipulating time limits for the Governors to give assent to pending bills and also for the Bills pending Presidential assent under Article 201 of the Indian Constitution.

The Punchhi Commission:

- The Government of India constituted the Punchhi Commission on Centre-State relations in 2007 to look into the new issues of Centre-State relations keeping in view the changes that had taken place in the polity and economy of India since the Sarkaria Commission.

- Punchhi Commission reaffirmed most of the recommendations of the Sarkaria Commission.

- The Commission expressed concerns over the practice of Governors being called back with change in governments at the Centre. This it felt did not align with the the salutary position assigned to the Governor.

- Taking one step ahead of the Sarkaria Commission recommendation that the Governor's tenure of five years shall only be sparingly cut short, Punchhi Commission recommended that the Governor shall have fixed tenure to protect the Governor from any pressure from the Central Government. It proposed an amendment to Article 156 to incorporate a well laid out procedure to remove the Governor from office.

Related Supreme Court judgments:

- The Supreme Court through landmark judgments in the S. R. Bommai (1994), Rameshwar Prasad (2006) and Nabam Rebia (2016) has placed several restrictions on Governor over-reach and high handedness in the form of dissolution of the Legislative Assembly on partisan grounds.

S. R. Bommai case:

- The 1994, nine-judge Constitution Bench of the Supreme Court in the S. R. Bommai case, put an end to the arbitrary dismissal of State governments under Article 356 by spelling out restrictions.

* The President's Rule was imposed in States over a 100 times prior to 1994.

- The Supreme Court declared that the imposition of President's Rule shall be confined only to the breakdown of constitutional machinery.

B. P. Singhal Case:

- The constitution bench of the Supreme Court in the B. P. Singhal Case (2010) had declared that a change in government at the Centre cannot be grounds to recall governor and any such actions would be judicially reviewable.

Conclusion:

- The office of the Governor, envisaged by the makers of the Constitution of India to "preserve, protect and defend the Constitution and the law", has unfortunately become a controversial constitutional office.

- Notably, none of the numerous reports and recommendations by the committees and commissions and even Supreme Court judgements mentioned above has been taken for implementation.

- Complying with the norms and conventions advocated by the Sarkaria commission coupled with the functional safeguards recommended by the Punchhi Commision will go a long way in rediscovering the constitutional equilibrium between the states and centre.

Nut Graf

The office of Governor is an important aspect of the centre- state relationship and ensuring absolute neutrality of the office and using the discretionary powers available to the Governor in right spirit is critical not just for the vibrancy of the federal structure in India but to the democratic ideal itself laid out by our Constitution.

Indian Constitution — Features, Significant Provisions and Basic Structure.

2. **Resham vs State of Karnataka case.**

   » Prelims: Related Constitutional articles- Article 25

   » Mains: Judicial doctrines of 'essential religious practices', 'test of proportionality', 'reasonable accomodation'; Important Supreme Court judgments- Bijoe Emmanuel

Context:

- The Karnataka High Court judgment in the Resham vs State of Karnataka case.

Background:

- Six female students from Government College in Udupi reported that they were not permitted to enter classrooms wearing hijab, bringing the hijab debate to the fore.

- The ban of hijab in classrooms was justified by the Karnataka government under the 1983 Education Act.

- Muslim students filed several applications in the Karnataka High Court, claiming the right to wear hijabs in class under Articles 14, 19, and 25 of the Indian Constitution.

High Court Judgment:

- The Karnataka High Court has upheld the ban imposed on the use of hijabs by students in classrooms across the State of Karnataka.

Reasoning for the judgment:

- The judgment is premised on the following arguments.

  * The court held that the wearing of a hijab is not essential to the practice of Islam, and, therefore, the petitioners' right to freedom of religion is not impinged by the ban on the wearing of hijab.

  * The Court held that there is limited scope for right to free expression and privacy that can be claimed within the confines of "qualified public spaces" like a classroom and that individual rights cannot be asserted to the detriment of general discipline and decorum.

  * The Court took note of the fact that since the government order does not by itself ban the use of a hijab and since it is otherwise neutral, there is no discrimination aimed at Muslim women students as claimed by the petitioners.

Concerns with the judgment:

Flawed essential religious practices doctrine:

- The main argument of the Court in rejecting the plea arguing for wearing of a hijab as a legitimate exercise of religious freedom was that the petitioners failed to produce any evidence to show that the use of a hijab was essential to Islam. The Judiciary is ill-equipped to do and this does not augur well for a secular judiciary.

  * Something is an essential practice only if its absence or removal has the effect of destroying the religion itself.

- The essential religious practice itself is a flawed doctrine and that the matter could have been disposed of without entering the theological domain.

  * It would be far better if a claim for Article 25 protection is tested against constitutional values such as equality, dignity and privacy, subject, of course, to health and public order.

Overlooking freedom of conscience:

- The petitioners had contended that they wore the hijab as a matter of conscience and the court has failed to consider this aspect of the plea.

  * Article 25 of the Constitution guarantees to all persons right to profess, practise and propagate religion and "freedom of conscience."

- This judgment fails to recognize the principle adopted by the Supreme Court in the Bijoe Emmanuel (1986) case where the rights of Jehovah's Witnesses who refused to partake in the singing of the national anthem was protected based on the argument that so long as the students conscientiously believed that they must not participate in the recital, their rights could only be abridged only in the interests of public order, morality or health.

- By linking cases dealing with a right to conscience with aspects of religious freedom, the Karnataka High Court again deviates from the spirit of the Bijoe Emmanuel case where the Supreme Court decided the case explicitly based on conscience and had noted that conscience need have no direct relation to religious faith.

Enforcing popular morality:

- As against the expectation of the judiciary standing as guardians of individual freedom, the judiciary has time and again enforced the popular molarity of the day, treating values of individual freedom as dispensable.

- The judgment fails to recognize that in this particular case the exercise of free choice was curtailed by state action.

Flawed argument against free expression in qualified public spaces:

- The argument that derivative rights based on rights to freedom of speech and privacy are incapable of being invoked in protected environments like schools ignores the classic test for determining when and how the right to free expression can be legitimately limited- the test of proportionality. The Court failed to consider this legal doctrine

Failure to allow for "reasonable accommodation":

- Despite some precedents like Kendriya Vidyalayas allowing for hijabs within the contours of the prescribed uniforms, the Court has overlooked the request for "reasonable accommodation" in this case.

  * The principle of 'reasonable accommodation' is that a pluralist society may allow the social diversity without undermining the sense of equality.

- There is no reason to not accommodate the choice of an additional piece of clothing that does not interfere with the prescribed uniform.

- Also given that religious and cultural marks on the forehead and accessories on other parts of the body are not disallowed, the argument that the court was looking for uniformity falls flat.

Undermine social democracy:

- One concern with the judgment is that it adversely impacts the principles of liberty, equality, and fraternity envisaged to be upheld by our Constitution.

> *Nut Graf*
>
> *The Karnataka High Court in the Resham vs State of Karnataka case has upheld the ban imposed on the use of hijabs by students in classrooms across the State of Karnataka based on the argument that wearing of a hijab is not essential to the practice of Islam, and that there is limited scope for right to free expression and privacy that can be claimed within the confines of qualified public spaces like classrooms.*

Parliament and State Legislatures—Structure, Functioning, Conduct of Business, Powers & Privileges and Issues Arising out of these.

3. Needed, an Indian Legislative Service

- » Prelims: Provisions of Article 98 and Article 312; Role and powers of Secretary-General

- » Mains: Concerns with the current practice of appointing outsiders as Secretary-Generals

Context:

- As against the precedent of appointing the Secretary-General of the Upper House from outside the secretariat staff or appointing former bureaucrats, the Chairman of Rajya Sabha had appointed Dr. P.P.K. Ramacharyulu as the 12th Secretary-General of the Upper House.

  - * Ramacharyulu was the first-ever Rajya Sabha secretariat staff member who rose to become the Secretary-General of the Upper House.

- While this move was commendable, the replacement of Ramacharyulu by a former bureaucrat, P.C. Mody, in less than three months is unfortunate.

- The practice of appointing outsiders, mostly retired civil servants, as Secretary-General to the Parliamentary houses remains a source of concern.

Secretariats of the Parliamentary houses:

- Article 98 of the Indian Constitution provides for secretariats for the two houses of the Parliament.

  - * As per the provisions of this article, each House of Parliament shall have a separate secretariat staff. Although there could also be the creation of posts common to both Houses of Parliament

  - * It also states that the parliament may by law regulate the recruitment, and the conditions of service of persons appointed, to the secretarial staff of either House of Parliament.

- The Secretariat looks after the day-to-day administration and legislative needs of the Parliament. Parliament relies on efficient functioning of this administrative body to conduct its business smoothly.

- The Parliamentary Secretariat functions under the direction and control of its Presiding Officer.

Secretary-General:

- The Secretary-General, Rajya Sabha, functions as the head of the Rajya Sabha Secretariat and advisor to the Chairman, Rajya Sabha. He is chosen and appointed by the Chairman, Rajya Sabha. As advisor to the Chairman in matters concerning Rajya Sabha or its Secretariat, he is the repository of accumulated wisdom of the House, and the custodian of its culture, traditions and precedents. He is, therefore, expected to possess certain special abilities, traits, orientation and aptitude.

- As the head of the Secretariat, he is expected to be conversant with all matters that have a reference to the Rajya Sabha and its business; whether they relate to some constitutional issue or some procedure that should be followed in a given situation.

- The Secretary-General is the third most important functionary of the Rajya Sabha after the Chairman, Rajya Sabha and the Deputy Chairman, Rajya Sabha.

- The Secretary-General enjoys certain privileges such as freedom from arrest, immunity from criminal proceedings, and any obstruction and breach of their rights would amount to contempt of the House.

> - Th Surendra Nath Mukherjee served as the first Secretary (Joint) of the Rajya Sabha. He had served in the Constituent Assembly Secretariat as Joint Secretary and chief draftsman of the Constitution

Concerns with the current practice of appointing outsiders as Secretary-Generals:

Against the principle of separation of powers:

- Appointing serving or retired civil servants to the post of Secretary-General amounts to the breach of the principle of separation of power as envisaged under the Indian Constitution and also upheld by the judiciary as a basic structure of the Constitution.

  - * Article 98 of the Constitution by providing for two separate secretariats emphasizes the principle that the secretariats should be independent of the executive government.

- A separate and independent secretariat marks a feature of a functioning parliamentary democracy. Appointing civil servants to the post of Secretary-General, could undermine the independence of the Secretariat.

Impact Legislatures' role of holding the executive accountable:

- In a parliamentary polity like India, apart from passing legislations, the Parliament is also expected to scrutinize the executive's administrative behaviour. A strong Parliament means a more accountable executive. Appointing former bureaucrats to head important legislature bodies like the Secretariat could lead to possible conflict of interests.

Lack of knowledge of the functioning of the legislature:

- The Secretary-General is entrusted with a wide range of duties and functions which necessitate vast knowledge and rich experience of Parliamentary procedures, practices and precedents. Most of the civil servants may lack this expertise.

Recommendations:

India Legislative Service:

- There are many legislative bodies in India, ranging from the panchayat, block panchayat, zila parishad, municipal corporations to State legislatures and Union Parliament at the national level. To ensure competent and robust legislative institutions, there is the need to have qualified and well-trained staff to support the legislative functioning.

- Parliament and State legislative secretariats recruit their pool of bureaucrats separately. There continues to be the lack of a common public recruiting and training agency at the national level.

- In this direction, there is the need for the creation of a common all-India service cadre — Indian Legislative Service. This common service could help build a combined and experienced legislative staff cadre, enabling them to serve from across local bodies to Union Parliament.

- The Rajya Sabha can make use of the powers under Article 312 to such an all-India service common to both the Union and the States.

  * Article 312 states that if the Council of States has declared by resolution supported by not less than two-thirds of the members present and voting that it is necessary or expedient in the national interest so to do, Parliament may by law provide for the creation of an all India service, common to the Union and the States, and regulate the recruitment, and the conditions of service of persons appointed, to any such service.

Appointing Secretary-General from within the Secretariat:

- In the United Kingdom, the Clerk of the House of Commons has always been appointed from the legislative staff pool created to serve Parliament. India too should adopt this practice given that it exemplifies a democratic institutional practice.

> *Nut Graf*
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> *The practice of appointing retired civil servants as Secretary-General of the Parliamentary houses goes against the principle of separation of powers and could undermine the secretariat's independence and the ability of the Parliament to hold the executive accountable. In this direction it is advisable that India adopt the practice of appointing Secretary-General from within the Secretariat staff.*

Structure, organization and functioning of the Judiciary

4. **Sealed cover jurisprudence**

   » Prelims: Sealed Cover' Jurisprudence

   » Mains: Concerns associated with Sealed Cover' Jurisprudence

Context:

- The Supreme Court's two distinct benches have criticized the government's "sealed cover jurisprudence" in the courts.

What is 'Sealed Cover' Jurisprudence?

- Sealed Cover' Jurisprudence is a practice used by the Supreme Court and sometimes lower courts, of asking for or accepting information from government agencies in sealed envelopes that can only be accessed by judges.

- There is no specific law that defines the doctrine of sealed cover.

- The Supreme Court derives its power to use it from Rule 7 of order XIII of the Supreme Court Rules and Section 123 of the Indian Evidence Act of 1872. It is stated under the said rule that if the Chief Justice or court directs certain information to be kept under sealed cover or considers it of confidential nature, no party would be allowed access to the contents of such information, except if the Chief Justice himself orders that the opposite party be allowed to access it. It also mentions that information can be kept confidential if its publication is not considered to be in the interest of the public.

Reasons of providing details in sealed cover are:

- To protect highly sensitive information which may injure even national security or "public order"

- The disclosure would affect the ongoing investigation.

Examples of 'Sealed Cover' Jurisprudence:

What is the criticism of 'Sealed Cover' Jurisprudence?

- 'Sealed Cover' Jurisprudence is challenged because it is incompatible with the Indian legal system's values of transparency and accountability.
- It is in contrast with the concept of an open court, where decisions can be scrutinized by the public.
- Furthermore, it is maintained that denying accused parties access to such information obstructs their right to a fair trial and adjudication.
- The Supreme Court ruled in the case of P Gopalakrishnan v. State of Kerala in 2019 that disclosure of documents to the accused is constitutionally required.

> **Nut Graf**
>
> The Supreme Court criticizing the sealed cover jurisprudence is significant as the practice is not only against the concept of fair trial but it also infringes upon important fundamental rights..

Government policies and interventions for development in various sectors and issues arising out of their design and implementation.

5. Criminal Procedure (Identification) Bill, 2022

- » Prelims: Criminal Procedure (Identification) Bill, 2022
- » Mains: Critical Evaluation of Criminal Procedure (Identification) Bill, 2022

Context:

- The Criminal Procedure (Identification) Bill, 2022 was introduced in the Lok Sabha amid strong protests from Opposition members.

Criminal Procedure (Identification) Bill, 2022

- As per the Criminal Procedure (Identification) Bill of 2022, Police and prison officials would be able to collect, retain, and analyze physical and biological evidence, including retina and iris scans.
- According to the bill, these protections would also apply to anybody detained under any preventative detention law.
- The National Crime Records Bureau (NCRB) will store physical and biological samples, as well as signature and handwriting data, for at least 75 years.
- The Identification of Prisoners Act of 1920 is set to be replaced by the Criminal Procedure (Identification) Bill of 2022.
- Officers in charge of police stations or those not below the rank of head constable are also required to take "measures," with records of these measurements being kept for 75 years from the date of collection.

Evaluation of Criminal Procedure (Identification) Bill, 2022

Benefits:

- The Identification of Prisoners Act, 1920 involved only finger impressions and footprint impressions. The Criminal Procedure (Identification) Bill, 2022 has expanded its coverage to include palm-print impressions, iris and retina scans, physical and biological samples , behavioral attributes etc. This will ease the process of identifications and investigations in criminal matters.
- The Bill also expands the individuals it seeks to cover which will ensure that thorough investigation can be carried out by investigating suspected and accused persons.

Concerns:

Lack of Clarity:

- Several provisions are not defined in the Bill itself. For instance, the statement of objects says it provides for collection of measurements for "convicts and other persons" but the expression "other persons" is not defined.

Tool of Harassment:

- The Bill allows those "ordered to give security for his good behavior or maintaining peace under section 117 of the Code of Criminal Procedure, 1973" to be compelled to share biometric data.
- These provisions can be used to harass a wide net on a range of individuals who are simply "suspected" of committing offense or "likely" to commit one.

Conflict With Fundamental Rights:

- Bill is beyond the legislative competence of Parliament as it violated fundamental rights of

citizens, including the right to privacy under Article 21.

- The proposed law will be debated against Article 20(3) of the Constitution, which is a fundamental right that guarantees the right against self-incrimination.

Fear Of Misuse Of Provisions:

- To the extent that the proposed Bill brings a legal framework for police surveillance using technology, experts fear that it could be expanded or misused.

Right To Be Forgotten:

- The Bill brings to focus rights of prisoners and the right to be forgotten since biometric data can be stored for 75 years.

- While the jurisprudence around the right to be forgotten is still in an early stage in India, the Puttaswamy judgment discusses it as a facet of the fundamental right to privacy.

> ### *Nut Graf*
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> *Although the Criminal Procedure (Identification) Bill, 2022 is purported to help the police forces maintain law and order and conduct investigations faster and efficiently, it is fraught with challenges and concerns relating to the right to privacy, the right to be forgotten, among others. Such legislation that seemingly gives sweeping powers to authorities must be reconsidered.*

Government policies and interventions for development in various sectors and issues arising out of their design and implementation.

6. The move to ease voting for overseas citizens

» Prelims: Electronically Transmitted Postal Ballot System or ETPBS

» Mains: e-Voting process for overseas voters; Electronically Transmitted Postal Ballot System or ETPBS

Context:

- In response to a question in the Lok Sabha, the Union Minister for Law and Justice stated that the government was looking into the possibility of allowing non-resident Indians to vote online (NRI).

How can overseas voters currently vote in Indian elections?

- Prior to 2010, an Indian citizen who was an eligible voter and had lived in another country for more than six months could not vote in elections.

- After the Representation of the People (Amendment) Act, 2010, eligible NRIs who had been away for more than six months were allowed to vote, but only in person at the polling station where they had been enrolled as an overseas elector.

- Overseas Indian citizens have the same voting rights as resident Indian citizens in the constituency where they live.

- In the case of overseas voters, their passport address is used to determine their place of ordinary residence and the constituency in which they should register.

Concerns of overseas voters:

- Only a small percentage of eligible overseas residents registered to vote or showed up to vote.

- The requirement that eligible voters visit the polling station in person has deterred them from exercising their right to vote.

Recommendations by Election Commission of India (ECI) :

- In November 2020, the Election Commission of India (ECI) wrote to the Law Ministry, requesting that eligible NRIs be allowed to vote by postal ballot in the various State Assembly elections scheduled for 2021.

- In order to allow this facility, the ECI proposed amending the Conduct of Election Rules, 1961.

- The postal ballots were to be sent to NRIs electronically, and they were to return the ballots via post after selecting their candidate.

Electronically Transmitted Postal Ballot System or ETPBS:

What is ETPBS ?

- In 2016, the Conduct of Election Rules, 1961, were amended to allow service voters to vote using the ETPBS.

- Postal ballots are sent electronically to registered service voters under this system.

- The service voter can then download the ETPB, register their mandate on the ballot, and mail it to the constituency's returning officer.

- The ECI proposed that this facility be extended to international voters as well.

- The Law Ministry must amend the Conduct of Election Rules, 1961 before this can begin.

How does ETPBS function?

- NRI voters who want to vote through ETPBS must notify the returning officer at least five days after the election is announced.

- The ballot will then be sent electronically via the ETPBS by the returning officer.

- The senior officer would be appointed by the Indian diplomatic or consular representative in the NRI's resident country, except in this case.

Conclusion:

- In the 2019 Lok Sabha election, the ETPBS method resulted in a higher turnout among service voters.

- With citizens increasingly moving between countries for work, the postal ballot method has been recognised as a means of allowing overseas voters to exercise their right to vote.

- However, there must be certain conditions that are normally associated with time spent abroad or work done abroad.

Nut Graf

Online voting mechanism is an effective system that will ease the voting process for NRIs, but rules must be clearly framed for eligibility on the basis of time spent away from the country.

Statutory, regulatory and various quasi-judicial bodies

7. **International Election Visitors Programme (IEVP)**

   » Prelims: About the Programme

Context:

- The Election Commission of India (ECI) hosted International Election Visitors Programme (IEVP) 2022

Background

- India has been hosting the international election visitors programme since 2012 polls.

- International delegates are invited to visit polling stations to witness the electoral processes in person.

Details

- IEVP is an important part of ECI's international outreach program and is organized with the goal of familiarizing fellow EMBs (Election Management Bodies) with the electoral system and processes adopted in the world's largest democracy.

- IEVP 2022 provides an opportunity for ECI to share best practices and experience of the conduct of the poll process along with the steps taken to ensure compliance with COVID-19 protocols.

ECONOMY

1. **Reviving the inland water transport system for the Northeast**

   » Prelims: Inland waterways of India

   » Mains: Significance of inland waterways connectivity to north east India

   Context:

   • The MV Lal Bahadur Shastri, an Inland Waterways Authority of India (IWAI) vessel, recently completed its pilot voyage from Bihar's Patna to the Guwahati's Pandu Port. It was ferrying 200 metric tonnes of food grains for the Food Corporation of India (FCI), via Bangladesh.

   Details:

   • The Patna port is on the Ganga River (National Waterway-1) while Guwahati's Pandu port is on the southern bank of the Brahmaputra (National Waterway-2).

   • The vessel passed through Bhagalpur, Manihari, Sahibganj, Farakka, Tribeni, Kolkata, Haldia, Hemnagar in India, Khulna, Narayanganj, Sirajganj and Chilmari in Bangladesh and again to India on the NW2, through Dhubri and Jogighopa covering 2,350 km.

Source: Inland Waterways Authority of India, Government of India

• Transportation of cargo service through waterways in Bangladesh is possible because of the Protocol on Inland Water Transit and Trade signed between India and Bangladesh.

   * As part of this agreement, India has invested 80% of the total development costs to improve the navigability of the two stretches of the IBP (Indo-Bangladesh Protocol) routes — Sirajganj-Daikhowa and Ashuganj-Zakiganj in Bangladesh apart from independently undertaking works on its rivers.

Significance:

• The development marks a landmark event for inland water transport in India as it links two of India's largest river systems of Ganga and Brahmaputra. This marks the dawn of a new era of inland logistics in India.

• This pilot run has rekindled hope for the inland water transport system which the landlocked northeast depended on heavily before India's independence in 1947. The access for goods like tea, timber, coal and oil industries to seaports on the Bay of Bengal via the Brahmaputra and the Barak River (southern Assam) systems had resulted in economic prosperity for the region during the pre-independence phase. The partition resulted in an abrupt discontinuance of the ferry service. The rail and road connectivity through the narrow siliguri corridor were costlier alternatives for connecting with the north eastern states of India. The regular services between NW1 and NW2 would help ensure the much required connectivity to the northeast.

• The seamless cargo transportation for the northeast through the Indo-Bangladesh Protocol (IBP) route will provide the business community a viable and economic connectivity alternative to the region and this would help reap the economic potential of the region.

• The inland waterways offer a much more sustainable ecological alternative to the construction of roadways and railways in the region as it does not require clearing of forest lands and also waterways have a much lower carbon footprint.

• The project could also help convert the northeast into a connectivity hub by further connecting it to other landlocked countries like Nepal and Bhutan in the region.
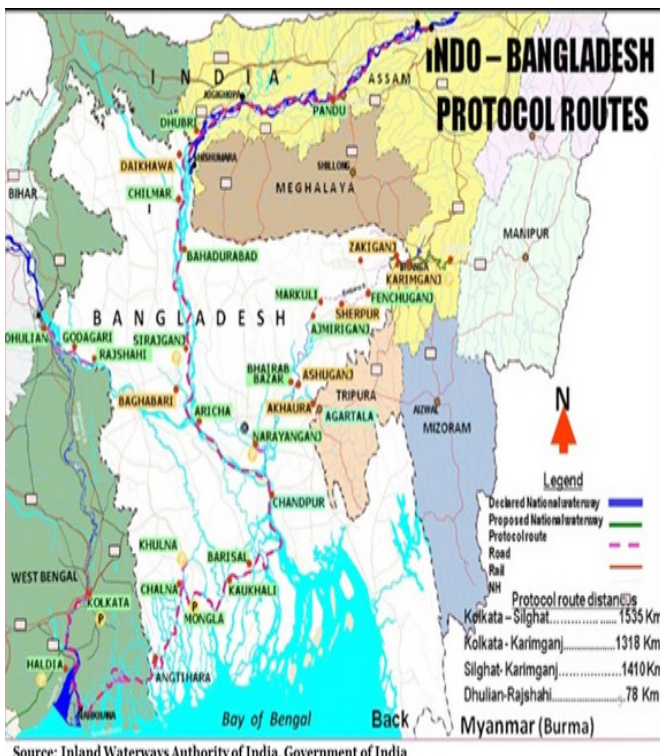
> **Nut Graf**
>
> *The Inland waterways connectivity envisaged to the North eastern states of India via Bangladesh holds immense potential for the economic growth and development of the region.*

Indian Economy and Issues relating to Planning, Mobilization of Resources, Growth, Development and Employment.

2. UPI123Pay: Payment solution for feature phone users

» Prelims: UPI123Pay- features

» Mains: Significance of the new UPI123pay payments solution

Context:

- Recently, the Reserve Bank of India launched a new Unified Payments Interface (UPI) payments solution for feature phone users called the 'UPI123Pay'.

Background:

- Unified Payments Interface (UPI) was introduced in 2016 as a digital payments platforms in the country. Though its coverage has increased exponentially over the years, one of the major challenges has been that the efficient access to UPI is available largely via smartphones.

- A significant number of feature phone mobile subscribers in the country, which is estimated to be more than 40 crore are thus finding it difficult to engage in digital transactions.

- Although mobile payment systems that do not rely on internet connectivity like the ones based on USSD or SMS technology have been present, most users found it difficult to access UPI despite options like the USSD-based process, using the short code of *99#. The USSD-based process was considered cumbersome, with users required to send multiple messages and charged for the same, and also not being supported by all mobile service providers.

Details:

- The new UPI-based service, UPI123Pay is designed to improve the options for feature phone mobile users to access UPI platform.

- Under the new UPI123Pay system, feature phone users will be required to go through an on boarding process where they have to link their bank account to their feature phone and then set a UPI PIN using their debit card for authenticating transactions.

- After this process, users will be able to use the new UPI facility for person-to-person as well as merchant transactions. They would also be able to undertake operations like mobile recharge, EMI repayment, balance check, among others.

- The new system offers four distinct payment options that don't require an internet connection. Interactive Voice Response (IVR), app-based functionality, missed call facility and proximity sound-based payments.

> **International example:**
>
> - M-PESA, Africa's leading mobile money service, is one of the few mobile service providers who do not use internet for financial transactions. M-PESA operates across the Democratic Republic of Congo, Egypt, Ghana, Kenya, Lesotho, Mozambique and Tanzania.

Significance:

- By bringing the digital payments platform to the feature phone mobile subscribers who had largely remained outside the digital payments landscape and allowing for financial transactions without internet connectivity, this system promotes greater financial inclusion in the Indian economy.

> **Nut Graf**
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> *The new payments solution UPI123Pay is the next logical step in further mainstreaming the digital payments ecosystem in India by easing the participation of even the feature phone mobile users in digital payments. This will provide a much needed impetus to financial inclusion in the Indian economy.*

Infrastructure – Railways

3. Transmogrifying a behemoth — the Railways

» Mains: Concerns over the financial health and the management architecture of the Indian Railways

Context:

- While there have been some notable improvements in the services of Railways, there is the continued neglect of some crucial policy issues related to the Indian railways.

Developments in the railway sector:

- Proposals for bullet trains.

- Introduction of 'Vande Bharat' express trains.

  * Vande Bharat is a semi-high speed trainset, each of 16 coaches, and self-propelled — they do not require an engine. Budget 2022 laid out a grand plan of introducing 400 semi-high speed, next generation Vande Bharat trains in the next three years.

- Introduction of Vistadome coaches along selected routes

- Remodelling of railways stations along the 'airport standard'
- Historically lower number of accidents.
- Historic levels of capital investments in the railway sector.
    * The capex outlay for 2021-22 is Rs 2,15,000 crore which is more than five times the 2014 level. The next 10 years will see a very high level of capital expenditure in the railway sector.
- Record levels of freight loading
- National Rail Plan
    * The National Rail Plan lays down the road map for capacity expansion of the railway network by 2030 to cater to growth up to 2050. It envisages the creation of a future ready railway system that is able to not only meet the passenger demand but also increase the modal share of railways in freight to 40-45 per cent from the present level of 26-27 per cent.

Concerns:

- The points discussed above amount to mere feel-good image makeover of the railways and there continues to be neglect of crucial policy issues, especially those that concern the financial health and the future management architecture of the Indian Railways.

Precarious financial health:

- While the recent budget reflects a 'surplus' of ₹875 crore for the railways, this is mainly attributable to window dressing of the financial statistics to hide the actual financial status of the railways which continues to remain in deficit.
- The planned projects like- line doubling of existing routes, introduction of new lines and 100% electrification require huge investments and have long gestation periods. Given the limited fiscal capacity of the government these projects will need to be financed by heavy institutional/market borrowings at relatively high rates. Hence the repayment of loans and interest will continue to remain a pressure on the railways at least in the near future until the new infrastructure additions starts generating revenues for the railways. Notably some experts have also raised doubts over the financial viability of some of the planned infrastructural projects.
- The Eighth Pay Commission, normally due by around 2025-26, is bound to strain finances further.

Confusion regarding management architecture:

- There continues to be mixed signalling on changing the management architecture of the Indian Railways.
    * In 2019, the government decided to do away with the system of recruiting officers to the 'Group A' services in the Railways through the Combined Engineering Services Examination (for technical posts) and the Civil Services Examination (for non-technical position). Instead it proposed having recruitments to a single service called the Indian Railways Management Service (IRMS). This decision was based on the argument that old system had led to departmentalism in railways which was hampering optimum decision making and the smooth working of the Railways.
    * In what is being viewed as a turn around the recruitment to the IRMS would be made through the Civil Services Examination. This is based on the questionable argument that since about 70% of the candidates who qualify in the CSE are engineers there is no need to hold separate exams for IRMS. This the article argues could impact the quality of human resources especially manning technical roles.
    * The kind of career progression possible in such a system will again lead to the generation of generalists as against the desire to have domain experts as envisaged by the changes made to the management architecture.
- The privatisation moves of the Indian railways is also fraught with challenges. The Indian Railways is poised to migrate to the Public Private Partnership (PPP)/Joint Venture (JV) mode or outright privatisation in its major activities such as train running, asset maintenance, station management, project management and execution, production units and medical services. This will result in all relevant domain expertise resting in the private sector, only supported at certain levels by the IRMS cadre. This does not augur well for the building of a strong IRMS cadre with experience and expertise.
- The lack of a clear policy for the management architecture of the railways will result in systemic challenges in its functioning going ahead.

Indian Economy and Issues relating to Planning, Mobilization of Resources, Growth, Development and Employment

4. Global uncertainties, India's growth prospects

» Prelims: Difference between nominal and real GDP growth; Current Account Deficit and Fiscal deficit

» Mains: Impact of the geopolitical uncertainties on the Indian economy

Context:

• The normalization of the Indian economy in the post pandemic phase could be disturbed by the geopolitical uncertainties brought out by the ongoing Russia-Ukraine conflict.

Background:

Impact of the COVID-19 pandemic on the Indian economy:

• The pandemic and the consequent lockdowns adversely impacted the growth of the Indian economy. Real GDP and GVA contracted by 6.6% and 4.8%, respectively for the 2020-21 fiscal year.

• Though the National Statistical Office's (NSO) Second Advance Estimates (SAE) for 2021-22 notes that real GDP and GVA growth would grow by 8.9% and 8.3%, respectively, the absolute magnitude of real GDP in 2021-22 would only be marginally higher than the corresponding level of 2019-20.

• The NSO's data also highlights the huge gap between nominal GDP growth and real GDP growth due to high inflation rates in the economy.

• Despite an overall improvement in demand components of the economy, the growth of consumption and investment demand — as measured by private final consumption expenditure (PFCE) and gross fixed capital formation (GFCF) mark miniscule improvements in 2021-22 over 2019-20. This is indicative of sluggish revival in domestic demand and this remains a major concern for economic revival.

• The output in contact-intensive segments like trade, transport and construction sector have either been below the pre-pandemic levels or have registered only marginal improvements.

• The data of the NSO indicate both GDP and GVA showing normalizing growth with waning base effects. Without the low base effect, quarterly growth performance appears to be averaging at less than 5%.

Impact of the ongoing geopolitical conflict on India's economic recovery:

Rise in crude oil prices:

• Economic sanctions against Russia and boycott of Russian crude oil and natural gas would lead to reduced global supply of these fuels. This mismatch in demand and supply will inevitably push their prices upwards. The average Brent crude price has surged to U.S.$123.21/bbl.

• This steep rise in crude oil prices will have a marked impact on growth and inflation rates in India. It would reduce real GDP growth and increase CPI inflation. Going by the Reserve Bank of India (RBI)'s estimates (2021), even a nominal increase of U.S.$25/bbl would lead to an estimated reduction in growth of 0.7% points and an increase in inflation of nearly 1% point. The impact would be much larger if the margin of increase is enhanced.

• Sectors heavily dependent on petroleum products, such as fertilizers, iron and steel foundries, transportation, construction and coal, would be adversely affected.

• With increased prices of crude oil, there would be increases in some components of expenditures linked to prices of petroleum products, including petroleum and fertilizer subsidies. This could drive the fiscal deficit above the budgeted levels.

• Also the rise in crude oil prices would lead to worsening of the current account balance due to higher import bills with a depreciating rupee. There could be an increase in the current account deficit (CAD) by upto 1% of the GDP.

Disruption of global supply chains:

• The discontinuation of transactions through SWIFT would cause some degree of disruption in trade to and from Russia.

• Other economic challenges may include some sectoral supply-side bottlenecks and subsequent cost escalations leading to higher levels of inflation in the economy.

Impact of global uncertainties:

• The global uncertainties could lead to some adverse effects with regard to financial flows with increased Foreign Portfolio Investment (FPI)

outflows and falling Foreign Direct Investment (FDI).

Recommendations:

Bracing for the increased oil prices:

- The rise in price of petroleum products and the need to distribute this burden of higher prices among consumers and industrial users, oil marketing companies and the Government would remain a challenging task indeed.

- Bearing of the tax burden only by OMC's would lead to increased expenditure on oil linked subsidies driving fiscal deficit up. If the central and State governments reduce excise duty and value-added tax (VAT) on petroleum products, their tax revenues would be adversely affected. If the burden of higher prices is passed on to the consumers and industrial users, this could weaken investment and private consumption. The Government will have to strike an appropriate balance among these options.

Taming inflationary pressures:

- Given the increasing inflationary pressures, RBI may consider raising the policy rates to help tame inflationary pressures and also check the outward flow of the U.S. dollar from the Indian economy.

Supporting growth:

- The growth objective should be taken care of by supportive fiscal policy initiatives of the government. To revive economic growth in India, the government will have to support consumption growth and reduce the cost of industrial inputs with a view to improving capacity utilization.

> ### Nut Graf
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> *The ongoing Russia-Ukraine conflict and the geopolitical uncertainties caused by it will adversely impact the normalization of the Indian economy in the post pandemic phase. Appropriate monetary and fiscal policy initiatives will be needed to overcome the impact will sustaining the economic recovery.*

Planning, Mobilization of Resources, Growth, Development and Employment.

5. Tracking the persistent growth of China

- » Mains: China's strategy in the manufacturing sector and learnings for India

Economic performance of China during the COVID-19 pandemic:

- In 2020 during the peak of the COVID-19 pandemic, when most economies were struggling, China was in a sense, able to sustain its impressive economic performance.

- China's gross domestic product grew by 2.2% in 2020 from the previous year. China's manufacturing output registered an increase from the previous year and stood at a staggering $3.854 trillion. This growth in industrial production aided China's economy grow by 8.1% in 2021.

- Most macro-economic indicators including important ones like investment levels, retail sales registered improvements.

China's continued dominance in manufacturing sector:

- There were predictions that the rising geopolitical tensions and trade wars along with the major learnings of the COVID-19 pandemic bringing to limit the dangers of dependency on other countries for goods and services would result in factories moving out of China into newer locations.

- This prediction of 'de-factorisation of China' has not materialized. Notably, China accounts for about 30% of global manufacturing (equal to that of the United States, Japan and Germany put together). Also China remains the world's biggest exporter, accounting for 13% of world exports and 18% of world market capitalization in 2020-21.

China's strategy in the manufacturing sector:

Idea of 'dual circulation':

- China strategy for its domestic manufacturing sector is based on two types of circulation- internal and external circulation.

- The internal circulation would include domestic cycle of production, distribution and consumption while external circulation would include the manufacturing for exclusive exports to other economies. Notably, the two circuits are expected to complement each other.

- China would place more importance on 'internal circulation' and this would constitute its major route for economic growth and development. 'External circulation' would only play a supplemental role.

- The main theme of this strategy is that China would continue its emphasis on industrialisation and cut its dependence on global trade and markets.

Advanced Manufacturing:

- China is pushing industrialisation towards 'advanced manufacturing' and higher levels of automation and digitization, and increased adoption of artificial intelligence (AI). The increased role of robots and AI in manufacturing

is slowly spreading to design, delivery and even marketing.

- This gives Chinese manufacturing predominance in growing high tech sectors that are less exposed to lower cost competition. These high-tech production sectors provide for increased reliability and product quality along with cost efficiency.

- There seems to be a focused approach to establishing Chinese dominance in the AI sector. Notably, China leads in the number of AI research publications.

Other measures being taken:

- Recognizing the criticality of a skilled labour force in economic development, China has placed high emphasis on skilling its labour force.

- China has been able to ensure continued and sustainable supply of strategic raw materials to its domestic industries by increasing domestic production as well as acquiring mines in other resource rich countries.

> *Nut Graf*
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> *In the post-pandemic era, China is positioning itself to cause an unprecedented change in industrialisation through automation, digitization, and increased adoption of artificial intelligence (AI). Given the early mover advantage that China enjoys in this regard will help China remain the global manufacturing leader in the years to come.*

Indian Economy and issues relating to Planning, Mobilization of Resources, Growth, Development and Employment.

6. The era of an unemployed India

- » Prelims: Difference between underemployment and unemployment

- » Mains: Concerns with respect to employment scenario in India

Context:

- Agitations by railway job aspirants in the state of Bihar.

Concerns:

High unemployment rates:

- Unemployment was high even before the COVID-19 pandemic, with the National Sample Survey Office (NSSO) reporting a 6.1% unemployment rate in 2017-18. This was the highest unemployment rate in over four decades.

- The economic disruption caused by the pandemic only worsened the employment scenario. The unemployment rate stood at 7.91% in December 2021. As per the estimates provided by the Centre for Monitoring Indian Economy (CMIE) nearly 53 million Indians were unemployed with women accounting for a large proportion.

- Despite some improvement in the current year, the unemployment rate still stands at a worrying 6.57%.

Reducing number of government jobs:

- Not only are the number of government jobs limited but they have also been reducing in number due to the contractualization and outsourcing.

Overqualified candidates seeking middle and lower rung government jobs:

- There has been a large influx of overqualified youth aspiring for middle and lower rung government jobs.

- This is leading to underemployment. Underemployment is a measure of employment and labour utilization in the economy that looks at how well the labour force is being used in terms of skills, experience, and availability to work. It refers to a situation in which individuals are forced to work in low-paying or low-skill jobs.

- This preference for government jobs though they pay lower salaries is because of the greater job security ascribed to them. The private sector jobs are mostly characterized by high job insecurity (easy hire and fire), poor basic pay, and long hours of work. This is contributing to periodic unemployment among the workforce.

High degree of competition:

- Advertisements for even a handful of lower rung government jobs are also attracting large number of applications. The entry of overqualified aspirants results in intense competition among the aspirants.

- One of the consequences of such heightened competition has been the enforcement of higher and higher qualifications for jobs. This has resulted in massive insecurity among candidates who only meet the minimum eligibility but are having to compete with candidates having higher educational credentials.

High degree of uncertainty:

- In Universities, highly skilled workforce of serving teachers are being forced to hold insecure temporary job contracts.

Possible factors at play:

Insufficient regulation of private sector:

- The lack of adequate regulation of employer-employee work relations in the private sector has triggered periodic unemployment of even the higher skilled workers, who have been spilling over into and crowding lower rung government jobs and also lower-skilled informal sector jobs.

Reduced government expenditure:

- Reduced expenditure by the governments on health, education and the social sector as a whole has also ensured inadequate employment generation to observe the large incoming workforce.

> *Nut Graf*
>
> *The lack of adequate and appropriate employment opportunities for the workforce in India is a major point of concern both in terms of economic as well as the social impacts that unemployment results in.*

Inclusive Growth and issues arising from it.

7. Poverty rose but income inequality fell

- » Mains: Economic impact of the COVID-19 pandemic- On poverty levels and income inequality

Impact of the pandemic on poverty levels:

- The COVID-19 pandemic has had a severe economic impact. The economy has contracted with many being pushed into poverty. As a result Poverty rose during the COVID-19 pandemic. Extreme poverty, defined by the World Bank as the percentage of the population with an income below $1.90, rose from 7.6% in November 2019 to 11.7% in July 2021.

- Even though there has been a V-shaped economic recovery, output remains about 10% lower than 2019.

Impact of the pandemic on income inequality:

- The general perception is that the poor bear the brunt of any economic disruption given they remain the most vulnerable to economic disruptions because of their reliance on contractual protections and lack of adequate safety nets.

- This usual trend was not observed during the COVID-19 pandemic in India wherein interestingly it notes that income inequality has actually fallen.

Understanding the trend of income inequality:

- One can attribute this trend to a fall in the income levels of households in the top 25% of the income distribution and the almost steady or slight increase in the income levels of households in the bottom 25% of the income distribution. The result is that inequality, measured as the percentage change in the income of the top quartile minus the income in the bottom quartile, fell by 15-20 percentage points.

- One can examine three sources of household income: government transfers, business profits, and labour income to explain the above observation.

- * Government transfers includes cash or in-kind payments to support the vulnerable population. Profits Includes income from business initiatives while labour income includes wages earned from work or employment contracts.

- The government had targeted government payments to the poor to help limit the adverse economic impact of the pandemic on them.

- The rich saw a larger decline in business income. The rich depend on this type of income more than the poor. Business income being highly volatile given its susceptibility to changes in demand and macro-economic conditions of the economy suffered steeper declines than labour income levels.

- Labour income account for the largest share of the total income of both the rich and poor, with the poor accounting for the most. When the economy contracted, people lost jobs and income. These workers tried to compensate by finding alternate work, even while accepting lower pays. Notably as per the analysis carried out by the article, while the minimum amount that the poor were willing to accept to take a job fell roughly 40%, the minimum amount fell more than 45% for the rich. Also the larger loss of labour income among the top quartile households is because the demand for their labour fell more. The rich tend to work in the service sector, and demand for services fell more than demand for other sectors like manufacturing or agriculture.

> *Nut Graf*
>
> *The economic impact of the pandemic has been notable on developing economies like India. While it has increased the number of people in poverty, notably however the income inequality has actually decreased. Income inequality, measured as the percentage change in the income of the top quartile minus the income in the bottom quartile, fell by 15-20 percentage points.*

Inclusive Growth and issues arising from it

8. Unemployment benefits

- » Prelims: Schemes related to provision of unemployment relief; Related new labour code provisions

- » Mains: Concerns with the existing schemes and their functioning; Recommendations

Unemployment trend in India:

- The unemployment rate in India stood at 6.1% in 2017-18. Notably there exists a gap between urban unemployment rate and rural

unemployment rate with urban unemployment rate being on the higher side.

- While the unemployment rate declined to 5.8% in 2018-19 and 4.8% in 2019-20, urban unemployment rate has declined only marginally to 7.7% and 6.9%, respectively. The COVID-19 pandemic and the associated lockdowns has only worsened the unemployment scenario in the economy. Urban unemeployment has continued to stay high during 2021 and later. Hence urban unemployment continues to remain a grave concern.

Unemployment relief in India:

- Though the Indian labour laws do not expressly provide for unemployment benefits, various schemes and acts have provisions for unemployment benefits.

Rajiv Gandhi Shramik Kalyan Yojana:

- The Rajiv Gandhi Shramik Kalyan Yojana (RGSKY) provides unemployment allowance to involuntarily unemployed insured persons who have made contributions for two years to Employees' State Insurance. The scheme is designed under the Employees' State Insurance Act (ESIA), 1948.

- It provides cash support at the rate of 50% of the last average daily wages for the first 12 months and 25% for the next 12 months.

- It covers those who become unemployed due to retrenchment, closure or permanent invalidity. Apart from the cash relief, the scheme also provides for medical care during unemployment tenure as well as vocational training to equip the worker for future employment opportunities.

Atal Beemit Vyakti Kalyan Yojana:

- The Union government introduced the Atal Beemit Vyakti Kalyan Yojana (ABVKY) in 2018 on a pilot basis for two years.

- Under this scheme unemployed insured persons are provided cash allowance at the rate of 50% of the average per day earning of the claimant for 90 days.

- Given that the pandemic resulted in the closure of many companies, this scheme was extended during the COVID-19 period.

Industrial Disputes Act:

- As per the provisions of the Industrial Disputes Act (IDA), 1947, industrial establishments employing 100 or more workers must pay retrenchment compensation to workers in case they lose jobs due to government-sanctioned workers' retrenchment or closures of establishments.

Concerns:

- Laws and schemes have failed to offer relief to workers.

Rajiv Gandhi Shramik Kalyan Yojana:

- Employees' State Insurance Act under which the Rajiv Gandhi Shramik Kalyan Yojana functions has limited coverage in India and has also been plagued by the issue of slow expansion in its coverage.

- The available data of the RGSKY, points out to the very low number of workers availing unemployment allowance. Similar observations were also made under ABVKY

- This indicates the failure of these schemes to provide for unemployment benefits to the organised sector workers even during the pandemic. These facts strengthen the case against the government's sole reliance on these schemes.

Industrial Disputes Act:

- Employment-intensive industries like construction and services are excluded from the provisions of the Industrial Disputes act. Given that a substantial number of workers are employed in these sectors, they are rendered devoid of the benefits under the IDA.

- Notably, many States have amended provisions under the IDA to apply it to establishments employing 300 or more workers. This has resulted in a scenario where workers employed in smaller establishments are unable to receive retrenchment payments.

- The retrenchment compensation paid under the IDA remains very low and is insufficient for the workers to sustain on till they find another employment.

- The burden of unemployment allowance is transferred to the employer under the Industrial Disputes act while the government absolves itself of all responsibilities. Notably, the employers have been hesitant in paying the retrenchment compensation to workers.

New labour codes:

- The Social Security Code (SSC), 2020, though included unemployment protection in its definition of 'social security', it did not provide for a scheme for the same. It only offers vague promise of schemes to the unorganised workers. This is a point of concern given that workers in the unorganized sector are more prone to unemployment through disruptions like the pandemic and they lack even basic social security.

- Notably, the SSC has no concrete provision relating to unemployment allowance for workers of the organised sector. This is a point

of concern given that the hire and fire reforms in the Industrial Relations Code could accentuate unemployment, especially in urban areas.

Recommendations:

- An urban employment guarantee scheme on the lines of the successful MGNREGA should be framed to provide for adequate employment opportunities for workers in the urban labour market.

- Economists have shown that relief to workers does not cost much as a proportion of GDP. The governments should abandon their neoliberal policies and consider allowing for a universal unemployment allowance scheme to ensure inclusive economic development.

- The Social Security Code must be amended to provide for a universal unemployment allowance scheme funded by the tripartite contributions of employers, workers and the government.

> ### Nut Graf
>
> Given that the existing laws and schemes have failed to offer adequate unemployment relief to the needy workers and given that unemployment relief is a major aspect of social security and is critical for the inclusive economic growth and development of India, the government should work towards providing a universal unemployment allowance scheme.

Organizations in news

9. Export Credit Guarantee Corporation

» Prelims: Export Credit Guarantee Corporation

Context:

- Export Credit Guarantee Corporation has modified the insurance cover category for Indian exports to Russia.

- Revising its underwriting policy on Russia, ECGC has now put Russia in the Restricted Cover Category (RCC-I) from the earlier 'Open Cover' category. The corporation clarified that coverage on export to Russia had not been withdrawn.

  * Open cover categories enable policyholders to obtain cover on a more liberalized basis.

About Export Credit Guarantee Corporation (ECGC):

- ECGC Ltd. is wholly owned by the Government of India.

- It was set up in 1957 with the objective of promoting exports from the country by providing credit risk insurance and related services for exports.

- ECGC is essentially an export promotion organization, seeking to improve the competitiveness of the Indian exports by providing them with credit insurance covers.

- ECGC provides

  * a range of insurance covers to Indian exporters

  * different types of credit insurance covers to banks and other financial institutions

  * Export Factoring facility for MSME sector

Indian Economy and issues relating to planning, mobilization, of resources, growth, development.

10. Trade deficit seen high, to widen CAD

» Mains: Analysing India's rising trade and current account deficits and the reasons for the increase.

India's Trade and Capital Account Deficit

- India's trade deficit rose to $21.2 billion in February 2022, and is expected to rise in the next few months.

- The trade deficit had reduced to $17.9 billion in January 2022 after peaking at $22.9 billion in November 2021 and averaging $21.7 billion between September and December 2021.

- The current account deficit is expected to widen to 2.6% of GDP in 2022-23 from 1.7% in 2021-22.

Reasons for the rising deficits

Rise in oil prices

- Brent crude oil prices reached $120 a barrel.

- The Union Budget for 2022-23 had assumed an average oil price of $75 a barrel.

- A 10% rise in global oil prices would widen India's current account deficit by 0.3% of GDP.

Rise in imports bill

- Along with the rising imports of oils, there was also an increase in the imports of commodities, fertilizers and gold imports.

Russia Ukraine Conflict

- Despite Russia accounting for just 0.8% of India's exports, the risks to export demand will increase as the slowdown in Russia's economy has ripple effects.

- Indian exports to the Commonwealth of Independent States (CIS) include, Pharmaceutical, telecom, marine products, and iron & steel.

Energy

11. Nuclear energy

» Mains: The nuclear energy situation in India and around the world and key concerns regarding it

Background:

- Post the Fukushima accident there has been a transformation in the nuclear power situation not just in Japan, but across the world. Plans for scaling up nuclear power were put on hold across the globe.

  * In 2008, the U.S. projected an expansion of nuclear capacity to 114.9 GW by 2030. However, in 2021, it was estimated that capacity would reduce to 83.3 GW.

  * Even on a global scale, in 1996, 17.5% of the world's electricity was from nuclear sources. But by 2020, it had declined to around 10%.

Nuclear Energy situation in India:

- India also cut its nuclear energy ambitions after the Fukushima incident.

  * In 2008, it was projected that India would have 650GW of nuclear-installed capacity by 2050.

  * However, in 2010 it was said that capacity would reach 35 gigawatts by 2020.

  * The total installed capacity currently(2022) is only 6.78 GW

- India plans to build 10 indigenous reactors along with 28 additional reactors out of which 24 would be imported from countries like France, Russia and the United States.

  * Out of 24, six are of the water-water energetic reactors (VVER) that have had multiple operational problems at Kudankulam in Tamil Nadu.

  * 12 are said to be imported from the U.S., which includes AP1000 reactors that were abandoned in South Carolina.

  * The other six are of the European Pressurized Reactors (EPR) type that France failed to complete in its own country.

Key Concerns regarding Nuclear Energy

- **Cost factor** - With the cost of energy generation from solar photovoltaics and wind turbines reducing significantly, nuclear energy is no longer an economical source.

  * If nuclear energy is to be sold at a competitive rate, it should be greatly subsidised by the government

- **Not feasible imports** - An EPR plant that is planned to be imported from France now costs significantly more than what was estimated in 2013, electricity from these reactors would cost a minimum of ₹15 per unit excluding transmission costs. Whereas, energy from solar and wind projects costs around ₹4.30 per unit.

  * The energy produced from AP1000 reactors would also cost the same as EPR plants.

- **Risks associated with safety** - In a country that is densely populated and with less advanced emergency health care facilities, a nuclear disaster could be catastrophic.

  * There are also strong protests by the local communities against setting up nuclear reactors.

- **Concerns about climate change** - Climate change will further increase the risk of nuclear accidents.

  * Apart from the Fukushima incident, a wildfire near the Hanul nuclear power plant in South Korea caused panic.

  * In 2020, a tornado caused the shutdown of Duane Arnold nuclear plant in the U.S.

Conclusion

- Considering the high risks associated with nuclear reactors and their high costs, it would be best for the Government to have a relook at its Nuclear Energy Policy as the resources spent on nuclear energy will yield faster results if they are redirected towards other renewable sources.

Energy

12. India's solar capacity: Milestones and challenges

» Mains: Solar energy capacity in India and the challenges in mainstreaming solar energy

Context:

- India's Efforts in Solar Energy and manufacturing capacity:

Context:

- In 2021, India added a total of 10 Gigawatts (GW) of solar energy to its installed capacity.

- India already has more than 50 GW of installed solar capacity.

- India's capacity additions place the country fifth in the world in terms of solar power deployment, accounting for about 6.5 percent of total worldwide capacity.

- According to Crisil, India has 3 GW of solar cell production capacity and 8 GW of solar panel production capacity.

- India bought almost $76.62 billion worth of solar cells and modules from China alone in 2021-22, accounting for 78.6% of the country's total imports.

Why is India falling short in roof-top solar installations?

- The sharp increase in large-scale ground-mounted solar energy is symptomatic of a significant drive across the country to increase the share of utility-scale solar projects. There seems to be greater focus on such projects over smaller rooftop projects.

- Residential consumers and Small and Medium Enterprises (SMEs) that want to install rooftop solar have limited financing options (RTS).

- RTS continues to have limited penetration across the country, owing to lukewarm responses from power distribution firms (DISCOMS) to adopting net metering.

Challenges to India's solar power capacity addition

- Despite large increases in installed solar capacity, solar energy's contribution to the country's power output has not kept pace.

  * For example, Solar power generated only 3.6 percent of India's total electricity generation in 2019-20.

- Domestic solar manufacturing capacity is insufficient to meet the country's current prospective demand for solar energy.

- Land costs, substantial T&D (expand) losses and other inefficiencies, and grid integration issues continue to plague the utility-scale solar PV business.

- Conflicts with local people and biodiversity preservation norms have also arisen under the large scale solar power plants

- Furthermore, because India lacks the capacity to manufacture solar wafers and polysilicon, there is no backward integration in the solar value chain.

Recommendations:

- For solar systems, India has to embrace a circular economy approach. This would allow for the recycling and reuse of solar PV waste throughout the solar PV supply chain. This could reduce the need for new materials and also in the process reduce the costs of the PV modules.

- India may want to consider adopting norms for Extended Producer Responsibility (EPR). This might provide a competitive advantage for indigenous manufacturers while also resolving waste management and supply-side restrictions.

- Governments, utilities, and banks will need to look into new financial mechanisms to lower lending costs and lower the risk of investment for lenders.

- Increased knowledge and accessible financing for solar projects could help ensure that solar devices are used by a large number of SMEs and households across the country.

> **Nut Graf**
>
> *India has progressed from strength to strength in overcoming challenges to reach the 50 GW milestone for solar energy installation however further measures are required to overcome the challenges faced by the sector to realize the goals set under the National Solar Mission.*

Indian Economy and issues relating to planning, mobilization, of resources, growth, development

13. The National Land Monetisation Corporation

  » Prelims: National Land Monetisation Corporation

  » Mains: Monetisation of Assets and significance of National Land Monetisation Corporation

Context:

- The Union Cabinet approved the creation of the National Land Monetisation Corporation (NLMC) to carry out monetisation of government land holdings.

Monetisation of Assets:

- Asset monetisation is the process of creating new sources of revenue for the government and its entities by unlocking the economic value of unutilised or underutilized public assets.

- **How does it work?**

  * When the government monetises its assets, it essentially means that it is transferring the revenue rights of the asset to a private player for a specified period of time.

  * In such a transaction, the government gets in return an upfront payment from the private entity, regular share of the revenue generated from the asset, a promise of steady investment into the asset, and the title rights to the monetised asset.

- **Ways to monetise government assets:**

  * Real Estate Investment Trust (REIT): It is a company that owns and operates a land asset and sometimes, funds income-

producing real estate. This method can be used in the case of land monetisation of certain spaces like offices.

* Public Private Partnerships (PPP) model: Assets of the government can also be monetised through the Public Private Partnerships (PPP) model.

- **Reasons for asset monetisation:**

* To create new sources of revenue as the economy needs revenues to fulfill the government's target of achieving a $5 trillion economy.

* Monetisation is also done to unlock the potential of unused or underused assets by involving institutional investors or private players.

* It is also done to generate resources or capital for future asset creation, such as using the money generated from monetisation to create new infrastructure projects.

National Land Monetisation Corporation

- National Land Monetisation Corporation is the Special Purpose Vehicle (SPV) that was announced in the Union Budget 2021-22.

Aims and Objectives:

- To carry out monetisation of government and surplus land holdings of public sector undertakings (PSU).

- To carry out the monetisation of government and public sector assets in the form of surplus, unused or underused land assets.

- To facilitate the monetisation of assets belonging to PSUs that have ceased operations or are in line for a strategic disinvestment

Functions:

- It will be a firm, fully owned by the government and will act as an advisory body.

- It will fall under the administrative jurisdiction of the Ministry of Finance.

- It will be set up with an initial authorized share capital of ₹5,000 crore and a paid-up capital of ₹150 crore.

- It will support other government entities and CPSEs in identifying their surplus non-core assets and monetising them in an efficient manner.

Benefits of National Land Monetisation Corporation

- The setting of the NLMC will speed up the closure process of the CPSEs and smoothen the strategic disinvestment process.

- It will also enable productive utilization of these under-utilized assets by setting in motion private sector investments and new economic activities such as industrialisation.

- It will boost the local economy by generating employment and generating financial resources for potential economic and social infrastructure.

Working of NLMC:

- The firm will hire professionals from the private sector with a merit based approach.

- This is because asset monetisation of real estate requires expertise in valuation of property, market research, investment banking, land management, legal diligence etc.

- The NLMC will undertake monetisation as an agency function and is expected to act as a directory of best practices in land monetisation.

Challenges for NLMC:

- The performance and productivity of the NLMC will depend on the government's performance on its disinvestment targets which seems to be difficult to achieve in uncertain conditions.

- Besides, there are also challenges in identifying profitable revenue streams for the monetised land assets, ensuring adequate investment by the private player and setting up a dispute-resolution mechanism are also important tasks.

- Another potential challenge would be the use of Public Private Partnerships (PPPs) as a monetisation model.

- The presence of just a few serious bidders would also give rise to the possibility of a less competitive space.

> ### *Nut Graf*
> The formation of the National Land Monetisation Corporation for monetization of land and non-core assets is a significant step as the government would be able to generate substantial revenues by monetizing unused and under-used assets.

Indian Economy and issues relating to planning, mobilization, of resources, growth, development and employment.

14. 'Gujarat tops again in export preparedness'

» Prelims: Export Preparedness Index for 2021

Context:

- NITI Aayog released the Export Preparedness Index (EPI) 2021.

Export Preparedness Index for 2021:

- NITI Aayog, in partnership with the Institute of Competitiveness, released the Export Preparedness Index (EPI) 2021.

- The report is a comprehensive analysis of India's export achievements.

- The Export Preparedness Index is a data-driven endeavour to identify the fundamental areas critical for subnational export promotion.

Framework:

- The 4 pillars and the rationale behind their selection is given below:

  * Policy: A comprehensive trade policy provides a strategic direction for exports and imports.

  * Business Ecosystem: An efficient business ecosystem can help attract investments and create an enabling infrastructure for businesses to grow.

  * Export Ecosystem: This pillar aims to assess the business environment, which is specific to exports.

  * Export Performance: This is the only output-based pillar and examines the reach of export footprints of states and union territories.

Findings of Export Preparedness Index for 2021

- Gujarat has been named India's top State in terms of export preparedness for the second year in a row as per an index released by the NITI Aayog.

- Maharashtra, Karnataka, Tamil Nadu were ranked second, third and fourth in the index.

  * Coastal States with higher industrial activity and access to sea ports account for a majority of India's exports.

Infrastructure - Airports

15. Greenfield Airport at Hollongi

  » Prelims: Greenfield airports

  » Mains: Significance of Greenfield projects in India

Context:

- A Greenfield airport will be established at Hollong in Arunachal Pradesh considering the significance of air connectivity.

About the Greenfield airport:

- The Airports Authority of India has taken up the initiative to work towards the construction of a greenfield airport in Hollongi.

- Hollongi is 15 km from Itanagar and this greenfield project will facilitate better connectivity once completed.

- It is designed for operations of the A-320 category of aircraft and future extension of runway by 500 metres length with a capacity of handling 200 passengers.

- The terminals will be provided with an energy-efficient rainwater harvesting system and sustainable landscape.

Significance:

- This Greenfield project will be a boost to transform Arunachal Pradesh into a gateway to southeast Asia by developing modern infrastructure across the state.

- As this airport will connect the capital city, it was a much-needed step to accelerate economic activities in the region.

Greenfield Airports: Salient Features

- It is an aviation facility with the characteristics of a Greenfield project that develops a system for a totally new environment without integrating with other systems. It is a concept used in software development.

- The guidelines for the development of Greenfield airports in the country have been formulated by the Greenfield Airport Policy, 2008. These guidelines place contingent responsibilities on the central and state governments exemplifying competitive and cooperative federalism.

- Greenfield airports include those where all activities from airport planning to commissioning are carried out from the very beginning in cities that are not at all connected by air services.

- Greenfield projects are the ones that lack any constraints due to existing infrastructure or prior work.

- Pakyong was the first Greenfield airport to be constructed in the northeast region of India and is located near Gangtok, Sikkim.

Issues of food security

16. Indian Standards for Soy Products

  » Prelims: Soy Products, BIS

  » Mains: Examining the interventions that ensure food safety and security in India.

Context:

- The Bureau of Indian Standards has organised an awareness webinar on Indian Standards on Soy products.

What are Soy Products?

- Soy products include soybeans and soy foods that reduce the risk of several health problems like cardiovascular disease, stroke, coronary heart disease along with the improvement in bone health.

- Soybeans are members of the pea (legume) family of vegetables and have been a staple of Asian cuisines for many years.

- Soybeans contain hormones like phytoestrogens that have many beneficial effects on women. For example, isoflavones are phytoestrogens that act as strong antioxidants and can replicate the effects of female oestrogen.

- Soy flour and soy nuts are the richest sources of isoflavones.
- Soybeans are rich in fibre, protein, omega 3 fatty acids, have low saturated fats and are free from cholesterol and lactose.
- Soy products include a wide variety of unfermented foods such as tofu, soymilk, edamame, soy nuts and sprouts and fermented foods like miso, tempeh, natto and soy sauce.
- There exists another variety of soy products called second-generation soy products. These comprise tofu sausages and burgers, soy breads, soy pasta and soymilk yoghurt and cheeses.

Objective of the webinar:

- To maintain the quality and safety of soy products, the discussion took place with the major intention to standardise the physical, chemical and microbiological parameters and their test methods.

About the discussion:

- The manufacturers of soy products were encouraged to take BIS certification for the use of the ISI (Indian Standards Institution) mark which depicts the Indian Standards for industrial products in India since 1955.
- BIS has published seven standards for soy products

Submitted to BIS the draft Indian standards of eleven different soy based food products

Sl. No.	Name of Product	Status	IS No.
1	Full fat soy flour	Published	IS 7837 : 2013
2	Medium Fat soy flour	Published	IS 7835: 2013
3	Defatted soy flour	Published	IS 7836: 2013
4	Soy milk	Published	IS 16489:2018
5	Soy nuts	Published	IS 17651:2021
6	Soy butter	Published	IS 17652:2021
7	Soy-amrakhand	Published	IS 17653:2021

Mobilization of resources, growth, development and employment.

17. India Semiconductor Mission

» Mains: Key features of the India Semiconductor Mission and Semicon India Programme

Context:

- The Union Cabinet approved the Semicon India programme.

Semicon India programme

- The programme will help in the development of semiconductors and display manufacturing ecosystems in India.
- The programme has a total outlay of Rs. 76,000 crore.
- The programme aims to provide financial support to companies investing in semiconductors, display manufacturing and design ecosystem.
- This will serve to pave the way for India's growing presence in the global electronics value chains.

India Semiconductor Mission

- India Semiconductor Mission (ISM) has been established as an Independent Business Division within Digital India Corporation having administrative and financial autonomy to formulate and drive India's long term strategies for developing semiconductors and display manufacturing facilities and semiconductor design ecosystem.
- It will also serve as the nodal agency for efficient, coherent and smooth implementation of the schemes.
- It will formulate comprehensive long-term strategies for developing semiconductors & display manufacturing facilities and semiconductor design ecosystem in the country in consultation with industry and academia.
- It will enable a multi-fold growth of the Indian semiconductor design industry by providing requisite support in the form of Electronic Design Automation (EDA) tools, foundry services and other suitable mechanisms for early-stage startups.
- It will also promote and facilitate indigenous Intellectual Property (IP) generation and encourage, enable and incentivize Transfer of Technologies (ToT).
- ISM will also enable collaborations and partnership programs with national and international agencies, industries and institutions for catalyzing collaborative research, commercialization and skill development.

Indian Economy and issues relating to planning, mobilization, of resources, growth, development and employment.

18. PLI Scheme for White Goods (ACs and LED Lights)

» Prelims level: PLI Scheme; White Goods

Context:

- The Union Cabinet had given approval for the PLI Scheme for White Goods for the manufacture of components and sub-assemblies of Air Conditioners (ACs) and LED Lights.

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PLI Scheme for White Goods (ACs and LED Lights)

- The Production Linked Incentive (PLI) Scheme for White Goods (PLIWG) shall provide financial incentives to boost domestic manufacturing and attract large investments in the White Goods manufacturing value chain.

    * White goods refer to heavy consumer durables or large home appliances, which were traditionally available only in white.

    * They include appliances such as washing machines, air conditioners, stoves, refrigerators, etc.

- The prime objective of the PLI scheme is to make manufacturing in India globally competitive by removing sectoral disabilities, creating economies of scale, and ensuring efficiencies.

- The Scheme shall extend an incentive of 4% to 6% on incremental sales for a period of five (5) years subsequent to the base year and one year of gestation period.

- Only manufacturing of components of ACs and LED Lights will be incentivized under the Scheme.

Significance

- The scheme is expected to attract global investments, generate large-scale employment opportunities and enhance exports substantially.

Agriculture; Marketing of agricultural produce

19. India's maize exports

» Prelims: Facts regarding Maize cultivation in India

» Mains: Trends in Indian exports

Context:

- Increase in India's maize exports.

Maize cultivation

- Maize is regarded worldwide as the "queen of cereals". It is one of the most important cereal crops in India after rice and wheat.

- It is extensively cultivated in States like Karnataka, Madhya Pradesh, Kerala, Bihar, Tamil Nadu, and Maharastra.

- Maize has the highest genetic yield potential among the cereals and is highly adaptable to various climatic changes.

- Maize is used as a staple food for humans and animals, it is also used as a raw material in the production of starch, oil, alcoholic beverages, pharmaceuticals, cosmetics, textile, gum, paper industries, etc.

Trends in export of Maize in India

- The export of maize has clocked an all-time high of USD 816.31 million in the fiscal year 2021-22.

- Maize became a major foreign exchange earner under the commodities covered under the Agricultural and Processed Food Products Export Development Authority (APEDA).

Fiscal Year	2019-20	2020-21	2021-22(April - Jan)
Export of Maize (in USD Millions)	142.8	634.85	816.31

Indian Economy and issues relating to planning, mobilization, of resources, growth, development and employment.

20. Exports cross $400-bn annual target

» Mains: The significance of the surge in merchandise exports and its role in the revival of the Indian economy.

## Context:

- India's annual goods exports breached the $400-billions mark.

Details

- India's merchandise exports crossed $400 billion in the financial year 2021-22.

    * This is the highest ever and the previous record was $330 billion which was achieved in 2018-19.

- India's annual exports have been boosted by the increase in shipments of merchandise; engineering products; apparel and garments; gems and jewellery; and petroleum products.

- The agriculture sector has also achieved its highest-ever export during 2021-22 due to the increase in the exports of rice, marine products, wheat, spices and sugar.

- The exports of organic & Inorganic Chemical; Mica, Coal and Other Ores; Minerals Including Process, Engineering Goods and Plastic are the other major Commodities have also performed better than the expected targets.

Export surge | India's merchandise exports have reached $400 billion in FY22, nine days ahead of the target after registering a dip in FY21 due to the pandemic. Despite the surge, India's balance of trade remains negative
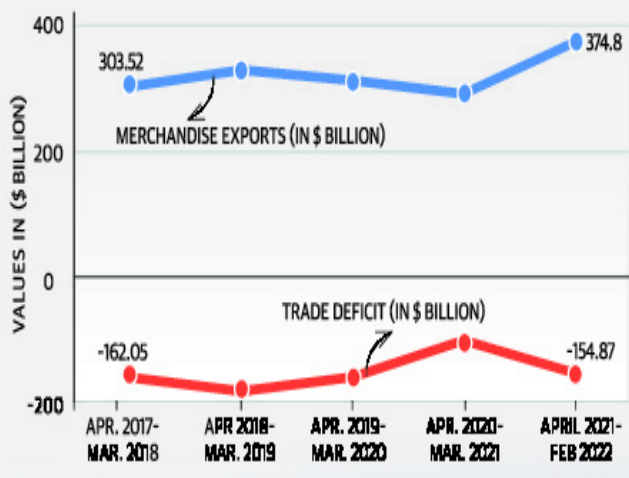
Why exports are important?

- Exports are one of the fundamental drivers of growth for any economy.
- It can influence a country's GDP, exchange rate, level of inflation as well as interest rates.
- A robust export data is beneficial as it leads to increase in job opportunities, enhances foreign currency reserves, boosts manufacturing and also increases government's revenue collection.
- It is also a good means by which a country can bring itself out of the recession phase. Exporting to countries with a favourable economic climate helps in increasing the GDP levels as well as helps in reducing unemployment.
- Besides, it also plays a key role in strengthening the domestic manufacturing units by scaling up their quality to make India made products compete and stand out against global peers.

Government initiatives

- The government has provided a conducive environment and infrastructure for the industry and exporters to enhance their export performance.
- The successful implementation of RoDTEP and RoSCTL schemes despite the challenges posed by the pandemic also boosted the sector.
- The extension of the Interest Equalisation Scheme to exporters benefited a large number of MSME exporters.

- Government has undertaken various efforts to enhance domestic capacity and for deepening integration in the Global Value Chains.
- PLI schemes for 13 major sectors of manufacturing have been announced starting from FY 2021-22.
- Efforts also have been made to set up a strong backward and forward linkage, starting from the district level to the overseas market with the help of multiple stakeholders.

Significance of the achievement

- The increase in exports will strengthen India's position in the ongoing negotiations for Free Trade Agreements (FTAs) with several trade partners.
- Rising exports will help greatly in employment creation, especially in labour-intensive sectors.
- This also gives confidence to India to work with the rest of the world from a position of strength and also provides opportunities to explore new markets.

Challenges

- The outlandish export growth rate of India has opened up umpteen trade opportunities for India with a prime focus in the area of Free Trade Agreement strengthening its position in the international market. However, there exists enormous possibility of competition in various sectors from India's Asian peers such as Vietnam and Bangladesh.
- Even though there has been an increase in exports and imports, India's Trade Deficit has shown a steep rise which is higher than the year hit by pandemic (2020-21) with a regular spike in monthly trade deficit.
  * Imports have been observed to gain greater momentum than exports that added on to the trade deficit.
- The Ukraine-Russia conflict might result in the increase of India's farm produce exports like wheat and maize but this could pose the challenge of a prominent rise in India's energy import bill along with the rise in the costs of importing edible oils like sunflower oil which is produced majorly by Ukraine and Russia.
- Most economists opined for a probable weakening of rupee in the upcoming days which could be of lesser benefits for the exporters.

Way forward

- The diplomatic corps should enlarge their

role in trade promotion to sustain the current momentum in exports.

- The lack of purchases of capital goods from abroad for new projects shows that the private players in the country are hesitant to make fresh investments due to the lack of momentum in personal consumption.

  * Effort needs to be made to increase the domestic consumption demand.

Nut Graf:

India crossing an ambitious target of $400 billion in goods exports, despite the challenges of the COVID-19 pandemic and the global uncertainties due to the Ukraine crisis is a remarkable step towards achieving India's vision of "Aatmanirbhar Bharat".

INTERNATIONAL RELATIONS

Bilateral, Regional and Global Groupings and Agreements involving India and/or affecting India's interests.

1. Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation

» Prelims: BIMSTEC

» Mains: Significance and challenges of the Bay of Bengal region; Significance of BIMSTEC

Context

- Sri Lanka will be hosting the Fifth Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) Summit in virtual/hybrid mode.

  * BIMSTEC is celebrating its 25th year of establishment.

BIMSTEC:

- The seven member regional organization consisting of India, Bangladesh, Sri Lanka, Myanmar, Thailand, Nepal and Bhutan, BIMSTEC was founded in 1997.

- BIMSTEC has identified the following 14 areas for co-operation and collaboration.

  * Trade and investment

  * Transport and communication

  * Energy

  * Tourism

  * Technology

  * Fisheries

  * Agriculture

  * Public health

  * Poverty alleviation

  * Counter terrorism and transnational crime

  * Environment and disaster management

  * People-to-people contact,

  * Cultural cooperation

  * Climate change.

Significance of the Bay of Bengal region:

Ecological:

- Bay of Bengal region is home to a large network of estuaries, mangrove forests, coral reefs, sea grass meadows and mass nesting sites of sea turtles. This makes the region ecologically critical.

Social:

- The region supports a coastal population of approximately 185 million people. The fishermen population alone is estimated to be around 3.7 million.

Economic:

- The blue economy potential of the Bay of Bengal is huge. There are many opportunities to develop maritime trade, shipping, aquaculture and tourism.

- The annual fish catch in the region is around six million tonnes. This constitutes for around 7% of the world's annual fish catch and is valued at around $4 billion USD.

Concerns/challenges:

Ecological degradation:

- The rich marine ecosystem of the Bay of Bengal region remains extremely fragile and vulnerable to degradation and damage.

- The annual loss of mangrove areas and coral reefs remains substantial. The destruction of such natural protection against floods and sea erosion threatens submergence of coastal areas. This becomes all the more concerning given that the sea levels are predicted to increase by 0.5 metres in the next 50 years.

- The growing population pressure and industrial growth in the coastal areas has resulted in huge quantities of untreated waste flow into the waters of the region. This is leading to the emergence of dead zones in the region.

  * Dead zones are areas of water bodies where aquatic life cannot survive because of low oxygen levels. Dead zones are generally caused by significant nutrient pollution, and are primarily a problem for bays, lakes and coastal waters since they receive excess nutrients from upstream sources.

- The leaching of plastic from rivers into the waters of the region is contributing to plastic pollution and the consequent adverse effects on the marine ecosystem.

Unsustainable fishing practices:

- Around 4,15,000 fishing boats operate in the Bay of Bengal region and it is estimated that 33% of fish stocks are fished unsustainably.

- According to the Food and Agriculture Organization of the United Nations (FAO), the Bay of Bengal is one of the illegal, unreported, and unregulated (IUU) fishing hotspots in the Asia-Pacific.

Vulnerability to disasters:

- The region is prone to natural disasters. There have been 13 cyclonic storms in the last five years alone. Given that the region houses a long coastline, it is prone to disasters such as tsunami as well.

- Also given that the region has high density shipping lanes. The region is also prone to man-made disasters like oil spills as is observed in Sri Lankan waters.

Security threats:

- Security threats such as terrorism, piracy and tensions between countries caused by the arrests of fishermen who cross maritime boundaries into the territorial waters of other countries are the major challenges.

  * The problem of fishermen crossing into the territorial waters of neighbouring countries affect India's relationship with Sri Lanka, Bangladesh and Myanmar.

Significance of BIMSTEC for India:

- BIMSTEC is witnessing enriched political support and commitment from India, given its special significance for India.

Substitute for failure of the SAARC:

- The strains in the bilateral relations between India and Pakistan has rendered SAARC almost defunct. BIMSTEC provides India a parallel platform for regional co-operation devoid of Pakistan.

- Also trade agreement like the SAARC Preferential Trade Agreement (SAAFTA) and other such critical initiatives of SAARC are not yet realized. With SAARC proving to be insufficient to realize India's goal of Neighbourhood First policy, India is now looking towards BIMSTEC.

Increased focus on Act East policy:

- The shift of India's foreign policy towards east affirms the importance of India's Act East Policy in the coming years.

- The importance of maritime neighbourhood along with continental neighbours and India's need to negate the Chinese influence further added to the shift in focus to BIMSTEC. Thus BIMSTEC will help revitalize India's regional cooperation in the Bay of Bengal region along with deepening its relations with ASEAN.

Significance for North east India:

- BIMSTEC connects India's northeast with BIMSTEC countries. This would enable better connectivity to the region and contribute to its economic development.

Tool for India's neighbourhood first policy:

- Bay of Bengal region is integral to India's 'Neighbourhood First' and 'Act East' policies which can accelerate the process of regional integration.

Countering growing Chinese influence:

- China's growing influence and assertiveness in the region remains a major concern for Peace and security of the region. BIMSTEC offers India a platform to counter China multilaterally.

Economic importance:

- BIMSTEC holds immense significance for India to realize its 'blue economy' ambitions.

- The Bay of Bengal is strategically located linking the Indian Ocean and Pacific Ocean. Carrying one fourth of the global trade, it becomes the access point to India for resources including energy source like natural gas reserves and securing this economically significant region is important for India to enlarge its economic market.

Significance of BIMSTEC for the region:

- Notably BIMSTEC matters not just for India but also to the entire region.

Bridge between the two regions:

- BIMSTEC serves as a bridge between two major high-growth centres of Asia — South and Southeast Asia.

- Comprising of five states from South Asia (Bangladesh, Bhutan, India, Nepal and Sri Lanka) and two countries from South East Asia (Myanmar and Thailand), BIMSTEC enables regional integration by acting as a bridge between South Asia and South-East Asia.

Strategic significance:

- Bay of Bengal region is emerging as a new strategic space with the emergence of the idea of the 'Indo-Pacific' region.

- The rapidly changing geopolitical calculus and the growing economic, geopolitical and security connections between the Western Pacific and the Indian Ocean regions are creating a shared strategic space in the Indo-Pacific and the Bay of Bengal is evolving as the centre of the Indo-Pacific region.

Tool for regional integration:

- BIMSTEC offers significant avenues for regional integration between the member states through co-operation and collaboration for developmental cooperation.

- The geographical contiguity, abundant natural and human resources, and rich historical linkages and a cultural heritage between the member nations offers significant potential for the BIMSTEC to promote deeper cooperation in the region.

Performance of BIMSTEC:

- Though the organization was mild and slow in the initial stages, the rising potential of the organisation and its strategic relevance led to the strengthening of the organization.

- There has been tangible progress in BIMSTEC cooperation in several areas that include security, counter-terrorism, intelligence sharing, cybersecurity and coastal security, and transport connectivity and tourism, among others.

Major developments during the latest summit:

- The signing of the Charter of the organization was the major result of the summit.

  * Adoption of the Charter plays a significant role in laying an institutional foundation for BIMSTEC.

  * Further, the Charter has given the BIMSTEC a new shape and well-defined goals.

  * The signing of the Charter has got BIMSTEC international recognition.

  * BIMSTEC now has its own emblem, a flag and listed objectives and principles that it is going to adhere to.

- The declaration of the Master Plan for Transport Connectivity was also announced at the latest summit in Sri Lanka.

  * This would now provide a framework for regional and domestic connectivity.

- With a view to develop a formal structure of the organisation, the member nations agreed to divide the working of the grouping into seven pillars.

  * India will take the leadership of the security pillar.

Way forward:

- The Prime Minister of India recommended a Free Trade Agreement among the member countries for strengthening the BIMSTEC.

- There also exists a need for developing a coastal shipping ecosystem and electricity grid interconnectivity between the nations as these two components play a crucial role in shaping BIMSTEC.

Nut Graf

The BIMSTEC grouping holds immense significance for India and the region. It can act as a platform to realize India's Neighbourhood First Policy, Act East Policy and blue economy ambitions while also acting as a natural platform for development cooperation in the region ensuring regional integration.

Effect of Policies and Politics of Developed and Developing Countries on India's Interests, Indian Diaspora.

2. No ovation for India's stand on the Ukraine war

  » Mains: India's stance on the Russia- Ukraine issue; Arguments for and against this stand.

Context

- India has had to walk a diplomatic tightrope over Russia-Ukraine issue as it tries to balance its ties with Moscow and the West.

India's stand on the Russia- Ukraine conflict:

- India's first statement in the UN Security Council (UNSC) did not name any country directly but it said it regretted that calls from the international community to give diplomacy and dialogue a chance had not been heeded. It, however, stopped short of criticising Russia.

- India talked about the importance of the UN Charter, international law, and respect for the sovereignty and territorial integrity of states while calling on the member states to honour these principles in finding a constructive way forward.

- India along with 34 other countries abstained from a UN General Assembly resolution that censured Russia over its military actions against Ukraine. India had also abstained from the UN Security Council procedural vote to call for a General Assembly session on the Ukraine crisis.

- India appears to be following the strategy of non-alignment and promoting dialogue to resolve issues. India has been constantly appealing for peace. India at UNSC strongly emphasized the need for all sides to exercise the utmost restraint and intensify diplomatic efforts to ensure a mutually amicable solution.

- India's stand on the ongoing Ukraine-Russia crisis could be termed as Neutral.

Arguments in favour of India's stand:

- Arguments justifying India's stand on the issue rely on the fact that in international affairs, a country must be primarily guided by its national interest.

Strategic significance of Russia for India:

- Given India's very high dependence on Russia for defence equipment and the likely need of support on the Pakistan issue in the Security Council, India must not offend Russia by condemning the invasion and this could be one of the main reasons behind India's stand.

- Russia continues to be India's largest arms supplier even though its share has dropped to 49% from 70% due to India's decision to diversify its portfolio and boost domestic defence manufacturing.

- Russia is supplying equipment like the S-400 missile defence system which gives India crucial strategic deterrence against China and Pakistan, and that is the reason why it went ahead with the order despite threats of looming US sanctions.

East-west conflict:

- Another important argument for the current stand rests on the grounds that the Russian invasion and the West's reaction, is a conflict between the east and the west, and India should stay out of it.

Student evacuation issue:

- India also has had the tough task of trying to evacuate 20,000 citizens, mostly students, from Ukraine.

- Given that safety assurances are needed from all parties in a conflict to run a successful evacuation operation partly explains India's neutral stand on the issue. India's taking side in the conflict could endanger the safety of its citizens.

- Notably, India has been able to get help both from Ukraine and Russia to evacuate its citizens. With hundreds of citizens still stuck in Ukraine, India with its stand can continue to seek cooperation from all sides.

Balancing ties:

- India has a connection with both countries involved in the war - economically, security-wise, education-wise and politically as well. This is the reason why India has taken a neutral stand in the conflict.

- India's neutral stand allows it to keep channels open with everyone. In that sense, India is in a unique position as it's one of the few countries which has good relations both with the west and Russia.

Arguments against India's stand:

Weal moral principles:

- India's action is tantamount to averting attention from unprovoked aggression towards an independent country by the much stronger Russian army.

- India's refusal to take a firm line on the Russian invasion comes across as India's lack of compassion for the people of Ukraine facing military aggression. India's stand on the issue comes across as unethical given that India chose its own national interests over the plight of innocent Ukrainian nationals.

- This would adversely impact, India's image in the international domain where it seeks to establish itself as the 'Vishwaguru' or World Teacher.

Lack of commitment to international laws and principles:

- The stand taken by India also demonstrates the lack of commitment to established principle in international affairs. It in fact goes against the principles of Panchsheel- the guiding principle for Peaceful Coexistence in international relations.

- The stand also goes against the ancient belief of Vasudhaiva Kutumbakam, implying that the world is a family.

- The stand taken by India leave it in the company of Russia and China. These nations have often indulged in aggression against sovereign states and viewed as disruptors of international peace and security.

Interests and principles cannot be separated:

- The article argues that it is untenable to separate national interests and national principles. Given that the principles are the most deeply held beliefs about how the world must be ordered, then the nation's interest lies in ensuring that these principles prevail in international relations.

- India's stand on the issue could rebound on Indians in their interaction with the rest of the world in the future, unfavourably. If India does not want to see itself to be the victim of territorial aggression in the future, it must communicate strongly on the world stage that it condemns the Russian invasion of Ukraine.

Changed international relations dynamics:

- Notably, India had taken a similar stance during the Soviet invasion of Hungary in 1956 where it had abstained from voting in the UN. The article however argues that the two situations cannot be compared given that in the 1950s the West was mostly unsympathetic to India's concerns and was backing Pakistan on the Kashmir issue with the erstwhile Soviet Union rescuing India several times by exercising its veto in the UN Security Council.

- The current situation however is different given that India shares strategic relations with the U.S. led west and also there is public condemnation of unconditional support of Pakistan vis-à-vis India in these countries. Notably Russia has been growing close to Pakistan, with the sale of weapon systems and bilateral military exercises.

Flawed defence supply argument:

- Though India continues to rely on the Russians for defence equipment and their spare parts, at the same time there has been the emergence of a global market for arms. So India could as well source such equipment or spare parts from the global market if Russia decides to block arms and spare supplies to India.

- Notably India too has been diversifying its defence imports with new agreements with U.S., Israel, France, Sweden etc. This offers India a great degree of independence from excessive dependency on Russia.

Conclusion:

- India being a democracy cannot look away from the violation of widely accepted norms contained in the unprovoked invasion of Ukraine for fear of losing access to its supply of armaments or of reciprocal support in the UN on matters of concern to it.

- Instead India must take a long view of how it wants to engage with the world and deal with such situations. Sticking to the time tested principles and norms of international relations is not just in India's national interest, it is also its own reward.

> *Nut Graf*
>
> *India's stand on the Russia- Ukraine issue aims to accord top priority to India's immediate national interests. However there is also the need to look beyond them to take a long term view of the issue.*

Effect of Policies and Politics of Developed and Developing Countries on India's interests, Indian Diaspora.

3. 'Bharat Natyam' in Indian diplomacy

- » Mains: Challenges for India in the international relations domain in the early 1990's; India's diplomatic moves during the period and its results.

Important diplomatic moves of India in the early 1990's:

- India's foreign policy challenge in the early 1990s was as profound as the economic crisis that India faced during the same period.

- The disintegration of the Union of Soviet Socialist Republics (USSR) into 15 republics in 1991 marked a major change in global international relations and more so for India which had a reliable ally in USSR. The end of the Cold War and the world order becoming unipolar forced Indian policymakers to adapt to the changed global political and economic realities.

- Indian policymakers were forced to reshape India foreign policy and national security strategy.

  - * Recognising that India would need the support of the West and especially the US the then administration laid the foundations for a revival of US-India ties acknowledging the importance of the US in the global strategic architecture. The leadership of the two countries decided to have frank exchanges on issues that had divided them

during the Cold War including issues like 'nuclear proliferation and disarmament'.

- * This was done even as India maintained its traditional ties with Russia. India opened new embassies to build new relationships with the erstwhile Soviet Union states.

- * In the Middle East, India shed its reluctance and moved forward to take unprecedented initiatives. India established full diplomatic ties with Israel in 1992 announcing the opening of embassies and exchanging Ambassadors for the first time, even as it reached out to Iran.

- * Recognizing the pattern of shifting of centre of gravity of global economics to East Asia and also realizing the potential of linking India's economic future to the booming economies in East Asia, India under its 'Look East' policy worked towards expanding its engagements with the Association of Southeast Asian Nations (ASEAN). Notably apart from being critical to India's economic revival aspirations the move was also a subtle attempt to counterweight rising Chinese dominance in the region.

  - » In 1992 India and ASEAN embarked on a sectoral-dialogue partnership which became a full dialogue partnership by 1995.

- * In 1993, India and China initiated the first of many confidence-building-measures, notably the Agreement on the Maintenance of Peace and Tranquillity along the Line of Actual Control in the India-China Border Areas. Simultaneously, India and Taiwan deepened their economic and cultural ties.

Dixit principles and its relevance:

- India's diplomatic moves of the early 1990's gives an idea of how India was responding to the changes taking place around it in the wider world even as it sought to secure its own national interests. The author of the article, Rakesh Sood terms this approach to international relations as the Dixit principles in honour of the then Foreign Secretary, Jyotindra Nath Dixit.

- These principles helped India effectively navigate the turbulent times of 1990's and also set the course for successful Indian foreign policy going ahead. The decisions of those times have continued to shape India's international relations over the last two decades.

  - * The India and Israel relationship has blossomed into one of India's most significant strategic partnerships in the last three decades.

* The India U.S. relationship revived in early 1990's led to the path-breaking India-U.S. Civil Nuclear Cooperation Agreement in 2008.

* In 1996, India joined the security dialogue platform, the ASEAN Regional Forum. Since 2002, the relationship has strengthened further with the annual India-ASEAN summit.

- The approach of the early 1990s is everywhere in Indian foreign policy today: Moving away from non-alignment to issue-based alignments; Delhi's subtle balancing act in the Middle East; trying to establish a stable balance with China; more robust defence diplomacy in key global geographies; the outreach to East and Southeast Asia as part of India's 'Look East' and 'Act East' policies.

- The approach has transformed the way India engaged with the world and contributed to India's rise in the global inter-state hierarchy.

Relevance to the present times:

- The Dixit principle and the approach it recommends would be very useful for India under the present circumstances too amid the turmoil caused by the Russia- Ukraine crisis in international relations.

- India's neutral stand on the Ukraine conflict and its abstention from the votes in the UN Security Council and General Assembly are based on an assessment of India's core national interests and also an attempt to take the middle path which would allow India to create space for diplomatic manoeuvre with the different stakeholders.

> *Nut Graf*
>
> *India is well advised to adopt the Dixit principles while dealing with the challenges brought forth by the ongoing Russia-Ukraine conflict. India should maintain its neutral stand, engaging with all stakeholders to safeguard its own core national interests while also trying to find a peaceful solution to the conflict*

Important International Institutions, agencies and fora-their Structure, Mandate.

4. **Impact of the Russia-Ukraine conflict on international order**

» Mains: Impact of the Russia-Ukraine conflict on the established international order; Economic and geo-political impact of the ongoing crisis on India.

Context:

- The Russian war on Ukraine has reached almost three weeks with no signs of an immediate end.

Impact of the ongoing conflict on global interconnectedness:

- While the devastation caused by the war in terms of loss of lives and property by direct missile strikes and bombing of Ukrainian cities and the Ukrainian refugee crisis it has given rise to are clearly visible and measurable, the article argues that the impact the Ukraine crisis is having on the world order should be equally concerning for the global community.

- The Ukrainian crisis is fragmenting global interconnectedness — in terms of international cooperation, military use, security, economic order, and even cultural ties. In this context, the article discusses the concerns associated with the actions being taken by both sides during the ongoing war.

Ineffectiveness of the UN and Security Council:

- The unfolding events in Ukraine have exposed the ineffectiveness of the United Nations and the Security Council in either avoiding or even being able to end the war.

- The unilateral actions being taken by Russia and the humanitarian crisis it has given rise to in Ukraine run in stark contrast to the spirit of the UN Charter preamble which calls for tolerance and global peace and security.

- Both sides have failed to abide by accepted international principles.

  * Russia which has taken the pretext of security concerns as the reason for its invasion of Ukraine never sought an international mandate on the issue before announcing the invasion. Russia with its permanent member status of the United Nations Security Council has been able to veto all resolutions against it in the UNSC as well as the UN General Assembly.

  * Countries like the United States, the United Kingdom and France too are guilty of failing to strengthen the global order as they have imposed sanctions unilaterally rather than attempting to bring them to the UN. While Russia would have vetoed any such sanctions, it would have been the first step to build confidence in the international order represented by the UN. The flow of weapons to Ukraine is indicative of the UN's ineffectiveness in effecting a truce to the ongoing conflict.

- Analysing the above developments, one can describe the Ukraine crisis as a body blow to the post-World War international order established with the UN.

Overlooking nuclear safeguards:

- Russian military's moves to target areas near Chernobyl and shell buildings near the Zaporizhzhia nuclear power plant (Europe's largest), show utter disregard for nuclear safeguards recommended by the International Atomic Energy Agency.

- This is indicative of Russian recklessness with regard to nuclear safety and is also a major challenge to the global nuclear order.

Use of non-state actors:

- The use of non-state actors in the ongoing conflict by both sides remains a cause of concern.

- The use of armed militia operating in the Donbas regions by Russia and the invitation by the Ukrainian President to foreign fighters to support his armed forces run against the covenants agreed upon during the global war on terrorism.

- The participation of "non-state actors" in a foreign war poses serious security concerns in the longer run.

Impact of the economic actions on global financial order:

- Economic sanctions against Russia includes it's eviction from SWIFT payments, cancellation of Mastercard, Visa, American Express and Paypal payment systems within Russia, sanctioning of specific Russian businesses and oligarchs and asking the Western businesses operating in Russia to shut down.

- The arbitrary and unilateral nature of western sanctions run against the mandate and spirit of the international financial order set up under the World Trade Organization.

- Economic sanctions by the U.S., the U.K. and the European Union against Russia aiming to cut out Russia from all monetary and financial systems in all probability will lead to the fragmentation of the global financial order. Russia will continue to explore alternative trading arrangements and gradually, the world may see a "non-dollar" system emerge which would run banking, fintech and credit systems separately from the "dollar world". This could usher in an era of deglobalization

Cultural isolation:

- The sanctions like EU's banning of all Russian-owned, Russian-controlled or Russian-registered planes from EU airspace, banning of Russian channels in Europe and the cancellation of art and music performances will lead to the social and cultural isolation of Russian citizens. This goes against the global liberal order.

- The comprehensive boycott of Russia is not in the long term interest of not only the regional peace and security but also global peace. The "Iron curtain" between Soviet Russia and Western Europe led the world suffer the consequences of the Cold War for decades.

Impacts of the ongoing crisis on India:

- The geopolitical tensions has led to the sustained rise in oil and food prices. This is likely to aggravate inflationary pressures, and a Nomura report suggests that in Asia, India is likely to be among the worst losers as a result of this conflict.

- The conflict is likely to have an adverse impact on India's economy, manifested through higher inflation, weaker current account and fiscal balances, and a squeeze on economic growth. The ongoing conflict between Russia and Ukraine has sent global markets into a frenzy. This will no doubt affect India's economic recovery from the impact of Covid-19 pandemic.

- India's refusal to criticise Russia's actions, and the abstentions at the United Nations, could affect its relations with the West and its Quad partners (the United States, Australia and Japan).

- The unprecedented economic sanctions of the U.S. and the European Union will have economic costs on Indian trade and defence purchases.

Way forward:

- All countries have to take necessary steps to uphold, strengthen and reinvent the global order to make the world a safer place.

> *Nut Graf*
>
> *The ongoing Russia- Ukraine crisis and the actions being taken by both sides have led to the fragmentation of the international order established with the UN, ushering in an era of deglobalization and bringing down another Iron Curtain and the risks that such isolation brings with it. This is a cause for worry for the post-World War order.*

Important International Institutions, agencies and fora-their Structure, Mandate.

5. **In sanctions route, what the world must take note of**

   » Prelims: World Trade Organization; Most Favoured Nation status

   » Mains: Impact of the Russia-Ukraine conflict on the established international order

Background:

- The United States, Canada, and the European Union (EU) are using economic sanctions against Russia for its military action against Ukraine. Trade restriction has been one of the main avenues for the economic sanctions against Russia.

- Canada has suspended the most favoured nation (MFN) treatment to Russia. The EU and the U.S. are also contemplating similar moves.

Concerns:

- While the Russian action against Ukraine amount to violation of established international law, UN Charter spirit and fundamental principles of international peace and security, the article expresses concerns over the methods adopted by the other countries to curtail Russia's aggression.

Limited applicability of Article XXI:

- Notably, the World Trade Organization, the body which polices the international law on multilateral trade does allow its member countries to take actions (imposing trade sanctions, suspending MFN status) against any other member for breaching international law obligations on peace and security. This is regulated by Article XXI of the General Agreement on Tariffs and Trade (GATT).

  * Article XXI empowers a member country to adopt measures "which it considers" necessary for the protection of its essential security interests (ESI) taken in time of "war" or other "emergency in international relations".

- While article XXI can be used by Canada to justify its deviating from the MFN rule it cannot be employed to judge whether Russia has breached international law on peace and security. Such interpretation has been previously upheld by a 2019 WTO panel in the 'Russia – Measures Concerning Traffic in Transit' case as well. In this case the WTO panel had refused to characterise the Russian invasion of Crimea as a violation of international law in general.

- So even if it is judicially established that the Russian invasion of Ukraine is a breach of international law, that alone will not be sufficient to impose trade sanctions against Russia as per the WTO law unless countries make a clear case under Article XXI.

Adopting methods not based in international law:

- The route adopted by the western powers to respond to Russia's invasion of Ukraine are also not rooted in international law

- Countering Russian aggression and illegality with measures not ingrained in international law amounts to reprisal. This could lead to wrong precedents wherein countries overlook established rule-based international order and start taking laws into their own hands. This will only further undermine the international order which is so very critical for international peace, security and development.

- The countries that want Russia to respect the rule-based order should follow it themselves first.

Nut Graf

While international action against Russia's unilateral military action against Ukraine is needed, such actions should themselves be ingrained in established international law. If not they risk undermining the established international order so very important for international peace, security and development.

Important International institutions, agencies and fora-their structure, mandate.

6. **Mission creep: on NATO expansionism**

  » Prelims: NATO

  » Mains: Expansion of NATO and Russia-Ukraine Crisis

Context:

- The act of eastward expansion of the North Atlantic Treaty Organization (NATO) threatened Russia to allow Ukraine to join the grouping as a treaty ally and thus bring a formidable transatlantic security coalition. This was the main reason behind Russia launching a military invasion of Ukraine.

What are the origins of NATO and why does it matter to Russia?

- NATO - the North Atlantic Treaty Organization - is a military alliance formed in 1949 by 12 countries, including the US, Canada, the UK and France.

- Members agree to come to one another's aid in the event of an armed attack against any one member state.

- Its aim was originally to counter the threat of post-war Russian expansion in Europe.

- In 1955 Soviet Russia responded to NATO by creating its own military alliance of eastern European communist countries, called the Warsaw Pact.

- Following the collapse of the Soviet Union in 1991, a number of former Warsaw Pact countries switched sides and became NATO members. The alliance now has 30 members.

Mission of NATO:

- deterring Soviet expansionism,

- forbidding the revival of nationalist militarism in Europe through a strong North American presence on the continent,

- Encouraging European political integration.

What were the rounds of expansions carried out by NATO?

- During the term in office of U.S. President Bill Clinton, NATO began to pull former Warsaw Pact states into its membership.

- After reunification, while Germany retained membership of NATO, the Czech Republic, Hungary, and Poland joined the alliance in 1999.

- But it did not end there — in 2004, Bulgaria, Estonia, Latvia, Lithuania, Romania, Slovakia, Slovenia joined the treaty organisation.

- In 2009 Albania and Croatia signed on, in 2017 Montenegro entered the bloc and in 2020 it was North Macedonia's turn.

Why is Russia sensitive to NATO expansion?

- In 2008, NATO Allies welcomed Ukraine's and Georgia's Euro-Atlantic aspirations for membership and agreed that these countries will become members of NATO."

- They went on to announce a period of intensive engagement with both countries at a high political level to address the questions still outstanding regarding their Membership.

- This development prompted Russia to warn the U.S. that "no Russian leader could stand idly by in the face of steps toward NATO membership for Ukraine. That would be a hostile act toward Russia."

- This was only among the more recent of a long list of actions by NATO leaders that Russia considers a political betrayal.

Nato's expansion since 1997

Joined Nato before 1997
Joined Nato since 1997

RUSSIA
BELARUS
UKRAINE
Crimea*
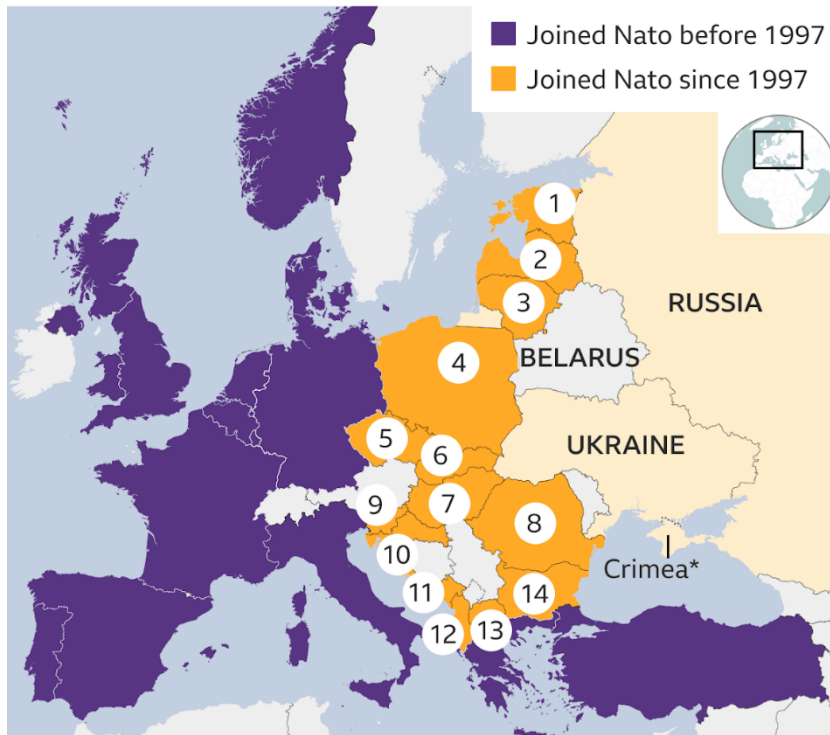
1 Estonia   5 Czech Republic   9 Slovenia   13 North Macedonia
2 Latvia   6 Slovakia   10 Croatia   14 Bulgaria
3 Lithuania   7 Hungary   11 Montenegro
4 Poland   8 Romania   12 Albania

*Russia annexed Crimea in 2014

Source : BBC

BBC

Did NATO violate a promise to avoid expansion?

- In 1990, NATO agreed that "there would be no extension of NATO's jurisdiction for forces of NATO one inch to the east."

- Russia seized upon this comment to fuel its ostensible outrage at NATO expansion into the Baltic states region.

- But in early 1990, the locus of the diplomacy for the Two plus Four – including East and West Germany plus the United States, France, the Soviet Union, and the United Kingdom – agreement was whether a unified Germany would be part of NATO.

- In the aftermath of the Soviet Union's dissolution, there was a failure to institutionalize democratic practices, a stable market economy, and a robust law and order system.

- Through the 2000s, Russia carried on in this vein, speaking with increasing alarm and anger at NATO's steady expansion into Eastern Europe.

- In 2007 Russia claimed that NATO expansion does not have any relation with the modernisation of the alliance itself or with ensuring security in Europe.

- In 2008, following NATO's announcement of its intent to admit Georgia and Ukraine into its alliance, Russia invaded Georgia and took control of several of its territorial regions.

- In 2014, with Ukraine drifting closer towards an economic alliance with the European Union, Russia marched into Ukraine and seized Crimea.

> ### Nut Graf
>
> *Understanding the history of NATO's challenge to the security posture of Russia would help identify the roots of the Russia-Ukraine conflict. It might also provide a clearer picture of what institutional arrangements and assurances the Kremlin could accept as sufficient to pull back its troops and weaponry and engage in dialogue with Ukraine.*

Effect of Policies and Politics of Developed and Developing Countries on India's Interests

7. Ukraine peace plan

  » Mains: Major elements of a sustainable peace plan for ending the Russia-Ukraine conflict

- Following would be the major elements of a viable peace plan for the ongoing Russia-Ukraine conflict.

Addressing security demands of Russia:

- Given the fact that Russia has already taken a high-risk enterprise of launching a military invasion on Ukraine, it is highly unlikely that it would pull back and end the conflict without tangible gains. In this direction the article calls for meeting some of the major security demands of Russia.

- The first basic requirement for peace would be a declaration of formal, binding neutrality for Ukraine like the ones observed in the case of Finland and Austria which have embedded the principle of neutrality in their Constitutions. This would indicate a formal policy of not having or even pursuing a military relationship with NATO. This neutrality should also be guaranteed by other powers.

- While declaration of neutrality would be the first step in the direction of de-escalation, Russia is also likely to demand restrictions on weapons Ukraine could station on its soil, their power and range aiming to restrict the threat posed by them to Russia.

- As an additional security measure, Russia could also be allowed to ensure its de facto control over the Donbas region comprising the Luhansk and Donetsk provinces by letting it allow for the stationing of its peacekeepers. This would give Russia the buffer zone it seeks.

    * Notably, just before Russia invaded Ukraine it officially recognised the independence of the two separatist provinces of Luhansk and Donetsk in Ukraine's eastern Donbas region.

- Given that a comprehensive peace settlement is necessary to achieve long term peace and security in the region, the peace settlement would probably have to consider the possibility of formal international recognition of Russia's 2014 annexation of the Crimean peninsula.

Maintaining pressure on Russia:

- Notably Russia is suffering greater battlefield losses than it anticipated, and making much slower progress than most experts had predicted when the invasion began. Also Russia is having to pay a huge price economically, geo politically and diplomatically, due to the sanctions regime imposed on it, for its military attack on Ukraine.

- This aspect has to be considered to make Russia cede some concessions during the negotiations of a peace settlement.

Maintaining the sovereignty of Ukraine:

- While at the outset the meeting of the previously discussed security demands of Russia may appear against the sovereignty of Ukraine, and there are doubts on whether the Ukranian leadership would agree to such demands, Ukraine may as well agree just to stop the suffering and destruction.

- It is likely that Ukraine would only accept formal neutrality provided there were assurances for aid, if it were to be attacked again in future. Given that U.S. involvement in this respect is unlikely

to be accepted by Russia, this sort of security guarantee could come from the United Nations.

- Additionally, while Ukraine may give up its push for a NATO membership, it would want to join the European Union (EU). Notably, Russia has so far said no to Ukrainian adhesion to the EU as well, but if peace is in the interests of both sides, this could be the one issue on which Russia would have to concede.

  * Notably, Austria, Finland and Sweden have stayed neutral while serving as flourishing members of the EU.

Conclusion:

- A viable peace plan is possible and the United Nations led by the Secretary-General need to pursue it.

- In this situation one needs to reminisce the role played by U Thant (Third secretary-general of the United Nations from 1961 to 1971) in de-escalating the tensions between Russia and the U.S. during the Cuban Missile Crisis in 1962.

> **Nut Graf**
>
> *A viable peace plan for the ongoing Russia-Ukraine conflict would need to address the security demands of Russia while trying to retain sovereignty of Ukraine to the maximum extent possible. Tactful diplomacy led by the United Nations should work towards a sustainable peace plan to end the conflict which is not only having regional but also global ramifications.*

India and its Neighbourhood - Relations

8. Bangladesh, India, Nepal to move ahead on MVA pact

» Prelims: Motor vehicles agreement- provisions

» Mains: Initiatives being taken by India to foster greater sub-regional co-operation

Context:

- Meeting between the officials from India, Bangladesh and Nepal regarding the Motor Vehicles Agreement (MVA) of the sub-regional Bangladesh-Bhutan-India-Nepal (BBIN) grouping.

BBIN Motor Vehicles Agreement:

- The BBIN Motor Vehicles Agreement (MVA) was signed in 2015 at the BBIN transport ministers meeting in Thimpu, Bhutan to ensure free flow of goods and people between them.

  * The agreement would permit the member states to ply their vehicles in each other's territory for transportation of cargo and passengers. Cargo vehicles will be able to enter any of the four nations without the need for trans-shipment of goods from one country's truck to another's at the border.

  * Notably, each vehicle would require an electronic permit to enter another country's territory, and border security arrangement between nations' borders would also remain.

- Though the original BBIN MVA was signed by all four countries, but after objections in Bhutan over sustainability and environmental concerns, the Bhutanese Parliament decided not to endorse the plan.

- Progress on the project has been slow, despite several trial runs being held.

Details:

- The BBIN meeting was the first such in-person meeting since February 2020 to discuss the MVA since the COVID-19 pandemic outbreak.

- The meeting discussed the steps to be taken in operationalising the agreement. The officials finalised the wording of two separate protocols on passenger and cargo movement with an "enabling" agreement.

- Notably, Bhutan continues to sit out of the Motor Vehicles Agreement.

> **Nut Graf**
>
> *The Motor Vehicles Agreement of the sub-regional Bangladesh-Bhutan-India-Nepal grouping would help realise the full potential of trade and people to people connectivity between the BBIN countries by fostering greater sub-regional cooperation.*

Bilateral, Regional and Global Groupings and Agreements involving India and/or affecting India's interests.

9. Colombo Security Conclave

» Prelims: Colombo Security Conclave

» Mains: Significance of the Colombo Security Conclave for India and the region

Context

- Fifth National Security Advisor-level talks of the Colombo Security Conclave held recently in Maldives.

Colombo Security Conclave:

- The Colombo Security Conclave is a regional security grouping.

- It was initially formed in 2011 as a trilateral Indian Ocean maritime security grouping of India, Sri Lanka and the Maldives. It was revived again in 2021.

- The Colombo Security Conclave has since

expanded both its membership as well as scope.

* Colombo Security Conclave envisages sharing intelligence and collaborating on the security aspects of marine security, human trafficking, counter terrorism, and cyber security.

* The fifth addition saw the induction of Mauritius as a new member and the scope of the conclave has been expanded to include humanitarian assistance and disaster relief too.

Details:

- At the fifth conclave, India, Sri Lanka, Maldives and Mauritius discussed ways to combat maritime challenges. Apart from the maritime security aspects, the NSAs also discussed countering narcotics trafficking and transnational organised crime and cyber security and emerging technologies.

- The participating countries agreed on a roadmap to bolster cooperation. They identified key areas of cooperation to enhance and strengthen regional security based on five pillars.

- The roadmap will facilitate robust mechanisms for coordinated responses capacity building and strengthening information flow between member states.

- Notably, delegations from Bangladesh and Seychelles participated as observers in the meeting raising the prospects of adding more member countries in the future meetings.

Indian NSA's address:

- The Indian NSA highlighted India's contribution as the first responder in the region in crisis situations and noted the co-operation and collaboration among the member countries in tackling narcotics trafficking, organised crimes and mitigating threats posed by maritime accidents.

- Noting the fact that India's national security is deeply intertwined with the collective security aspirations of the region, the Indian Security Adviser reiterated India's commitment to working in close co-operation with its maritime neighbours in the form of building capacity through training, supply of equipment, upgrading coastal security installations, and exchange of information.

- The Indian NSA called for the institutionalisation of the Colombo Security Conclave through follow up meeting of the heads of the Coast Guards of the four member countries and the formation of joint working groups to tackle drug trafficking and transnational organised crimes.

India's interests:

- Given India's location in the Indian Ocean, maritime security remains a major security aspect for India. Closer co-operation among regional partners will aid India's efforts to ensure security and stability in the region.

- The Colombo Security Conclave being a mainly India driven "minilateral", it is being seen as India's outreach to the Indian Ocean to underline regional co-operation and shared security objectives. In this way, India through CSC hopes to restrict China's influence in an area of strategic importance, and to reduce the Chinese footprint in the member countries, including the new and proposed additions.

> ### *Nut Graf*
>
> *The Colombo Security Conclave is a welcome initiative to enable regional co-operation in the critical realm of maritime security and also offers India an opportunity to reach out to the neighbours in the Indian Ocean region in a bid to maintain its strategic standing in this important region.*

Effect of Policies and Politics of Developed and Developing Countries

10. Pakistan's neutrality, Taliban's worry

» Mains: Changes in Pakistan's foreign policy and how this would impact the Taliban regime in Afghanistan and Pakistani interests.

Background:

Systemic changes in Pakistan's foreign policy:

- The Pakistani Prime Minister's recent visit to Moscow and the holding of a three-hour-long meeting with Russian President despite Russia's announcement of an invasion of Ukraine came across as Pakistan implicitly endorsing Russia's military action.

- Also given the increasing engagement between Russia and Pakistan seems to indicate a break in the traditional alignment of Pakistan with the U.S. and a turn towards Russia.

- Pakistan seems to be gradually drifting toward a new strategic alignment with Russia and China.

Impact of the new developments:

On Afghanistan:

- Given that the Taliban regime in Kabul shares a strategic multidimensional relationship with Pakistan, the changes in Pakistani foreign policy relation will also affect the Afghan Taliban.

  * Pakistan remains the main foreign backer for the Afghan Taliban and is supporting its campaign for international recognition.

- The deepening distrust between U.S. and Pakistan and the well-established inks between the Taliban and Pakistani Inter-Services Intelligence (ISI) will only dampen the Afghan Taliban's chances of getting immediate international recognition. Taliban's rehabilitation in the international system will become harder.

- It will also become difficult for the Afghan Taliban to negotiate the reversal of economic sanctions imposed by the U.S.

- The shifting of global focus away from Afghanistan onto the refugee crisis induced by Russia-Ukraine conflict will only make it difficult for the Afghan Taliban to mobilize aid to help Afghanistan overcome its economic and financial challenges which have created a humanitarian crisis.

On Pakistan:

- Pakistan's increasing closeness to Russia will only further deepen the distrust between the U.S. and Pakistan.

- It will become difficult for the Pakistani establishment to mobilize aid from the Western countries, for Afghan refugee living in Pakistan. This will only further exacerbate Pakistan's own set of economic problems under pressure from the Financial Action Task Force.

  * Pakistan hosts around 1.5 million Afghan refugees.

- The existence of internationally unrecognized Taliban regime in its neighbourhood would have negative implications for Pakistan's image in the global order.

- Also it compounds the threat of domestic terrorism in Pakistan. The ISIS-Khorasan recently claimed responsibility for the suicide terror attack in Peshawar, the capital of the Khyber-Pakhtunkhwa province bordering Afghanistan.

- Some experts also point to the possibility of the Taliban regime demanding more autonomy from Pakistan in dealing with the outside world. This could reduce Pakistan's overall influence on the foreign policy direction of Afghanistan.

> *Nut Graf*
>
> *The move by Pakistan towards a new strategic alignment with Russia and China will have a marked impact on the Afghan Taliban regime given the relationship between Afghan Taliban and Pakistani Inter-Services Intelligence (ISI).*

India and its Neighbourhood - Relations.

11. The peculiar case of Ladakh's eastern boundary

» Mains: Long term solutions to India-China border stand-off in eastern Ladakh

Context:

- Chinese Foreign Minister is in India and is expected to meet Indian External Affairs Minister and National Security Adviser. This would be the first high-level Chinese official visit since the June 2020 clash between the armies of the two sides in a disputed section of the western Himalayas.

- The visit is being seen as an attempt by China to reach out to India in the midst of the military standoff in Ladakh, to revive bilateral dialogue and set the stage for the BRICS summit in China later this year.

Details:

- One needs to analyse the treaties, customary territorial limits to help find a realistic solution for the border stand-off between India and China in eastern Ladakh region.

Territorial limits of erstwhile Ladakh region:

- Given that Leh has been a hub of trade since ancient times, traditionally, the boundaries of Ladakh have been defined by the trade routes via the Karakoram pass to the north, Demchok to the south and Zojila to the west. Hence the customary boundary was defined only for the limited area under human occupation.

- The uninhabited soda plains to the east extending over 100 square miles, now disputed between India and China, were of no use and not governed by anyone.

- Also there has never been a defined boundary in eastern Ladakh region because high watershed frameworks cannot be applied in these terrains characterized by the parallel ranges of Ladakh.

Treaties:

- The Treaty of Timosgang between Ladakh and Tibet in 1684 helped Ladakh emerge as a distinct entity. This treaty established relations between Leh and Lhasa.

- With the Treaty of Chushul in 1842, Ladakh and Tibet agreed to maintain the status quo with respect to territorial administration.

- The Treaty of Amritsar in 1846 between the East India Company and the State of Kashmir included Ladakh with its eastern boundary undefined. Under the British rule the focus remained only on the northern boundary of Ladakh because of the Russian advance into Central Asia.

Official documents of British era:

- The 'Gazetteer of Kashmir and Ladak', brought out in 1890, noted doubtful the boundary demarcation between Ladakh and Tibet. The unoccupied Aksai Chin was described as "neutral territory".

Recommendations:

- There is considerable ambiguity in defining the border and we should take care that this ambiguity does not lead to disputes due to unrealistic stands by either sides as observed in the events leading to the 1962 Indo-Chinese war.

  * India and China extended overlapping sovereignty in the uninhabited area in Ladakh over which neither had ever exercised control.

- The two countries should move away from establishing their respective claims to recognising the ground reality. The adopting of the watershed principle as adopted in the case of demarcating the border of all other Himalayan States seems the best way forward to decide on a mutually agreeable boundary. This would meet the national security concerns of India and China without bringing in the issues of sovereignty.

  * Notably, even Indian diplomats and Army officers have characterised the Karakoram watershed as a defensible border, to which the Chinese claim line broadly corresponds, leaving the area where earlier no one exercised control, Aksai Chin, to China. However this suggestion has been ignored at the political level.

- In this direction, there is the need to mould a new domestic consensus on this issue to help find the most favourable line in eastern Ladakh. For this to fructify, continued dialogue between the two sides should continue despite any sporadic military incidents.

> *Nut Graf:*
>
> *There has been ambiguity in defining the border in eastern Ladakh even since ancient times. Given that these ambiguities have led to disputes and military stand-offs between India and China, there is the need to find a permanent solution to this issue. The adopting of the watershed principle to decide on a mutually agreeable boundary seems the best way forward for both countries.*

Effect of Policies and Politics of Developed and Developing Countries on India's Interests, Indian Diaspora.

12. **The JCPOA continues to be elusive**

  » Prelims: Joint Comprehensive Plan of Action

  » Mains: Concerns associated with the delay in finalizing of the Iran Nuclear deal

Context:

- The Vienna talks aimed at reviving the Joint Comprehensive Plan of Action (JCPOA), also known as the Iran nuclear deal, have slowed down given the new Russian demand seeking written guarantees that the economic sanctions imposed on Russia for its attack on Ukraine will not in any way harm its future trade and defence ties with Iran

Factors delaying the finalization of the agreement:

Russian demands:

- Russia has sought written guarantees from the U.S. that the economic sanctions imposed on it for its attack on Ukraine would not affect its role under the JCPOA or will not in any way harm its future trade and defence ties with Iran.

  * Russia, an original signatory of the JCPOA, is a member of the joint commission that supervises Iran's compliance with the provisions of the deal.

  * Russia would help Iran to downgrade its Fordow enrichment plant into an isotope manufacturing centre to be utilised for medicinal purposes.

- Western commentators claim the Russians are deliberately trying to delay the finalisation of the agreement to thwart the U.S. attempts to relax sanctions on Iranian oil exports which would help in turn tame the soaring crude oil prices.

- Also, Iran and China would not be ready to go ahead with the deal without Russia given that Iran treats Russia as one of its allies.

- This leaves the future of the nuclear deal in Russian hands.

Iran's demands and U.S. domestic politics:

- Iran has been insisting on the removal of all sanctions imposed on it during the previous Donald Trump administration, including the removal of the Islamic Revolutionary Guard Corps (IRGC) as a U.S.-designated Foreign Terrorist Organisation (FTO).

- Given the deepening polarization in U.S. and the stark political compulsions the U.S. President would find it hard to agree to this demand.

Concerns over the delay:

Deepen security crisis in West Asia:

- As per available reports, after the unilateral U.S. withdrawal from the 2015 nuclear deal, Iran started enriching uranium to a higher purity. Now, nuclear experts believe Iran is just months away from having enough high purity uranium to make a nuclear bomb. This adversely impacts the security situation in West Asia.

- The growing nuclear capability of Iran and the delay in concluding a new deal to curb its nuclear programme threatens to deepen the security crisis in West Asia.

Global oil prices:

- Removing sanctions on Iran and letting Iran's oil enter the global market could help ease oil and gas prices, which shot up after the Russian attack on Ukraine.

- The delay in finalizing this agreement could inflate global oil prices.

Recommendations:

- The negotiating countries should continue to push for a collective agreement.

> *Nut Graf:*
>
> *The delay or a total collapse of the Iran deal would not only deepen the security crisis in West Asia but also add pressure on global oil and gas prices.*

13. India-Australia summit meeting

» Mains: Significance of India-Australia Ties

Context:

- Prime Ministers of India and Australia held a virtual summit and discussed their commitment towards strengthening bilateral ties.

Significant Takeaways from the summit:

- **Strengthening Cultural ties:** Australia recognises the depth and diversity of India's magnificent culture. Australia returns 29 ancient Indian artefacts consisting of sculptures and paintings executed in a variety of materials.

- **Energy:** India-Australia is working on a new and renewable energy partnership, to support the development of technologies such as green hydrogen and ultra-low cost solar.

- **Technology and research:** The virtual summit will boost collaboration on innovation, science and entrepreneurship, to scale up ideas that address global challenges. A Australia-India Center of Excellence for Critical and Emerging Technology Policy will be established in Bengaluru.

- **Strengthening QUAD:** Quad has become an important multilateral forum to strengthen cooperation on issues of mutual interests. There is also a good collaboration going on between us in Quad.

- **Minerals & Investments** A MoU was signed on cooperation in the critical mining sector that would establish a framework for building partnerships in critical investment. This would enable India to get both investment and expertise in this area.

- **Boosting Bilateral Dialogue:** The cooperation between the two countries has also been carried forward at the ministerial level, with the 2+2 Foreign and Defence Ministerial Dialogue.

- **Skill Development:** Australia will be investing in India's talented young people through our new Future Skills Initiative between education and training providers and industry.

- **Education:** Australian government's significant new Maitri scholarships and fellowships will give Indian students and researchers the chance to experience Australia's world class education system.

- **Stable Indo-Pacific:** Australia and India are also working to ensure a peaceful and stable Indo-Pacific region. They are advancing cooperation all the way from the Indian Ocean to the Pacific Islands.

- **Defence:** Both sides announced the setting up of the general Vipin Rawat young defense officers exchange program which would enable younger officers from both sides to familiarize themselves with each other's countries and will greatly increase the service to service contacts.

> *Nut Graf:*
>
> *The India-Australia Virtual Summit marked a milestone as both the counties announced a range of tangible and practical initiatives spanning the breadth of our shared economic, strategic, and regional interests. For the bilateral relationship to grow further, there is a need to address the friction points and challenges as well.*
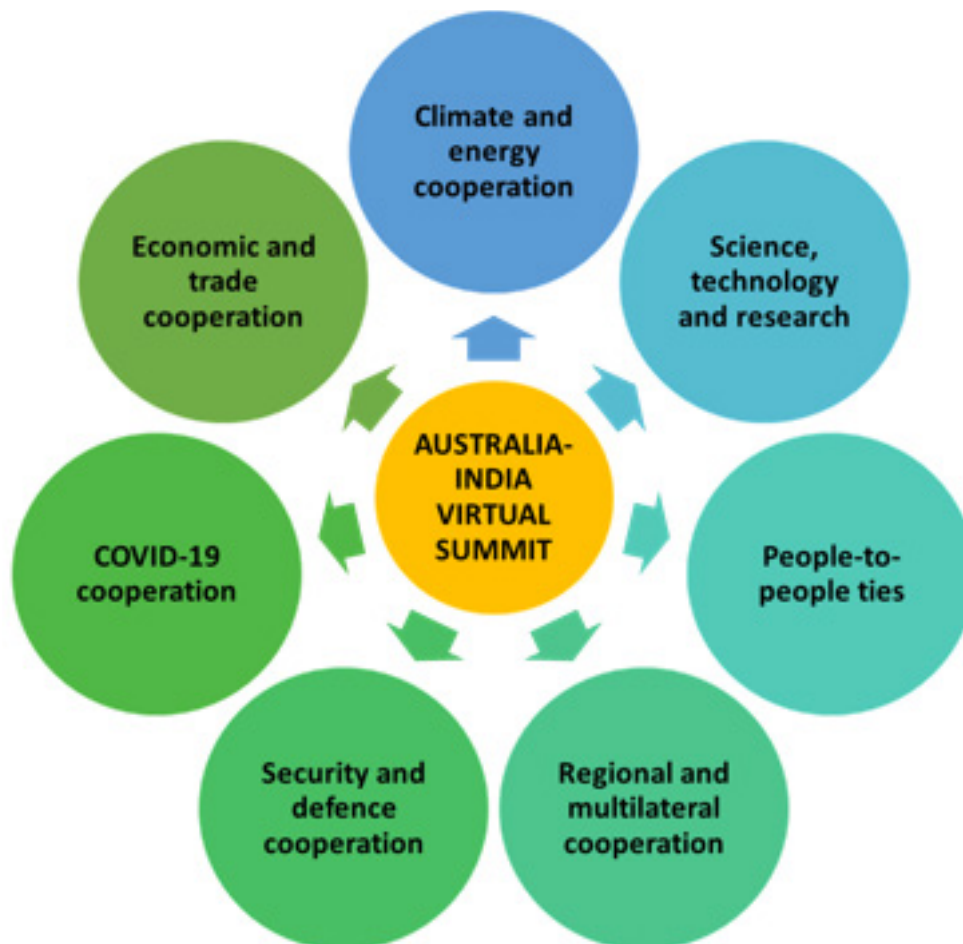
Challenges

- **Changing dynamic of Indo-Pacific amidst Ukraine Crisis:** India-Australia have concerns with increasing change in the Indo-Pacific region in the wake of Russia's aggression in Ukraine.

- **Conflict over stand on Russia:** Australia blamed Russia and held her accountable for the tragic loss of lives in Ukraine following its "terrible" invasion of that country. Whereas India has not taken any solid stand against Russia.

- **Increasing Chinese aggression:** China's aggressive posture in the region in indo-pacific is another cause of concern. The two countries share concerns about the implications of the rise of China and the stability of the region.

Bilateral, Regional and Global Groupings and Agreements involving India and/or affecting India's interests.

14. Shifting sands

» Prelims: Negev summit; Abraham accords

» Mains: Shift in West Asian geopolitics and factors contributing to this change.

Context:

- The Negev summit between the foreign ministers of Egypt, the United Arab Emirates (UAE), Bahrain, Morocco, Israel and the United States recently took place in southern Israel. The participating countries discussed security partnership, Iran and other related issues.

- The Negev summit signals a decisive shift in West Asian geopolitics.

Changed dynamics of West Asian geopolitics:

- Israel has strengthened its relationship with major Arab countries like Egypt and UAE in the recent past, post the Abraham Accords in 2020.

- The countries have stepped up their economic and security cooperation ever since.

- Israeli Prime Minister visited both Egypt and Abu Dhabi in a first for Israel-Arab relations.

- Arab-Israeli relations have gained a new dimension in recent times with Israel proposing a "Middle East defensive envelope" featuring Israel's advanced missile defence systems during the ongoing Negev summit.

Factors contributing to this changed dynamics:

- The new emerging partnership between the erstwhile foes has been the result of regional and global developments.

Shrinking U.S. security umbrella in the region:

- The bedrock of the partnership between the U.S. and its Gulf allies was America's security guarantees in return for the seamless supply of oil. However the U.S. has failed to live upto its security promises in the midst of attacks on Saudi Arabia and UAE by Yemen's Houthis backed by Iran.

- This has forced the regional players with common security interests to come together under a new collective security model

Different perspectives on the Iran nuclear deal:

- While the U.S. sees the revival of the nuclear deal with Iran as the best way to tackle Iran's nuclear ambitions, the Gulf countries and Israel argue that removing the sanctions on Iran would eventually strengthen Iran's standing in the region. This they argue could be used by Iran to not only build its own conventional military capabilities but also would result in Iran stepping up support for its proxies like Hezbollah and the Houthis.

- Given the shared concerns vis-a-vis Iran is pushing the Arab countries closer to Israel.

Recommendations:

- While the emergence of a new collective security model is a natural reaction to the U.S.'s declining security role and the possibility of a stronger Iran, Israel, Arab countries and the U.S. should seek some kind of detente with Iran to ensure lasting peace and security in the region.

> ### Nut Graf:
> The U.S.'s declining security role and the possibility of a stronger Iran with the finalization of the nuclear deal is leading to the emergence of a new collective security model including Israel and the Arab countries.

Bilateral, regional and global groupings and agreements involving India and/or affecting India's interests

15. LAMITIYE

> » Prelims: Facts about LAMITIYE

Context:

- The 9th edition of India-Seychelles Joint Training Exercise LAMITIYE-2022 commenced at the Seychelles Defence Academy

About LAMITIYE:

- It is a joint military exercise between the Indian Army and Seychelles Defence Academy that is conducted biennially.

- This was launched in 2001 to collaborate in the areas of mutual interests in managing the security challenges faced by both the nations in the Indian Ocean region.

- The aim of the exercise is to increase the capability to undertake joint operations in a semi-urban environment along with the facility of a platform for professional and cultural activities.

- It also aims at widening the scope of cooperation for peaceful co-existence in the Indo-Pacific region.

Effect of policies and politics of developed and developing countries on Indian diaspora.

16. Operation Ganga

> » Prelims: About Operation Ganga

Context:

- Operation Ganga has facilitated the safe arrival of many Indian students and Indian nationals to Delhi from Ukraine.

About Operation Ganga:

- It is an operation of the Government of India to bring back Indian students stuck in the conflict-hit region of Ukraine.

- It is a multi-pronged evacuation plan to protect the Indian nationals who are residing in the midst of risk emerging from Ukraine's invasion by Russia.

- The entire cost of evacuation will be borne by the central government.

- Indian missions in Poland, Romania, Slovakia and Hungary have been making arrangements to receive Indian nationals from Ukraine and fly them out of their respective countries under Operation Ganga flights.

- The government also launched an account on social media named OpGanga Helpline to assist the evacuation by sharing instructions and advisories.

India and its neighbourhood-relations

17. SLINEX

» Prelims: About the exercise

Context:

- The Ninth Edition of EXERCISE SLINEX

EXERCISE SLINEX:

- Exercise Slinex is India – Sri Lanka Bilateral Maritime Exercise.

- SLINEX stands for Sri Lanka–India Naval Exercise.

- It aims to enhance interoperability, improve mutual understanding and exchange best practices and procedures for multi-faceted maritime operations between both navies.

- SLINEX is in consonance with India's policy of 'Neighbourhood First' and vision of 'Security and Growth for All in the Region (SAGAR)'.

Bilateral, regional and global groupings and agreements involving India and/or affecting India's interests

18. VARUNA

» Prelims: About VARUNA

» Mains: India-France defence cooperation

Context:

- The 20th edition of the bilateral naval exercise named VARUNA between India and France commenced in the Arabian Sea.

Importance:

- This exercise exemplifies the shared commitment of both countries towards maritime security and safety along with the introduction of a meticulous roadmap to tackle future challenges in the oceanic space.

About Ex VARUNA:

- This naval exercise included ships, submarines, maritime patrol aircraft, fighter aircraft and helicopters of the two navies.

- This exercise witnessed its inception in 1993 and became a crucial part of the India-France strategic bilateral relationship.

- The focus areas include enhancement of operation skills in the maritime theatre, expansion of interoperability to undertake maritime security operations and demonstrating their commitment to promote peace, security and stability in the region in an integrated manner.

- The joint exercise is conducted with the primary goal of progressing the Indo-French coordination on cross-deck operations, replenishment at sea, minesweeping, anti-submarine warfare and information sharing.

Important International Institutions, agencies and fora-their Structure, Mandate.

19. Russia-Ukraine conflict: ICJ's provisional measures on military operations

» Prelims: International Court of Justice and Genocide Convention

Context:

- Ukraine approached the International Court of Justice (ICJ), denying any acts of genocide against the allegations made by Russia.

Background

- Russia has defended its military operation in Ukraine as a retaliation to the act of genocide against the Russian-speaking people in the Donetsk and Luhansk regions.

- In this context, Ukraine approached ICJ (a principal judicial organ of the UN) and requested the court to hold that no acts of genocide defined under the Genocide Convention 1948 have been committed by Ukraine.

  * Ukraine also sought the intervention of the court

- The ICJ ordered Russia to immediately suspend all its military advances in Ukraine.

Genocide Convention 1948

- The Convention on the prohibition of genocide was passed by the General Assembly in 1948 and came into effect in 1951.
- The Article II of the Convention describes genocide as carrying out acts intended "to destroy, in whole or in part, a national, ethnic, racial or religious group".
- Objectives of the Convention:
    * Prevention of genocide as well as the punishment of the crime.
    * Legal obligations on states that are party to the convention include the obligation not to commit genocide

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The Jurisdiction of ICJ

- The Article 36(1) of the Statute of the ICJ mentions that the ICJ will have jurisdiction in all matters relating to the UN Charter, or other treaties or conventions that are in force.
- The Article IX of the Genocide Convention 1948 mentions that the disputes between states relating to the interpretation, application or fulfilment of the Genocide Convention, as well as those relating to the responsibility of a state for genocide shall be submitted to the ICJ at the request of any of the parties to the dispute.

The powers of ICJ to indicate provisional measures

- Article 41 of the Statute of the ICJ, empowers the court to provide provisional measures to protect the rights of the parties involved.
    * The parties to the dispute and the UN Security Council have to be notified of such provisional measures provided by the court.
- In the LaGrand (2001) case between Germany and the U.S. relating to the denial of consular access to a German national in the U.S., the ICJ clarified that such provisional measures are binding in nature and set up international legal obligations.
    * The provisional measures may be provided by the ICJ on the request of a state party or also suo moto.
- Also, in the Tehran Hostages Case (1980) the court ruled that the absence of one of the parties concerned cannot itself be an obstacle to the indication of provisional measures.

- In the recent hearing, the court proceeded to decide the case despite the absence of Russia in the oral proceedings.

Conditions

- In the Gambia v. Myanmar (2020) case (genocide of Rohingyas in Myanmar), the court ruled that it would use the power to provide provisional measures only if it is satisfied that rights which are being asserted by the party which is requesting provisional measures are "at least plausible".
- There should be a link between the provisional measure which has been requested and the plausible right that is to be protected.
- There must be a "real and imminent risk" of "irreparable prejudice" to the rights claimed before the ICJ.
    * The court has held that the loss of human lives, harm to the environment, and the refugee crisis are all instances of irreparable harm.

Relevance in Russia-Ukraine conflict

- The ICJ in the Ukraine case held that Ukraine has a plausible "right of not being subjected to military operations by Russian forces for the purpose of punishing and preventing alleged acts of genocide."
- The ICJ does not have the mechanism to ensure the enforcement of the judgment.
    * However, Article 94(2) under the UN Charter mentions that if a state fails to perform obligations prescribed by ICJ, the UN Security Council (UNSC) can take up necessary actions to give effect to the judgment.
    * This possibility is not viable as Russia has veto power in the UNSC.
- Stalemate in the UNSC empowers the UN General Assembly (UNGA) to recommend measures for the peaceful settlement of the situation
    * In the Nicaragua v U.S. (1984) case, when the U.S. refused to accept the ICJ decision, and the UNSC was deadlocked, the UNGA adopted several resolutions condemning the U.S.'s behaviour.
- Further, the Uniting for Peace Resolution of 1950 by the UNGA during the Korean War, empowered UNGA to take up any matter which threatens international peace and security, and to make relevant recommendations
    * The power of the UNGA to 'recommend measures for peaceful adjustment' has been upheld by the ICJ in many previous instances.

- Russia's absence in the oral proceedings has reflected its disrespect for international law and international institutions.

  * If Russia does not comply with the provisional measures of the ICJ, the reputational harm to its regime will only be compounded.

  * Non-compliance with provisional measures will justify counter actions against Russia.

ART AND CULTURE

Government Schemes

1. **Scheme of Financial Assistance for the Preservation and Development of Cultural Heritage of the Himalayas**

   » Prelims: Scheme details

   • This scheme is implemented by the Ministry of Culture as a financial grant scheme.

   • It is administered specifically for the preservation and development of the cultural heritage of the Himalayan States/Union Territories including the Union Territory of Jammu and Kashmir, the Union Territory of Ladakh, Himachal Pradesh, Uttarakhand, Sikkim and Arunachal Pradesh.

   • Under this scheme, financial assistance is provided to the Voluntary Organizations including Colleges and Universities for study and research on cultural heritage, Preservation of old manuscripts, literature, art & crafts, etc.

   • The scheme is a Central Sector Scheme and no funds are released directly to the State Governments.

   Financial Mechanism of the Scheme:

   • The quantum of funding is Rs.10.00 lakhs per year for an organization.

   • The Expert Advisory Committee (EAC) on the scheme is empowered to recommend the amount beyond the maximum limit but not exceeding Rs.30.00 lakhs from this scheme.
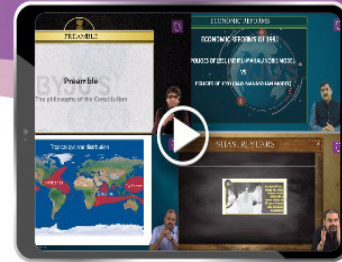
SCIENCE AND TECHNOLOGY

Achievements of Indians in Science & Technology; Indigenization of Technology and Developing New Technology.

1. **Deepak Dhar, John J. Hopfield chosen for Boltzmann medal**

   » Prelims: Boltzmann medal

   Context

   • Deepak Dhar, physicist from the Indian Institute of Science Education and Research, Pune, has been selected for the Boltzmann medal.

   About the Boltzmann medal:

   • The Boltzmann medal is awarded by the Commission on Statistical Physics (C3) of the International Union of Pure and Applied Physics.

   • The award was initiated in 1975, with Nobel laureate (1982) K.G. Wilson was the first recipient.

   • He became the first Indian to win this award.

   • He shares the platform with American scientist John J. Hopfield who is known for his invention of an associative neural network, now named after him.

   • The award consists of the gilded Boltzmann medal with the inscription of Ludwig Boltzmann.

   • The chosen two scientists will be presented the medals at the StatPhys28 conference to be held in Tokyo in August, 2023.

Issues relating to Intellectual Property Rights

2. **A blow to equitable access to essential medicines**

   » Prelims: Compulsory licencing; TRIPS agreement

   » Mains: Concerns with the new proposal on the IPR waiver proposal pending at WTO

   Context:

   • The European Union, India, South Africa and the U.S. have announced recently that a compromise outcome is on the cards on the temporary IPR waiver proposal introduced in the World Trade Organization in October 2020.

   Background:

   Proposal for temporary IPR waiver:

   • In October 2020, amidst the health emergency caused by the rapid spread of the COVID-19 pandemic and the shortages in the availability of affordable vaccines, medicines and other medical products, India and South Africa had tabled a proposal in the World Trade Organization (WTO).

• Noting that the application and enforcement of intellectual property rights (IPRs) were found to be hindering or potentially hindering timely provisioning of affordable medical products to the patients, the proposal sought a temporary waiver for all WTO members on the implementation, application and enforcement of certain provisions of the Trade Related Aspects of Intellectual Property Rights (TRIPS) Agreement in relation to the "prevention, containment or treatment" of COVID-19.

• The proponents argued that such a waiver would help in rapid scaling up of manufacturing globally and thus help ensure timely access to affordable medical products and would thus facilitate an appropriate response to COVID-19.

• The main aspect of their argument for the waiver was based on the fact that when human lives are at stake, relevant medical products should be treated as global public goods.

Lack of progress on the proposal:

• Even after almost 18 months of the proposal, members of the WTO have not been able to finalize the "waiver proposal".

• Despite overwhelming support from developing countries, most advanced countries have opposed the proposal based on concerns over this waiver could have on their pharmaceutical companies.

Details:

• The proposal includes granting compulsory licences to interested companies/countries instead of a blanket IPR waiver.

Compulsory licensing:

• Compulsory licensing is when a government allows someone else to produce a patented product or process without the consent of the patent owner. It is one of the flexibilities in the field of patent protection included in the WTO's agreement on intellectual property — the TRIPS Agreement.

• Article 31 of the TRIPS Agreement lists a number of conditions for issuing compulsory licences.

> * Normally the person or company applying for a licence has to have tried, within a reasonable period of time, to negotiate a voluntary licence with the patent holder on reasonable commercial terms. Only if that fails can a compulsory licence be issued, and - even when a compulsory licence has been issued, the patent owner has to receive adequate payment.
>
> * The scope and duration of the licence must be limited to the purpose for which it was granted, it cannot be given exclusively to licensees (e.g. the patent-holder can continue to produce).
>
> * Article 31(f) provides that the compulsory licences issued by any WTO member must be used "predominantly for the supply of the domestic market".

- The new proposal notes that given the current medical urgency, the condition of having to make efforts to obtain voluntary licences with the patent holders before granting compulsory licences on the patented products would be waived.

- The proposal also provides that WTO members would be able to issue compulsory licences even if they do not currently have the provisions to issue them under their respective national patent laws.
  * India's patent law allows for the grant of compulsory licences if patent holders charge high prices on the proprietary medicines in exercise of their monopoly rights.

- The proposal explicitly mentions that the above provisions could be only used by an "eligible member", defined as a "developing country member" of the WTO that "had exported less than 10 percent of world exports of COVID-19 vaccine doses in 2021". Thus the new proposal has an export restriction clause.
  * India's share in global exports of vaccines stands at around 2.4%.

Concerns with the new proposals:

Exclusion concerns:

- While the proposal removes the export restriction under Article 31(f) of the TRIPS agreement, it still places export restriction in the form of the eligibility criteria mentioned above.

- The eligibility criteria defined in the proposal would lead to the exclusion of least developed countries like Bangladesh, which has a growing pharmaceutical industry

Limited product coverage:

- Also the new proposal is applicable to only vaccines as against the original waiver proposal which sought the inclusion of not only medicines, vaccines, and medical equipment but also the methods and the means of manufacturing the products necessary for the prevention, treatment, or containment of COVID-19.

Increased conditions:

- The new proposal has introduced additional conditions to using the compulsory licences, some of which are well beyond the developing country obligations under the TRIPS Agreement.

- The new solution mandates notification of all patents covered under the compulsory, details of licensee, the quantity and export destination which was not necessary under the TRIPS provisions.

Doubts over efficacy of the solution:

- There are concerns over whether the compulsory licences would result in the desired outcome of helping increase vaccine production. Notably under the compulsory licences framework the transfer of technology is not ensured. This would make it difficult to scale up production of COVID-19 vaccines, medicines, and medical devices in the developing world, thus constraining their availability at affordable prices.
  * Notably only 14% of people in low-income countries have received at least one vaccine dose. The recent surge of COVID-19 infections in countries like China is a strong warning to the global community that the threat from COVID-19 still remains.

> ### Nut Graf
>
> *The compromise outcome being proposed by the E.U. on the temporary IP waiver proposal of India and South Africa at the WTO, suffers from serious lacunae given that it has limited product coverage and since compulsory licensing does not ensure technology transfer there are doubts over its effectiveness in helping increase global vaccine production.*

Awareness in the field of Space

3. **The Artemis programme**
   » Prelims: Artemis Programme

» Mains: The significance of the Artemis programme and its role in NASA's future endeavours.

Context:

- In March 2022, the National Aeronautics and Space Administration (NASA) unfolded its Artemis I moon mission.

Artemis I Programme:

- It is an uncrewed space mission by NASA.

- It is the first of NASA's deep space exploration systems.

- The spacecraft will be launched through a Space Launch System (SLS) rocket, which is the most powerful rocket in the world.

  * The SLS rocket has been designed for space missions beyond low-earth orbit and can carry crew or cargo to the moon and beyond.

- During the mission, the spacecraft will travel around 2,80,000 miles from the earth for over six weeks.

- The spacecraft will consist of an Orion capsule which will remain in space without docking to a space station.

- The exercise aims to collect information and to allow mission controllers to assess the performance of the spacecraft.

Involvement of other space agencies

- Canadian Space Agency - will be providing advanced robotics for the gateway

- European Space Agency - will provide the International Habitat and the ESPRIT module, which will deliver additional communications capabilities among other things.

- Japan Aerospace Exploration Agency - plans to provide habitation components and logistics resupply.

The mechanism of the project

- The SLS rocket and the Orion capsule under the Artemis I mission will be launched from the Kennedy Space Centre in Florida, U.S.

- The spacecraft will deploy the interim cryogenic propulsion stage (ICPS), a liquid oxygen/liquid hydrogen-based propulsion system that will give Orion the thrust needed to leave the earth's orbit and travel towards the moon.

- The Orion capsule will be propelled by a service module provided by the European Space Agency (ESA).

- The spacecraft will communicate with the control centre on Earth via a deep-space network.

- It will fly around 100 km above the surface of the moon and use its gravitational pull to propel Orion into an opposite deep orbit around

70,000 km from the moon, where it will stay for approximately six days.

- Then the Orion will do a close flyby within less than 100 km of the moon's surface and use both the service module and the moon's gravity to accelerate back towards the earth.

- The mission will be completed as the spacecraft returns back to earth.

Importance of the programme

- With the Artemis programme, NASA aims to land humans on the moon by 2024.

- The mission will contribute largely to scientific discovery and economic benefits and inspire a new generation of explorers.

- NASA will set up an Artemis Base Camp on the surface and a gateway in lunar orbit which will help the explorations by robots and astronauts.

- The gateway will be a crucial component of NASA's sustainable lunar operations and will act as a multi-purpose outpost orbiting the moon.

Future missions

- The second project under the mission will have crew on board and will test Orion's crucial systems with humans onboard.

- The information and inference from the Artemis programme will be used to send astronauts to Mars.

- NASA is using the lunar orbit to have necessary information and experience to extend human exploration of space.

> *Nut Graf*
>
> *The Artemis I programme by NASA is touted to be a critical part of NASA's sustainable lunar operations and will play an important role in designing and implementing future space projects.*

Achievements of Indians in Science and Technology

4. **Detection of Coronal Mass Ejection**

   » Prelims: Facts about Coronal Mass Ejection

Context:

- A simple technique of separating the constant background of the Solar corona unleashing the nitty-gritty of corona dynamics, has been developed by Indian researchers from Aryabhatta Research Institute of Observational Sciences (ARIES) in association with the Indian Institute of Astrophysics (an autonomous institute under DST).

Coronal Mass Ejection (CME):

- These are dynamic structures in the Solar Corona that act as the driving force of space weather near Earth's space.

- A coronal mass ejection (CME) is a large release of plasma and magnetic field into the solar wind from the Sun's corona. An interplanetary coronal mass ejection (ICME) occurs when a CME penetrates into the interplanetary space. ICMEs have the ability to reach Earth's magnetosphere and collide with it, causing geomagnetic storms, aurorae, and, in rare situations, damage to electrical power networks.

What was the Challenge?

- It is a difficult task to identify the Coronal Mass Ejection through the radial distances in the images taken in the traditional coronagraphs.
- The density of the outermost layer of the atmosphere of the sun decreases with the distance radially outwards.
- As the intensity of the corona observed in white light depends on the density of particles in the atmosphere, it decreases exponentially.
- If the contrast between the constant corona and transient CMEs is not high, the detection of CME becomes challenging.

About the new method:

- The new method developed by the Indian researchers has been named Simple Radiant Gradient Filter (SiRGraF).
- This method is capable of separating the background revealing the dynamic corona.
- This method eliminates the constant background and brings out the transient corona along with the reduction in the radial decrease in intensity.
- Therefore, this method offers a better field view of the CMEs facilitating their identification.
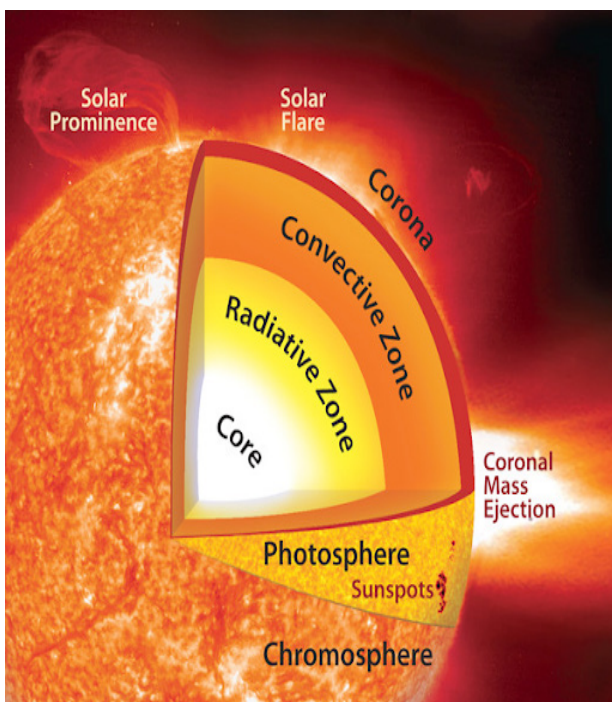
Image Source: earthmagazine.org

Awareness in the field of nano-technology

5. Nano-Fertilisers

 » Prelims: Relevant facts about Nano-fertilisers

 » Mains: Impact of Nano Urea on the betterment of crop productivity.

Context:

- Nano Urea has been notified as nano nitrogen fertiliser in the Fertiliser Control Order of 1985 by the Department of Agriculture and Farmers' Welfare.

An Overview:

- After a precise assessment of All India Farmers field trials on several crops carried out by the Krishi Vigyan Kendra of ICAR, it was inferred that nano urea enhances crop productivity.
- The National Fertilisers Limited (NFL) and Rashtriya Chemicals and Fertilisers Limited are two central public sector undertakings that have signed an MoU with Indian Farmers Fertiliser Cooperative Limited (IFFCO) to transfer technology in order to set up nano urea plants.
- Guidelines have been issued by the Department of Agriculture and Farmers' Welfare for the development of entrepreneurs for drone spraying of liquid fertilisers along with an initiative to promote nano urea through different modes of awareness.

About Nano-Urea:

- It is the only nano fertiliser approved by the Government of India and included in the Fertiliser Control Order.
- It was developed and patented by IFFCO.
- Nano Urea can easily enter through the stomata of leaves and other openings to undergo assimilation by the plant cells.
- As a result of the physiological processes in plants, the extra unused nitrogen is stored in the vacuoles and slowly released for the growth and development of the plant.
- It has been estimated that a small size of nano urea particles (with 20-50 nanometre particle size) can increase crop productivity by more than 80%.
- Nano Urea is environment friendly and is suitable for all soils and crops.
- It effectively meets the crop nitrogen demands increasing leaf photosynthesis and root biomass.
- This can have the potential of increasing the income of the farmers by bettering productivity and reducing the use of conventional urea by 50% or more.
- Farmers can store it in a bottle at ease.
- It helps in the conservation of soil and improves water and air quality.

- It is non–toxic and safe for the users.

Awareness in the field of computers

6. PARAM Ganga

» Prelims: Supercomputers, PARAM Ganga, National Supercomputer Mission

» Mains: India's progress in the development of indigenous supercomputing ecosystems.

Context:

- A petascale supercomputer named 'PARAM Ganga' has been established at IIT Roorkee under the National Supercomputing Mission.

Supercomputers:

- These are computers with special features that offer high-level performance compared to a general-purpose computer.

- The floating point operations per second (FLOPS) denotes the measuring unit of the performance of supercomputers.

- Supercomputers are used in computational science with a wide range of applications in quantum mechanics, weather forecasting, climate research, oil and gas exploration, molecular modelling, detonation of nuclear weapons and so on.

- The fastest supercomputers were made by Seymour Cray at Control Data Corporation in the US, Cray Research and other associate companies.

- Pratyush and Mihir are the fastest supercomputers in India.

- The petascale supercomputers are capable of calculating at least 1015 FLOPS allowing faster processing than the traditional supercomputers.

About PARAM Ganga:

- This indigenous petascale supercomputer has been a joint effort between the National Supercomputing Mission under the Ministry of Electronics and IT in association with the Department of Science and Technology.

- It is implemented by the Centre for Development of Advanced Computing (C-DAC) and the Indian Institute of Science, Bangalore.

- C-DAC is facilitating the establishment of the supercomputing ecosystem in a phased manner and has designed and developed the computer server "Rudra" along with high speed interconnect "Trinetra" which are major components required for supercomputers.

- C-DAC will shoulder the responsibility of design, development, deployment and commissioning of the supercomputing systems under the supervision of the National Supercomputer Mission.

- Infrastructure, Applications, R & D and Human Resource Development are the four pillars of the National Supercomputer Mission.

- The major objective of this initiative is to assist the research community to achieve milestones and introduce products for scientific and societal applications.

- The National Supercomputer Mission plans to build and deploy 24 facilities with cumulative compute power of more than 64 petaflops.

Significance:

- PARAM Ganga will accelerate the research and development activities in multidisciplinary domains of science and engineering.

- This supercomputer will focus on providing computational support to the user community of IIT Roorkee and the adjoining academic institutions.

- This is a significant step towards the vision of Make in India.

Science and Technology- development and their applications

7. SAMat

» Prelims: About SAMat

Context:

- The School of Advanced Materials (SAMat) was unveiled for the betterment in the materials research activity.

About SAMat:

- The new building facility has been unveiled to bring together all the materials research activities of the Jawaharlal Nehru Centre for Advanced Research which acted as the noted centres for materials research in the country and worldwide.

- It was inaugurated at the JNCASR campus and has been supported by non-governmental funds.

- The acronym SAMat depicts the Sanskrit word that means equanimity. And to bring in equanimity to the field of advanced sciences and research the idea of establishing the SAMat building emerged.

- The JNCASR is an autonomous institution under the Department of Science and Technology and an institution deemed to be university.

- Efforts will be made in the future to brighten the contributions of eminent chemist Prf. CNR Rao who founded the Jawaharlal Nehru Centre for Advanced Research (JNCASR) and was present during the inaugural function of SAMat.

- As India progresses towards the 100th year of Indian Independence, the activities of JNCASR and SAMat will work in line with India's ambitions through scientific interventions widening the avenues of research in materials sciences.

- The broad spectrum of materials research include nano-materials, energy materials, soft materials and biomaterials.

- Therefore, the foundation of SAMat offers an umbrella structure to bring all materials research activities to one Centre (JNCASR).

Achievements of Indians in science and technology

8. SARAS 3 Radio Telescope

» Prelims: About SARAS 3 radio telescope.

- It is an indigenously built telescope that was developed by the researchers of Raman Research Institute, an autonomous institute of the Department of Science and Technology.

- It is capable of detecting extremely faint radio wave signals from the depths of time from the "Cosmic Dawn" when the first stars and galaxies were formed in the early universe.

- It is one of the most sensitive instruments in the world in this field of research.

Developments and their applications and effects in everyday life.

9. Gallium Nitride Technology

» Prelims: Facts about Gallium Nitride Technology and GEECI Facility

Context:

- The Union Minister of State for Electronics & Information Technology and Skill Development & Entrepreneurship visited the Gallium Nitride Ecosystem Enabling Centre and Incubator (GEECI) facility.

Gallium Nitride (GaN) Technology and its applications

- GaN is a semiconductor commonly used in blue light-emitting diodes (LEDs).

- The ability to operate at much higher temperatures and voltages than gallium arsenide (GaAs) transistors makes GaN an ideal power amplifier for microwave and terahertz (THz) devices, such as imaging and sensing.

- Gallium Nitride Technology is of strategic importance with its application in the field of 5G, space and defense.

- Gallium Nitride (GaN) plays a key role in enabling e-vehicles and wireless communication.

- Specific transistors called HEMTs made of aluminium gallium nitride/ gallium nitride (AlGaN/GaN) provides an edge over silicon-based transistors as they allow the systems to operate at very high voltages, switch ON and OFF faster, and occupy less space

- The GaN ecosystem will drive innovations by encouraging startups and entrepreneurs.\

- The GaN technology provided various benefits such as reduced energy consumption, higher switching frequency and lower system cost.

Gallium Nitride Ecosystem Enabling Centre and Incubator (GEECI) Facility

- GEECI is present at the Indian Institute of Sciences (IISc), Bengaluru.

- The facility has been established jointly by the Ministry of Electronics and Information Technology and IISc Bengaluru.

- Aim: Establishing GaN based Development Line Foundry facility, especially for RF and power applications, including strategic applications.

Awareness in the field of Space.

10. ISRO to step up tracking of space debris

» Prelims: NETRA Project

» Mains: The need and the significance of scaling up monitoring and tracking of space debris.

Context:

- Indian Space Research Organisation (ISRO) is scaling up its capacity to track orbital debris.

Details:

Space debris tracking radar with a range of 1,500 km and an optical telescope will be indigenously built and developed for the effective surveillance and tracking network under the Network for Space Objects Tracking and Analysis (NETRA) project.

Space debris is made of spent rocket stages, dead satellites, fragments of space objects and debris due to anti-satellite tests (ASAT).

The government has approved the deployment of the radar, which will be used to detect and track objects that are 10 cm and above in size.

Radars and optical telescopes are crucial ground-based facilities for tracking and monitoring space objects which include orbital junk/debris.

Two radars will be deployed 1,000 km apart for spatial diversity.

Currently, there is a Multi Object Tracking Radar at Sriharikota, but it has a limited range.

Network for Space Objects Tracking and Analysis (NETRA) project

- Project NETRA is an initiative to develop an early warning system in space by the Indian Space Research Organisation (ISRO) to detect debris and hazards to the Indian satellites and space assets.

- The project aims to set up multiple observational facilities like telescopes, connected radars, data processing units, and a control center.

The need for scaling up capacity to track the orbital debris:

- ISRO conducted 19 Collision Avoidance Manoeuvres (CAM) in 2021.

    * The number of CAMs has increased from just 3 in 2015 to 12 in 2020 and 19 in 2021.

- ISRO monitored around 4,382 events in LEO and 3,148 events in the geostationary orbit where space objects closely approached Indian assets.

- Debris from the Fengyun-1C satellite (part of the anti-satellite test (ASAT) by China) and the Cosmos 2251-Iridium satellite collision in 2009 has increased the number of threats.

- Experts predict that the amount of debris would increase due to an increase in space missions worldwide.

    * In 2020, 522 objects were placed in space via 102 launches.

    * Whereas in 2021, about 1,860 objects were placed through 135 launches.

> **_Nut Graf_**
>
> _Space debris pose a great threat to the Indian space assets that have been developed with huge amounts of hard work and cost. Hence there is an urgent need to augment capabilities to protect space assets._

DEFENCE AND INTERNAL SECURITY

Security Challenges and their Management

1. **Important Defence learnings from the ongoing Russia-Ukraine conflict**

   » Prelims: Major defence purchases from India

   » Mains: Major defence and security learnings for India from the ongoing Russia- Ukraine conflict, Recommendations for India.

   Context:

   • Russia- Ukraine conflict

   Major learnings from the conflict:

   Fallacy of collective defence:

   • Though the Western countries led by the U.S. have been supplying arms and intelligence inputs to Ukraine in its conflict with Russia, the Ukrainians have had to face the brunt of the Russian military might all alone.

   • The United States has backed away from sending its own army on the ground given that this could lead to substantial risks for itself. This has exposed the fallacy of an ally coming to fight with you and for you.

   • This indicates that a nation's vital interests can be protected only by that nation itself.

   Importance of military power:

   • Despite almost a global condemnation of Russia's moves in the conflict and the threat of economic sanctions, Russia has been able to push ahead with its plans and seems close to realizing its security demands.

   • This is indicative of the fact that in the real world, 'power' talks and is in line with the famous observation by the fifth century BC, Greek historian Thucydides who wrote "Right, as the world goes, is only in question between equals in power — while the strong do what they can and the weak suffer what they must."

   • The unfolding events in Ukraine proves that hard power dictates terms in geopolitics.

   Importance of self-sufficiency in defence domain:

   • India has had to walk a diplomatic tightrope over Russia-Ukraine issue as it tries to balance its ties with Russia and the West. One of the prime reasons for this stance has been the heavy dependency of India on Russia and the western countries for defence equipment.

   • For a nation to have strategic autonomy in matters of national security, self-sufficiency in defence research and development and manufacturing is an imperative.

   • Additionally such self-sufficiency would afford the required deterrence to prevent war, and to prosecute it (war) if deterrence fails.

   Significance of Russia and Ukraine for Indian Defence:

   Russia:

   • Russia has been a traditional military supplier for India. Over 60% of Indian military inventory is of Russian origin and several new deals are also in the pipeline.

   • Notably, Russia has been sharing critical technologies with India and indulging in joint development of weapon systems.

   • India requires a functioning supply chain relationship with Russia for spares and support, which is critical for its military.

   • India is looking to receive the third Akula class nuclear attack submarine (SSN) sometime in 2025 from Russia
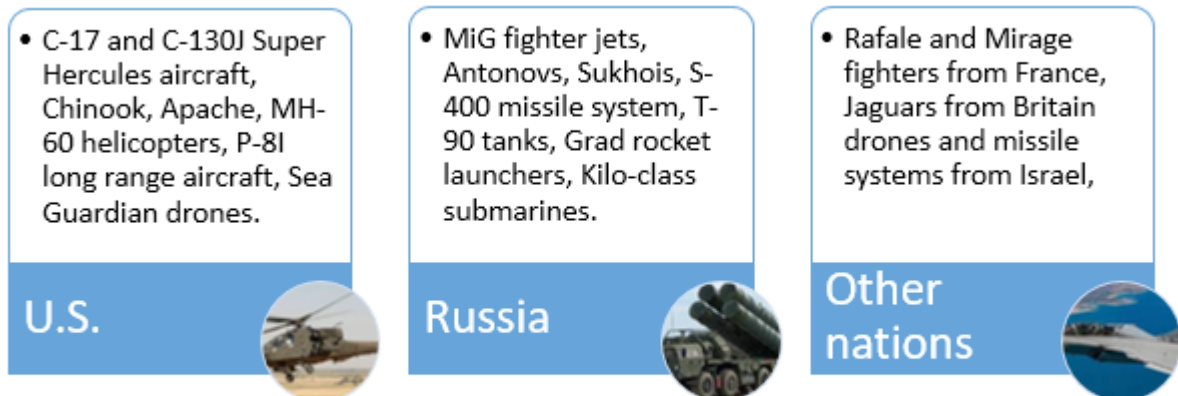
   Ukraine:

   • India had signed a separate deal with Ukraine for eight Zorya-Mashproekt gas turbine engines for its frigates.

   • Ukraine is also upgrading over 100 An-32 transport aircraft of the IAF under a deal finalized in 2009. While the upgrade of 45 An-32s in Ukraine was completed in 2015, the remaining aircraft were to be upgraded by the IAF Base Repair Depot, Kanpur. The tensions between Russia and Ukraine had considerably delayed the modernisation of the An-32 transport fleet of the Indian Air Force (IAF).

   • In 2021, Ukraine signed four agreements worth $70 million, which includes sale of new weapons as well as maintenance and upgrade of the existing ones in service with the military.

   The Indian experience so far:

   • India's defence and security experience has been similar. During the 1962 India-China war, Russia was not supportive of India and it in fact sided with China and the Americans though offered moral and logistic support they turned down India's request for military help.

   • India's focussed efforts at strengthening its defence capabilities helped it win the wars of 1965 and 1971.

   • The 1974 'peaceful' nuclear explosion and the 1998 Operation Shakti nuclear tests has helped India achieve a degree of nuclear deterrence in the nuclear realm. This is crucial given that India faces two nuclear adversaries on its borders.

- Recognizing the perils associated with heavy dependency on other countries for defence equipment, after the Cold War ended, India diversified its defence purchases to dilute its dependence on Russia.

- C-17 and C-130J Super Hercules aircraft, Chinook, Apache, MH-60 helicopters, P-8I long range aircraft, Sea Guardian drones.

U.S.

- MiG fighter jets, Antonovs, Sukhois, S-400 missile system, T-90 tanks, Grad rocket launchers, Kilo-class submarines.

Russia

- Rafale and Mirage fighters from France, Jaguars from Britain drones and missile systems from Israel,

Other nations

Major defence purchases of India

Recommendations:

- Based on the above observations, the article makes the following recommendations for India.
  - * Given that an atomic weapon is a deterrent in the nuclear realm and not a determinant of 'conventional' power the author suggests improving India's conventional defence capabilities.
  - * Recognizing India's lagging in conventional military capability, the Atmanirbhar thrust in matters of defence research and development and manufacturing, has to become a national endeavour in mission mode.

> **Nut Graf**
>
> *The ongoing Russia- Ukraine conflict holds important lessons for India on the defence and security aspects. It exposes the fallacy of collective defence and stresses the importance of hard military power in geo-political relations and highlights the need to achieve self-sufficiency in defence sector.*

Basics of Cyber Security

2. Cyber attacks

» Mains: The importance of reporting cyber-attacks and measures to prevent them.

Context:

- The Minister of State for Electronics and Information Technology indicated that The Ministry of Electronics and Information Technology (MeitY) will soon come out with cyber security regulations.

Cyber Security and its Regulation:

- Cyber security is the protection of computer systems and networks from information disclosure, theft of, or damage to their hardware, software, or electronic data, as well as from the disruption or misdirection of the services they provide.

- The regulations are expected to put the onus on organisations to report any cybercrime that may have happened against them, including data leaks
  - * Clause 25 in the Data Protection Bill 2021 says that data fiduciaries should report any personal and non-personal data breach incident within 72 hours of becoming aware of a breach.

* European Union General Data Protection Regulation also contains a clause for reporting cyber security breaches within a stringent timeline.

Cost of cyber security breaches:

- According to Cybercrime Magazine, if it were measured as a country, then cybercrime — which is predicted to inflict damages totalling $6 trillion globally in 2021 — would be the world's third-largest economy after the U.S. and China.

- The need for reporting becomes crucial when the attack is on critical utilities such as power stations, gas pipelines, etc. for example the ransomware attack against the nationwide gas pipeline in 2021 in the U.S. virtually brought down the transportation of about 45% of all petrol and diesel consumed on the east coast.

Need For Reporting Cyber Security Breaches:

- In order to protect the critical infrastructure from cyber-attacks and to take precautionary action, it is important to report cyber-attacks on government and state-owned enterprises.

- Reporting also helps cyber security organisations such as CERT in alerting other organisations about cyber security attacks. Firms that are yet to take precautionary measures can also take action to protect their critical infrastructure by installing security patches and improving cyber security infrastructure.

Challenges in Reporting:

- There is a challenge of the reluctance of firms in reporting cyber security breaches since it affects their reputation and as a consequence, leads to a fall in the price of their shares.

- There is also the enforcement challenge of identifying cyber security breaches in organisations that have not reported cyber-attacks.

- The regulators in most countries including India do not have the capacity to conduct cyber security audits frequently and regularly.

- This provides further incentive for organisations not to report cyber security breaches.

Way forward:

- There is a need for a comprehensive security audit to identify such incidents that might not have been reported by firms.

- Government can appoint a third-party cyber security auditor for the conduct of periodical cyber security impact assessments among all government departments at the National and State levels. This will help in detecting and avoiding cyber security incidents.

- The government can also mandate the publication of periodic security audit reports by private firms.

- Government can also conduct surprise cyber security audits.

- Common Criteria Testing Laboratories and certification bodies can be set up across the country to evaluate and certify IT security products. These can be extended for cyber security audits and assessments.

- Private large firms can be encouraged to replicate the cyber security command center of IBM for protecting their key assets.

- These above measures can make India on par with EU GDPR regulations.

> ### Nut Graf
> The new cyber security regulations are expected to make it mandatory for firms to report cyber-attacks and incidents which will play a significant role in Cyber security measures to protect critical infrastructure.

Important defence equipment

3. HANSA-NG

» Prelims: HANSA-NG

Context:

- A first-of-its-kind indigenous aircraft trainer, HANSA-NG, has been developed by the CSIR-National Aerospace Laboratories (CSIR-NAL).

HANSA-NG:

- HANSA-New Generation is one of the most advanced flying trainers designed to meet the need of flying clubs in India for trainer aircraft.

- It is designed and developed by the Council of Scientific and Industrial Research-National Aerospace Laboratories (CSIR-NAL).

- It is an ideal aircraft for commercial pilot licensing due to its low cost and low fuel consumption.

Bilateral military exercises

4. India, Japan Army exercise concludes

» Prelims: Dharma Guardian military exercise

- India-Japan bilateral Army exercise, Dharma Guardian, concluded recently at Belgaum.

- The contingents from the two countries shared their expertise on exploiting disruptive technologies like drone and anti-drone weapons.

Security Challenges and their Management

5. Unguided missile

» Mains: Concerns associated with accidental missile launches

Context:

- A missile was "accidently launched" during routine maintenance and inspection and landed within Pakistani territory.

    * Pakistan claimed an unarmed Indian supersonic missile had landed at a place 124 km within Pakistani territory.

Agreement on pre-notification of flight testing of ballistic missiles 2005

- An 2005 agreement between India and Pakistan on pre-notification of flight testing of ballistic missiles states that:

    * Each country has to notify the other at least three days in advance of the flight test it wants to undertake whether surface-to-surface, land or sea launched missiles.

    * The testing country must ensure that the launch site is not within 40 km, and the planned impact area is not within 75 km of either the International Boundary (IB) or the Line of Control (LoC).

    * The planned trajectory should not cross the IB or the LoC and must maintain a horizontal distance of at least 40 km from the border.

- Before the test, the country must issue Notice to Air Missions (NOTAM) or Navigational Warning (NAVAREA) to alert aviation pilots and seafarers, respectively.

Response from the two countries:

- The Government of India has stated that the incident happened in the course of routine maintenance, due to a technical malfunction. However taking note of the serious lapse, the Indian government has ordered a high-level Court of Inquiry.

- Pakistan has expressed serious concerns over the technical lapses of such serious nature, especially in the handling of strategic weapons like missile systems. Pakistan has called for a joint probe along with the involvement of the international community.

Concerns:

Unintended damage:

- Such accidental firing can cause unintended damage on large scales including loss of life and property.

- In a similar incident in February 2019, a Mi-17V5 crashed in Budgam killing its personnel onboard and a civilian on the ground. Inquiry revealed that it was shot by an Israeli-origin Spyder surface-to-air missile system of the Indian Air Force due to certain lapses in the missile system.

Unintended escalation of tensions:

- Such incidents could have led to serious, unintended escalation of tensions between the two nuclear-armed countries of India and Pakistan. Such nuclear escalation in the volatile region will only end in destruction on both sides.

- Both India and Pakistan are nuclear-weapons powers with a diverse arsenal of tactical and strategic missiles. Given the sensitive nature of the relationship, any such mishap could be misinterpreted as an attack, prompting retaliatory steps on the other side and further escalation.

Dent India's image on the global stage:

- Such incidents could dent confidence of the international community in India.

- India's global image of being a responsible nuclear power has been built over decades of restrained words and thoughtful action. Though the security of India's nuclear command and technical capabilities has never been in doubt, such incidents would adversely impact India's reputation.

- India is a member of the Missile Technology Control Regime since 2016. Such recognition comes with an acceptance of India's capability of handling its military strengths and contributing to global security. Generally, the handling and the launch of missiles are highly regulated with checks and balances to avoid accidents. The occurrence of such an incident shows the insufficiency of these measures and hence creates doubts about India's capacity to handle nuclear and other military assets.

Nut Graf

The incident of missile malfunction raises several fundamental questions regarding security protocols and technical safeguards against accidental or unauthorized launch of missiles.

Defence Equipment

6. Hypersonic weapons

» Prelims: Hypersonic weapons

Context:

- Recently, the Russian military used a hypersonic weapon to destroy an underground weapons depot in western Ukraine.

What are hypersonic weapons?

- Hypersonic weapons are manoeuvrable weapons with a top speed of Mach 5, or five times the speed of sound.

- The speed of sound is Mach 1, and speeds more than Mach 1 are supersonic, while speeds greater than Mach 5 are hypersonic.

- Hypersonic weapons travel through the atmosphere and can manoeuvre midway, making detection and interception extremely challenging.

- This means radars and air defences won't be able to detect them until they're very close to them, giving them very little time to react.

Types of hypersonic weapons:

- Glide vehicles and cruise missiles are the two major types of these missiles.

- Because of the difficulties in achieving hypersonic propulsion for missiles, the majority of emphasis is concentrated on the former, which are launched from a rocket before gliding to their target.

- Scramjet engines utilise the oxygen in the air to provide thrust during flight, allowing the missiles to cruise at a constant speed and altitude.

What is the status of Russian, Chinese and U.S. programmes?

Defence equipment

7. India test-fires two surface-to-air missiles

 » Prelims: Medium Range Surface-to-Air Missiles (MRSAMs)

Context

- India successfully test-fired two Army-version Medium Range Surface-to-Air Missiles (MRSAMs) from the Integrated Test Range at Chandipur in Odisha.

Medium Range Surface-to-Air Missiles (MRSAMs):

- The MRSAM is a surface-to-air missile developed by the Defence Research and Development Organization (DRDO) and Israel Aerospace Industries (IAI) for use by the Indian Army.

- The missile will replace the Army's aging Air Defense systems.

- Multi-function radar, mobile launcher system, and other vehicles make up the MRSAM weapon system.

- It is available in Army, Navy, and Air Force versions.

Russia	• Russia's Kinzhal air-launched hypersonic missile system ("Dagger") has a range of over 2,000 kilometres. The missile has a range of 1,500-2,000 kilometres and can carry a nuclear or conventional payload of 480 kilogrammes. • Russia recently announced that a Tsirkon hypersonic cruise missile launched from a Severodvinsk submarine in the Barents Sea successfully hit a target 350 kilometres away
China	• China tested a nuclear-capable hypersonic missile that circled the globe before speeding towards its target, according to the Financial Times. • China, on the other hand, has denied having nuclear weapons.
US	• For decades, the United States has conducted tests on hypersonic weapons. • Project Bumper, a two-stage rocket launched in 1949 that reached a speed of Mach 6.7, was the first vehicle to exceed Mach 5. • The U.S. has six hypersonic programmes, divided among the Air Force, Army and Navy
India	• India has approximately 12 hypersonic wind tunnels capable of testing speeds of up to Mach 13 in operation. • As part of its Hypersonic Technology Demonstrator Vehicle (HSTDV) programme, India is developing an indigenous, dual-capable hypersonic cruise missile and successfully tested a Mach 6 scramjet in 2019 and 2020. • The BrahMos supersonic cruise missile is also being developed in a hypersonic version.
Other countries	• A number of other countries — including Australia, India, France, Germany, and Japan — are also developing hypersonic weapons technology.

Key features of the missile:

- It has fins and canards to help it maintain stability and manoeuvrability in flight.

- Eight canisterised missiles can be transported, placed, and launched from the mobile launcher.

- The missile is propelled by a solid-fuel engine with a thrust vector control system.

- The missile has a top speed of Mach 2 and can travel at a range of speeds (twice the speed of sound).

Cyber Security

8. Cyber Security Breach In Nuclear Plants

» Mains: Steps taken towards ensuring Cyber Security of Nuclear Plants

Context

- The article talks about the cyber security measures undertaken by the government to prevent security breaches in nuclear power plants.

Measures taken by the government to ensure cyber security

- Indian nuclear plants have been established with stringent protocols in the design, development and operation of the systems.

- The safety and security of crucial systems are developed using hardware and software which are authenticated and validated making the systems immune to cyber security threats.

- Critical infrastructures of nuclear power plants are isolated from the Internet and access to such systems is restricted to authorized personnel and is closely monitored.

- The Department of Atomic Energy (DAE) has specialist groups like the Computer and Information Security Advisory Group (CISAG) and Taskforce for Instrumentation and Control Security (TAFICS) to look after cyber security.

  * All the systems are built based on the standards and guidelines formulated by Atomic Energy Regulatory Board and TAFICS which are in line with the standards established by the International Atomic Energy Agency (IAEA).

  * The cyber security infrastructure in the facilities follows design principles and guidelines prescribed by CISAG and India's central cyber security agencies such as CERT-IN.

- Also, measures have been undertaken for improving the Information Security in nuclear power plants like restriction on removable media, blocking of websites & IPs, etc.

Military Exercises

9. IMEX-22

» Prelims: IMEX-22 and Indian Ocean Naval Symposium (IONS).

Context

- Maritime exercise, IMEX-22, was held in Goa recently

IMEX-22:

- IMEX-22 is the first edition of the maritime exercise conducted by the regional grouping Indian Ocean Naval Symposium (IONS).The exercise saw the participation of 16 countries of the 25 member nations of IONS.

- The exercise is said to provide a crucial platform for regional navies to collaborate and collectively respond to natural disasters in the region.

- The exercise further paves way for improving regional cooperation.

ENVIRONMENT AND ECOLOGY

Conservation, environmental pollution and degradation, environmental impact assessment.

1. **Intergovernmental Panel on Climate Change (IPCC) report**

   » Prelims: Intergovernmental Panel on Climate Change

   » Mains: Climate change and impact on India; Threats highlighted by the report and key remedial measures suggested.

   Context:

   • A report by the Intergovernmental Panel on Climate Change (IPCC) was recently made public.

   Details:

   • The report assesses the prospects for the earth if the global average surface temperature exceeds 1.5°C from the pre-industrial era in the near-term, mid-term and long-term scenario.

   • The report predicts that the world faces unavoidable multiple climate hazards over the next two decades.

   • The report predicts severe implications on food supply, human health, biodiversity loss and integrity of the natural environment if carbon emissions are not reduced sharply.

   • The report also reviewed the scientific evidence on natural, ecological, social and economic spheres and concluded that climate change has already caused permanent damage to land, coastal and marine ecosystems. Human-induced climate change, including more frequent and intense extreme events, has caused widespread adverse impacts and damage to nature and people. Across sectors and regions, the most vulnerable people and systems are observed to be disproportionately affected.

   The threats posed by climate change:

   • **Food Security** - food production is considered a fundamental factor for determining human well-being.

      * The scientists opine that "unsustainable agricultural expansion, driven in part by unbalanced diets" has increased the stress on the ecosystem, resulting in competition for land and water.

      * The report suggests that with increased global warming levels in the mid-term (from 2041-60), the risks of food security would be severe.

   * This will lead to malnutrition and micronutrient deficiencies in Sub-Saharan Africa, South Asia, Central and South America and Small Islands.

   • **Risk of extinction** - the IPCC report says that in the current situation, about 3% to 14% of all species on earth are at a very high risk of extinction at 1.5°C, with disastrous losses at higher temperatures.

      * This will have an impact on ecological catastrophes.

   • **Disasters** - According to the report, between 2010-2020, human deaths from floods, droughts and storms was 15 times more in highly vulnerable regions, compared to very low vulnerability regions.

      * South Asia is a hotspot

      * Heavy rainfall has increased in the Indian subcontinent, and regions like Chennai, Chittagong, Dhaka and Mumbai, the Gangetic Plains and the Delhi - Lahore corridor are seen as future hotspots.

   Suggested remedial measures:

   Food security:

   • Raising the output through cultivar improvements, agroforestry, community-based adaptation, farm and landscape diversification, and urban agriculture.

   • Applying the principles of agroecology (a composite measure of using ecological and social concepts for sustainable agriculture), ecosystem-based management in fisheries and aquaculture, and use of natural processes can improve food security, nutrition, health, livelihoods, and biodiversity.

   Disaster management:

   • Heat Health Action Plans that include early warning and response systems for extreme heat.

   • Water-borne and food-borne disease threats can be tackled by bettering the access to potable water, and insulating the water and sanitation systems to floods and other extreme weather events.

   • Mainstreaming of adaptation actions into institutional budget and policy planning.

   • Introducing incentives and economic instruments that help address market failures to help public and private players sustain themselves.

Climate resilient development:

- The IPCC feels the current trend of energy-intensive and market-led urbanisation demands an immediate and critical need for climate resilient development.

- Climate Resilient Development would help achieve reduction in greenhouse gas emissions, formulation of actions to absorb existing CO2 in the atmosphere, and increase allocation of funds for adaptation.

> *Nut Graf*
>
> *The IPCC report is a dire warning about the consequences of inaction on climate change. It shows that climate change is a grave and mounting threat to Human well-being. About 3.3 and 3.6 billion people are currently vulnerable to the impacts of climate change.*

Conservation, Environmental Pollution and Degradation, Environmental Impact Assessment.

2. **Clean energy must use the battery of a circular economy**

   » Prelims: Extended producer responsibility

   » Mains: Significance of circular economy, Recommendations in this direction.

Context:

- In the recent budget speech, the Finance Minister, had emphasised the role of cleaner technologies in India's future economic growth while also noting the importance of transitioning to a circular economy from the existing linear one.

Significance of circular economy:

Handling waste:

- The circular economy model with its inbuilt efficient waste management ecosystem would be necessary to manage the enormous waste generated by renewable energy projects in the coming decades.

- As per the estimates of the International Renewable Energy Agency (IRENA), the cumulative waste generated by India's total installed solar capacity could be as high as 325 kilotonnes by 2030.

Economic aspects:

- A robust renewables waste management and recycling ecosystem could help India create new jobs. It would help create quality employment opportunities for the future generations across the entire value chain of waste management and recycling.

- Notably it was also help formalize the largely informal nature of India's recycling sector which would help workers in the informal sector access various socio-economic benefits.

  * A majority of India's recycling sector is informal and workers have to work in unsafe environments without standardised wages.

Ensured supply of raw materials:

- Efficient metal recovery from waste provides a resilient supply of raw material for the renewable energy manufacturing industry.

- This could help insulate these industries from potential supply chain shocks of raw materials while ensuring energy security for India.

Reduce environmental harm:

- Landfilling is the cheapest and most common practice to manage renewable energy waste currently. However, it is not environmentally sustainable. The various metals and non-metals used in these components could leach into the environment and enter the food chain.

- An efficient recycling system could help reduce such environmental harm and help mankind towards a sustainable future.

Recommendations:

A clear framework:

- The Indian policymakers should revise the existing electronic waste management rules and the extended producer responsibility provision to bring various clean energy components under its ambit.

- The manufacturers, assemblers, importers and distributors in the renewable energy industry should be brought under the ambit of electronic waste management rules and there should be clear cut allocation of responsibilities to these stakeholders.

Ban on unscientific approaches:

- Dumping and burning of related components should be banned.

  * Leaching of heavy metals such as lead and cadmium from solar photovoltaic modules remains a major environmental concern.

  * Burning the polymeric encapsulant layer in solar photovoltaic modules releases toxic gases such as sulphur dioxide and some volatile organic compounds.

Thrust on Research and Development:

- The renewable energy industry should invest in the research and development of recycling technologies.

- Beside the traditional methods of dismantling and disassembly, the R&D efforts should focus on discovering new ways of recycling that have higher efficiency and are less damaging on the environment.

Ensuring adequate and affordable finance facilities:

- There is the need for innovative financing routes for waste management.

- Provisions like lower interest rates on loans disbursed for setting up renewable energy waste recycling facilities, issuing performance-based green certificates to recyclers that could be traded to raise money for waste management would help ease the financial burden.

Creating a market:

- The creation of a market for recycled materials through mandatory procurement by the renewable energy and other relevant manufacturing industries will create the necessary demand for such goods.

Focus on quality of goods:

- There needs to be an improvement in product design and quality.

  * The product designs should be simplified to reduce the recycling steps.

  * Toxic metals such as cadmium and lead should be substituted in renewable energy components.

- The Union and State governments should set stringent quality control standards for components used in their tenders. This will prevent premature end-of-life of components, and consequent waste creation.

- Apart from helping reduce waste generation, such quality enforcement could also help position India's renewable energy industry as a global supplier of quality products.

> *Nut Graf*
>
> *Adopting a circular economy in the renewable energy sector will not only help handle the enormous waste being generated in an environmentally sustainable way but it will also have a marked economic impact by creating more jobs and ensuring resilient supply chains.*

Conservation, environmental pollution and degradation, environmental impact assessment.

3. New gin berry species discovered in T.N.

  » Prelims: Newly discovered Gin berry species

Context:

- A team of scientists from the Botanical Survey of India (BSI) have discovered a new gin berry species from the Kanyakumari Wildlife Sanctuary in Tamil Nadu.

About the Species:

- The species, Glycosmis albicarpa is endemic to the southern Western Ghats.

- The species belongs to the Orange family Rutaceae.

- Berries of the Glycosmis species have the unique characteristic of 'gin aroma'.

- The species is an evergreen small tree.

Kanyakumari Wildlife Sanctuary:

- This protected area in Kanyakumari is a tiger habitat located in Tamil Nadu.

- There are seven rivers that originate in this forest, including the Tamaraibarani and Pahruli river.

- The area is a wildlife corridor with high biodiversity, and in addition to tigers, is home to the threatened species: Indian Bison, elephant, Indian Rock Python, Lion-tailed Macaque, Mouse deer, Nilgiri Tahr and Sambar deer.

Conservation, environmental pollution and degradation

4. Water management needs a hydro-social approach

  » Mains: Depletion of freshwater resources- its factors, key concerns and the way forward.

Freshwater resources under stress:

- According to the Global Water System Project (launched in 2003) as a joint programme by the Earth System Science Partnership (ESSP) and Global Environmental Change (GEC) programme, there is an increasing global concern regarding the human-induced change in freshwater sources and its impact on the society.

- The Intergovernmental Panel on Climate Change (IPCC) in its 4th assessment report (2007) showed the link between societal vulnerability and changes in the water systems.

- It is estimated that the gap between demand and supply of freshwater would reach up to 40% by 2030 if the current trends continue.

Anthropogenic factors impacting freshwater systems:

- Engineering of river channels

- Irrigation and other consumptive use of water

- Widespread land use/land cover change

- Change in an aquatic habitat,

- Point and non-point sources of pollution affecting water quality

- The intra- and inter-basin transfer (IBT)

The intra- and inter-basin transfer:

- The intra- and inter-basin transfer (IBT) of water is one of the main hydrological interventions to balance the water scarcity due to naturally existing unequal distribution of water resources.

- Recent reports show that there are 110 water transfer mega projects that are being executed or being planned across the world.

- The National River Linking Project of India is one among them.

- These projects would create artificial water paths that are twice the length of the earth's equator and will transfer 1,910 kms of water annually.

- The projects will re-engineer the hydrological system with a high chance of local, regional and global level implications.

- The World Wildlife Fund for Nature (2009) has recommended a vigilant approach and adherence to sustainability principles set out by the World Commission on Dams during the planning and construction of IBT projects.

- Inter-basin transfer of water came under the spotlight in India, because of a provision made in the Budget 2022 for the Ken Betwa river link project.

Key concerns in the Indian context:

- The idea of IBT is to transfer water from the surplus basin to a deficit basin.

    * However, the water demand in the donor basin by taking into account present and future land use, cropping patterns, population growth, urbanisation, industrialisation, and socio-economic development are not analysed.

    * Also, the rainfall in many donor basins is reducing.

- Concerns about the utilisation of water resources

    * India has created irrigation potential of 112 million hectares, but the gross irrigated area is 93 million hectares.

    * In 1950-51, canal irrigation contributed 40% of net irrigated area, but by 2014-15, the net irrigated area had reduced to 24%.

    * The average efficiency of irrigation projects in India is only 38% against 50%-60% in the case of developed countries.

- Consumption of more water

    * Rice and wheat, which account for more than 75% of agricultural production, consume more water than the global average.

    * The agriculture sector constitutes about 90% of total water use in India.

    * Industrial plants consume 2 to 3.5 times more water than in other countries.

- The domestic sector also sees a 30% to 40% loss of water due to leakage.

- Grey water is rarely utilised in the country

    * Greywater refers to domestic wastewater generated in households or office buildings from streams without fecal contamination.

    * 55% to 75% of domestic water use turns into grey water based on the nature of use, climatic conditions, etc. Considering the size of India's urban population, the amount of grey water generated is very high.

    * The discharge of untreated grey water and industrial effluents into freshwater bodies is cause for concern.

    * Reduction in natural storage capacity and deterioration in catchment efficiency.

Recommendations:

- The idea that the water system is evolving and that the issues are mainly with management and governance has been accepted.

- Water projects are politically motivated and indicate an interconnectedness with social relations, social power, and technology.

- It is crucial to include less predictable factors, adopt binary ways of thinking of 'either or', and involve non-state actors in decision-making processes.

- A hybrid water management framework is required, where along with the professionals and policymakers; the individuals, community and society have predefined roles in the value chain.

Conservation, environmental pollution and degradation, environmental impact assessment.

5. **The phenomenon of coral bleaching**

    » Prelims: Coral Reefs and Coral bleaching

    » Mains: Concerns with increased Coral bleaching

Context:

- The management authority of Australia's Great Barrier Reef, confirmed that the reef is experiencing a mass coral bleaching event.

Coral Reefs:

- Corals are invertebrates or animals without a spine that live in the sea. Each coral is called a polyp, and a colony is made up of thousands of polyps.

- There are two types of coral: hard coral and soft coral.

    * Hard corals use calcium carbonate from the seawater to create hard, white exoskeletons.

* Soft coral polyps imitate plant skeletons and attach themselves to them as well as older skeletons built by their forefathers.

- Symbiotic relationship:

  * Corals have a symbiotic relationship with zooxanthellae, which are single-celled algae.

  * The algae provide the coral with food and nutrients, which they produce using the sun's light in a process called photosynthesis.

  * As a result, the corals provide a home for the algae as well as essential nutrients. Corals' bright colour is also due to the zooxanthellae.

- Australia's Great Barrier Reef is the world's largest reef system stretching across 2,300 km.

- Reef 2050: The Reef 2050 Long-Term Sustainability Plan is the overarching framework for protecting and managing the Great Barrier Reef to 2050 developed by the Australian and Queensland governments.

What is coral bleaching?

- When corals are stressed in their environment, such as by changes in temperature, pollution, or high levels of ocean acidity, they bleach.

- When coral polyps are stressed, the zooxanthellae, or food-producing algae, inside them begin to produce reactive oxygen species, which are harmful to the corals.

- Bleached corals can survive depending on the severity of the bleaching and the return of normal sea temperatures.

Mass Bleaching:

- When the El Nino weather pattern caused sea surfaces in the Pacific Ocean to heat up, the first mass bleaching event occurred in 1998, killing 8% of the world's coral.

- In 2002, the second event took place.

- Between 2014 and 2017, the most damaging bleaching event occurred. Reefs in Guam, in the Western Pacific, were the first to be affected, followed by reefs in the North, South, and Indian Oceans.

Nut Graf

Coral bleaching is an economic and environmental concern and needs to be given due consideration. Measures must be taken to protect and conserve the coral reefs as they play an important part in the aquatic life system and also support marine life that fuels the global fishing industry.

Conservation, environmental pollution and degradation, environmental impact assessment.

6. **Study reveals major decline in golden langur habitat**

» Prelims: Golden langur

Context:

- A recent study by scientists has suggested a significant decline in the habitat of the golden langur (Trachypithecus geei).

Golden langur (Trachypithecus geei):

- Gee's golden langur (Trachypithecus geei), or the golden langur, is an Old World monkey found in a small region of western Assam, India and in the neighboring foothills of the Black Mountains of Bhutan.

- Golden langurs are easily recognised by the colour of their fur, and are distributed in the forested habitats, fragmented and isolated areas.

- It is considered sacred by many Himalayan people.

- IUCN conservation status: Endangered

Conservation, environmental pollution and degradation, environmental impact assessment.

7. **African technique used to translocate deer from Keoladeo**

» Prelims: Boma technique

Context:

- An experiment with Africa's Boma technique undertaken at Keoladeo National Park in Rajasthan's Bharatpur district for capturing and translocating spotted deer.

What is Boma technique?

- The Boma capturing technique involves luring animals into an enclosure by chasing them through a funnel-like fencing. It is popular in Africa.

- The funnel tapers into an animal selection-cum-loading chute, supported with grass mats and green net to make it opaque for animals, which are then herded into a large vehicle for transport to another location.

- This old technique was earlier utilized to capture wild elephants for training and service.

Where is the Boma technique used?

- In recent years, it was adopted in Madhya Pradesh to capture a herd of nilgai.

- Boma has been put to practice for the first time in Rajasthan for sending the ungulates to the prey-deficient Mukundara reserve as the kills for tigers and leopards.

8. Afforestation programmes

> » Mains: Various issues with the tree plantation programmes and the way forward.

Context:

- The UN General Assembly (UNGA) has announced that March 21 would be celebrated as the International Day of Forests.

Details

- This proclamation by UNGA is aimed at spreading awareness about forests and their importance.
- Countries will organise programmes to promote plantation of trees that helps in;
    * Increasing forest cover
    * Conservation of biodiversity
    * Counter climate change

Initiatives by India:

- The government has spent huge amounts of rupees to increase the forest cover through tree planting.
- Recently, the Union government launched a ₹19,000 crore afforestation programme that aims to rejuvenate 13 major rivers under the National Afforestation and Eco-Development Board.
    * The government claims that "this project would increase 'forest' cover by 7,417.36 square kilometres in the vicinity of these rivers".

Issues with tree plantation programmes:

Loss of complex ecosystems:

- Forest is a complex ecosystem that is built over years of interplay between various creatures such as birds, mammals, reptiles, insects, fungi, microorganisms, and other factors such as water, soil, climate, etc.
- Tree plantation programmes which are simply aimed at planting trees ensure green cover but do not compensate for the loss of complex ecosystems such as the forests.

Loss of biodiversity:

- All the trees help in carbon sequestration and reduce pollution, even the ones that are invasive.
- Invasive species have the ability to alter the entire ecosystem, which will result in the extinction of certain species.

Examples:

- Conversion of natural grasslands to wooded areas through tree plantation now threatens the existence of the Great Indian Bustard.

- The Jayamangali Conservation Reserve, a grassland in Karnataka, which was a home to wolves, now has an increased leopard population due to extensive plantation of Acacia, Eucalyptus and Tamarind trees.
- Ecosystems such as woodland savanna, laterite grasslands, scrubland, wetlands and rocky outcrops that home unique biodiversity have now transformed into sterile landscapes due to extensive tree planting.

Loss of native species:

- The tree-planting campaigns propagate extensive plantation of neem, peepal, and banyan trees throughout the country despite them being non-native in many parts of the country.
- This results in the loss of native species which are crucial for the ecological balance.

Recommendations:

- Tree-planting activities must be carefully planned such that they are friendly to local biodiversity.
- It is important to realise that the native vegetation and the local biodiversity also play an important role in formation of forests
- One should plant the right tree in the right place along with the right reason.
- The results of such initiatives and campaigns must be carefully monitored and examined, to understand more about the consequences.
- Another solution is to let forests come back on their own through
- Adoption of more economical and sustainable initiatives such as assisted natural regeneration methods wherein the forests rejuvenate on their own through protection.
    * Natural regeneration methods absorb 40 times more carbon than plantations and also host more biodiversity.

> **Nut Graf**
>
> *The governments across the world are investing heavily in 'creating' forests through tree-plantation campaigns which have yielded very little success, instead we must focus more on activities that help protect native vegetation and the local biodiversity which ultimately will result in the resurgence of forests.*

Conservation, environmental pollution and degradation, environmental impact Assessment.

9. Recycling heat of datacenters

- » Prelims: What is a data center?
- » Mains: Heat Potential of data centers and waste heat recycle project

Context:

- Microsoft has partnered with Fortum to heat homes, services and businesses in Finland with sustainable waste heat from a new datacenter to be built in Finland.

What is a data center?

- A data centre is a physical location where businesses keep their mission-critical apps and data, process them, and distribute them to users.
- It is built on a network of computer and storage resources that allows shared programmes and data to be delivered.
- Routers, switches, firewalls, storage systems, servers, and application-delivery controllers are the main components of a data centre.
- Many large datacenters are housed in separate structures. Smaller datacenters can be housed in specially built rooms within buildings that serve several purposes.

Heat Potential of datacentres:

- The temperatures in a datacenter's hot corridors range between 80 and 115 degrees Fahrenheit.
- Over 75% of the electricity used in a datacenter is wasted heat.
- A data centre may supply warmth up to 85 degrees Fahrenheit in the winter, similar to a gas boiler, but with better energy efficiency than a heat pump in a new home.

Scale of carbon footprint:

- Data centres use roughly 200 terawatt-hours (TWh) of electricity on a global scale, accounting for more than 1% of overall electricity consumption.
- According to the International Energy Agency, they account for 0.3 percent of world CO_2 emissions.
- By the end of the decade, datacenter energy use in some nations might account for 15% to 30% of total domestic electricity demand.

What is Microsoft's plan to cut carbon emission in Finland?

- Microsoft's new initiative will catch the excess heat generated by the new datacentre region and send the clean heat generated by the server cooling process to residences, services, and businesses connected to the district heating system.

- In Finland, district heating is the most widely used heating method. It's a technique for capturing heat in a central area and then distributing it to buildings for residential and commercial heating needs.

Significance of Microsoft's plan:

- According to Microsoft, Finland may meet its CO_2 emission reduction targets by using recycled waste heat in conjunction with other carbon reduction measures.
- The heat recycling system can supply clean heat to households, companies, and public buildings while also lowering CO_2 emissions per year.

Which other countries recycle waste heat from datacentres?

- District heating is widely used in the Nordic and Baltic countries, as well as Russia and China, where winter heat demands are considerable. Cold climates are ideal for datacenters.
- Because they are located in cold locations, they do not require as much cooling in their server rooms. Cold weather is also a benefit, as technology businesses change their focus to providing heat, which isn't in high demand in warmer weather.

Global Experiences:

- In Denmark, Facebook is putting its waste heat to good use by heating surrounding homes.
- Apple is constructing a datacenter in Denmark that will be powered by renewable energy and waste heat to heat surrounding office buildings.
- Since 2013, the fast fashion store H&M has started delivering waste heat to surrounding households in Denmark, and wants to construct a datacenter capable of heating up to 2,500 residences at full load.

> ### Nut Graf
>
> *The waste heat recycling concept developed in the data centre region will be the world's largest waste heat recycling program. The data centre project sits at the crossroads of two major trends: digitalization and energy transition.*

Conservation, environmental pollution and degradation, environmental impact assessment.

10. Hornbill Nest Adoption Program

- » Prelims: Hornbill Nest Adoption Program

Context:

- The Hornbill Nest Adoption Program of Arunachal Pradesh celebrates a decade of successful conservation

The Hornbill Nest Adoption Program

- The Hornbill Nest Adoption Program (HNAP) is a community-based conservation initiative that was started in 2011.

- The HNAP model is unique as it brings together two sets of external protectors to help hornbill parents breed.

- The Hornbill Nest Adoption Program was launched as a partnership with the Ghora-Aabhe Society (a local NGO) and the Arunachal Pradesh Forest Department (PTR management). In 2017, the Pakke Paga Hornbill Festival Committee was also included as a fourth partner.

About Hornbill:

- Hornbills are indicators of the health of a forest.

- They are seed dispersers and rightly called the 'farmers of the forest'.

- Pakke Tiger Reserve and its environs harbour four species: the great hornbill, rufous-necked hornbill, wreathed hornbill and the oriental pied hornbill.

Environmental pollution and degradation

11. Flex Fuel Vehicles

» Prelims: Flex Fuel Vehicles

» Mains: Evaluating the significance of Flex Fuel vehicles in reducing India's dependence on oil imports.

Context:

- Considering the objective to promote the introduction of flex fuel vehicles in India, the Production Linked Incentive Scheme for Automobile and auto components of the Ministry of Heavy Industries decided to incentivise the Auto OEMs (Original Equipment Manufacturers).

What are Flex Fuel Vehicles (FFV)?

- These vehicles are capable of functioning on 100% petrol or 100% bio-ethanol or a combination of both.

- Bio-ethanol contains less energy per litre than petrol but the calorific value of bio-ethanol can be upgraded with advanced technology.

- They have an internal combustion engine that can operate on gasoline or a blend of gasoline and ethanol.

Why is the government promoting FFV?

- FFVs can play a potential role in reducing India's dependence on oil imports by creating fuel substitutes like ethanol, hydrogen and electricity.

- It is also in favour of India's growing commitment towards energy efficiency, security and conservation and its transition to clean energy to achieve the target of net-zero carbon emissions by 2070 as declared at COP 26.

- It was estimated by a report of an expert committee of the Ministry of Petroleum and Natural Gas that by blending 20% of ethanol (E 20) in the vehicles the carbon monoxide emissions were reduced by 50% in two-wheelers and 30% in four-wheelers.
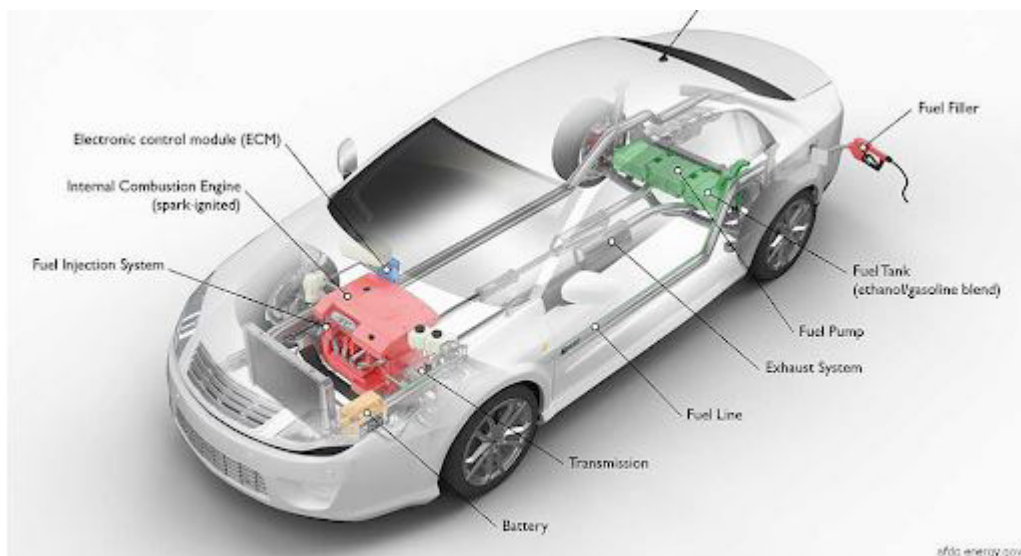
Image Source: theecofinance.com

12. National Dolphin Day

» Prelims: Salient Features of Gangetic River Dolphins, NBWL

Context:

- In order to spread awareness on dolphin conservation, the Standing Committee of the National Board for Wildlife has recommended the celebration of National Dolphin Day.

Details:

- According to the recommendations of the 67th meeting of the Standing Committee of NBWL, every year, on the 5th of October, National Dolphin Day shall be celebrated.

- Dolphins are potential ecological indicators of a healthy aquatic ecosystem and are required to be conserved for the sustenance of other aquatic species.

- Conservation of Dolphins will result in the sustainable existence of livelihood for many individuals who depend on marine ecosystems.

Facts about Dolphins:

- The Government of Uttar Pradesh in collaboration with WWF– India along with the National Mission for Clean Ganga started a campaign called 'My Ganga, My Dolphin' to promote awareness on Dolphin conservation by engaging the local communities and volunteers.

- Uttar Pradesh is the only state that carried out the Dolphin census twice (in 2012 and 2015) to assess the status of the aquatic animal.

- The first Dolphin Census was conducted in the riverine stretch of 2500 km covering rivers like Ganga, Yamuna, Chambal, Geruwa, Ghagra, Ken, Betwa, Surya and Rapti. Ghagra river recorded the maximum number of dolphins. No dolphins were found in Ken and Betwa rivers.

- This census exercise delivered proper data and information on the dolphin population across the state of Uttar Pradesh.

- The Dolphin census is usually carried out by techniques such as the Direct Count Method based on the IUCN survey protocol for studying freshwater cetaceans.

- Gangetic and Indus dolphins are two different species of South Asian river dolphins with conservation status classified as 'Endangered'.

13. National Innovation Conclave on Low Carbon Technologies

» Prelims: Facility for low carbon technology deployment (FLCTD)

» Mains: Significance of energy conservation and the intervening steps taken by the government.

Context:

- The National Conclave on Low Carbon Technologies was organised by the Bureau of Energy Efficiency while commemorating its 20th foundation day.

The Objective of the Conclave:

- The National Conclave on Low Carbon Technologies aimed at promoting innovations in technology to reduce greenhouse gas emissions on a large scale in industrial and commercial sectors along with an emphasis on energy conservation.

About the Conclave:

- The event witnessed the participation of a large number of innovators who put forth their ideas with the intent to create a robust ecosystem of innovation and energy sustainability.

- Facility for Low Carbon Technology Deployment has supported many low carbon technology innovations with the release of a compendium of FLCTD accelerator focusing on the challenges in the field of innovation, financing, commercialization and scaling up of the technologies for a low carbon future.

About FLCTD:

- It was a project launched with an objective to identify innovative energy efficiency and low carbon technology solutions that address the gaps in existing technologies in the Indian industries.

- It is financed by the Global Environment Facility and implemented by the United Nations Industrial Development Organisation in collaboration with the Bureau of Energy Efficiency (BEE).

- Six priority technology areas have been identified by FLCTD for the 'Innovative Challenge' opening avenues for a competitive energy-efficient market.

- The FLCTD accelerator program was initiated to provide training and mentoring support to start-ups who are at the early stage of clean technology development in collaboration with Startup India. It is a four-month program that involves hands-on training and guidance from industry experts and potential innovators.

Key areas of innovation:

- Waste heat recovery
- Space Conditioning

- Pumps
- Pumping systems and Motors
- Industrial lot
- Efficiency and Energy storage

Conservation

14. Sujalam 2.0 Campaign

» Prelims: Facts about Sujalam 2.0 campaign

Context:

- Union Minister of Jal Shakti launched the Sujalam 2.0 campaign for greywater management.

Sujalam Campaign

- SUJALAM is a 100-day campaign by the Ministry of Jal Shakti as part of the 'Azadi Ka Amrit Mahotsav' celebrations to create more and more ODF+ villages by undertaking wastewater management at the village level.

  * ODF – In 2016 a protocol was launched under which "a city/ward is notified as ODF city/ward if, at any point of the day, not a single person is found defecating in the open."

  * ODF+ – a city, ward or village would be declared ODF+ if, "at any point of the day, not a single person is found defecating and/or urinating in the open, and all community and public toilets are functional and well-maintained."

  * ODF++ – "faecal sludge/septage and sewage is safely managed and treated, with no discharging and/or dumping of untreated faecal sludge/septage and sewage in drains, water bodies or open areas."

Sujalam 2.0 Campaign

- The theme for the year 2022 is 'Groundwater: making the invisible visible'.

- The campaign is launched to sustain the achievement made under the Swachh Bharat Mission-Gramin (SBM – G) Phase I and ensure holistic cleanliness in villages by having arrangements for solid and liquid waste management.

- The campaign focuses on the establishment of institutional level greywater management assets in Panchayat Ghars, healthcare facilities, schools, anganwadi centres (AWCs), and other government institutions.

- The creation of individual and community greywater management assets will also be encouraged.

Conservation

15. India's Arctic Policy

» Prelims: India's Arctic Policy

» Mains: Opportunities for India in the Arctic region.

Context:

- India's Arctic Policy has been released by the Ministry of Earth Sciences with the title 'India and the Arctic: Building a partnership for sustainable development' that echoes India's consistent engagement with the Arctic region.

An Overview:

- The Arctic Policy will be essential to expand India's extent of collaboration to work towards the biggest challenges posed by climate change involving multiple stakeholders, academia, the research community, business and industry.

- This policy will be implemented through an action plan along with an effective governance and review procedure that will involve the Inter-Ministerial Empowered Arctic Policy Group.

- The National Centre for Polar and Ocean Research (NCPOR) in Goa which is an autonomous institute under the Ministry of Earth Sciences, is the nodal institution for India's polar research programme to which arctic studies are part.

India and the Arctic region:

- India's engagement with the arctic region dates back to the signing of the Svalbard Treaty, 1920 in Paris.

- Over the progressive pace of time, India has undertaken several scientific research operations in the Arctic region.

- The studies by the Indian scientists include monitoring of arctic glaciers and their comparison with the Himalayan glaciers, arctic oceanography, atmosphere, pollution and microbiology.

- Several institutes and universities in India are involved in Arctic research.

- India is among the 13 nations that occupy an observer status in the Arctic Council. Other observers include France, Germany, the Italian Republic, Japan, Spain, The Netherlands, China, Poland, the Republic of Korea, Switzerland, the Republic of Singapore and the UK.

- India joined the Arctic Council with observer status in the Kiruna Ministerial meeting in 2013.

- India's first multi-sensor moored observatory in Kongsfjorden and the northernmost atmospheric laboratory in Gruve Badet were launched in the arctic region.

- India has successfully completed 13 expeditions to the arctic region until 2022.

India's Arctic Policy: the six pillars

- Strengthening India's scientific research and cooperation
- Climate and environmental protection
- Economic and human development
- Transportation and connectivity
- Governance and international cooperation
- National Capacity building in the Arctic region.

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Extracts of articles and points from "YOJANA" and "KURUKSHETRA"

HEALTH ISSUES

Issues relating to development and management of Social Sector/Services relating to Health

1. **Doctors for rural India**

   » Mains: Shortage of medical facilities in rural India, significance of Licentiate Medical Practitioners.

   The problem of shortage of doctors in rural areas

   - About 600 million people, especially in the rural areas, have very limited or no access to health care facilities in India.

   - The country faces a shortage of about five lakh doctors currently.

   - Extensive violation of norms, failure in reaching the targets, and a state of helplessness have worsened the state of rural health.

   - The issue of lack of doctors for rural areas can be addressed by reintroducing "Licentiate Medical Practitioners".

   Licentiate Medical Practitioners

   - In the 1940s, primary care physicians were trained under short-term courses, and were called Licentiate Medical Practitioners (LMPs).

   - LMPs worked and delivered quality health services in the rural sector.

   - The Bhore Committee (1946) recommended the abolition of LMPs as India produced sufficient MBBS doctors.

   Arguments against LPMs

   - Short-term courses in medicine have been associated with producing "cheaply made, poor quality doctors".

   - By appointing lower tier doctors the people in rural areas would be made to feel like low class citizens.

   Arguments for reintroduction of LMPs

   - The profit-driven, private health-care sector has eroded the efficiency of the public health system in India.

   - A short-term course in medicine will help design a medical curriculum that is more relevant to the country's requirements.

   - The effectiveness of the service would be much more enhanced if the entry requirements focused less on merit and more on an aptitude for medical service and giving preference to applicants from within the community.

   - LMPs can be adequately trained and have a well-defined role in health care.

   - The present MBBS curriculum has a great amount of surplus detail, like forensic medicine, that has little relevance to primary care physicians.

   - LMPs could be appointed in sub-centres where they undertake both clinical and administrative functions. This would also allow easier access to primary and emergency care.

   - Medical officers (MBBS) could be employed in primary health centres (PHC), and the PHCs could deal with cases referred to them by the LMPs and supervise their work.

   Advantages of reintroduction of LMPs

   - As the LMPs work at the grass-root level, a single PHC would be able to handle a bigger population. This allows for allocation of better resources to PHCs.

   - Ancillary responsibilities can be taken off from the burden on MBBS doctors and their skills could be put to better use.

   - The quality of emergency and inpatient attention at the PHC-level could be bettered.

   - Issues of clinical and administrative inability of new MBBS graduates who are appointed as medical officers can be resolved.

   - LMPs could be allowed to take up a postgraduate course and the ones with postgraduate qualifications could be allowed to start their own practice, work in hospitals, and also serve as faculty in medical colleges training LMPs.

   Nut Graf

   As the need for more quality medical facilities is being debated, the key issue of shortage of doctors in rural areas can be addressed by reviving Licentiate Medical Practitioners who can help address the scarcity of trained primary care physicians in rural India.

Issues Relating to Development and Management of Social Sector/Services relating to Health.

2. World Health Organization- Global Centre for Traditional Medicine (WHO GCTM)

» Prelims: WHO GCTM- location

Context:

- The Union Cabinet has approved the establishment of the World Health Organization- Global Centre for Traditional Medicine (WHO GCTM) at Jamnagar in Gujarat.

Details:

- The announcement was made subsequent to the signing of the host country agreement between the Government of India and World Health Organization.

  * The Director General of World Health Organization, had announced the establishment of WHO GCTM on the occasion of fifth Ayurveda Day on 13 November 2020, along with the Indian Prime Minister.

- A Joint Task Force (JTF) is being constituted for coordination, execution and monitoring of activities for the establishment of the Centre. JTF comprises representatives from the Government of India, Permanent Mission of India, Geneva and the World Health Organization.

- The WHO GCTM is to be established under the Ministry of AYUSH (Ayurveda, Yoga, Naturopathy, Unani, Siddha, Sowa-Rigpa and Homoeopathy).

- The WHO GCTM will be the first global centre for traditional medicine

Role of WHO GCTM:

- WHO GCTM will provide leadership on all global health matters related to traditional medicine.

- The WHO-GCTM will identify various challenges faced by the countries in regulating, integrating and further positioning Traditional Medicine in respective countries.

- It will help develop norms, standards and guidelines, tools and methodologies for collecting data, undertaking analytics and assessing impact of the use of traditional medicines. It will work towards the creation of WHO traditional medicine informatics centre through the collaboration of existing traditional medicine data banks, virtual libraries and research institutes.

- The Centre will also assist in developing specific capacity building and training programmes in areas of relevance to the objectives and conduct training either on campus, or web-based, and through partnerships with the WHO Academy and other strategic partners.

- The WHO GCTM will extend support to member countries in shaping various policies related to traditional medicine research, practices and public health.

Significance of WHO GCTM:

- WHO GCTM will help ensure quality, safety, efficacy, accessibility and rational use of traditional medicine by bolstering evidence –based research, training and awareness for Traditional Medicine.

- This will help position AYUSH systems across the globe while also helping develop specific capacity building in the domain of traditional medicine which in turn can ensure access to safe and effective traditional medicine.

  * Traditional medicine is a key pillar of health care delivery systems and could play a crucial role in maintaining good health and well-being of the people.

  * Safe and effective traditional medicine will play a significant role in ensuring all people have access to quality essential health care services and safe, effective and affordable essential medicines.

    » The Sustainable Development Goal-3 envisages ensuring healthy lives and the promotion of well-being of all. Universal health coverage and access to quality health care is a major requisite to reach this goal.

Issues Relating to Development and Management of Social Sector/Services relating to Health.

3. Special bulletin on MMR

» Prelims: MMR- definition; Current trends

» Mains: Initiatives being taken to reduce MMR

Context:

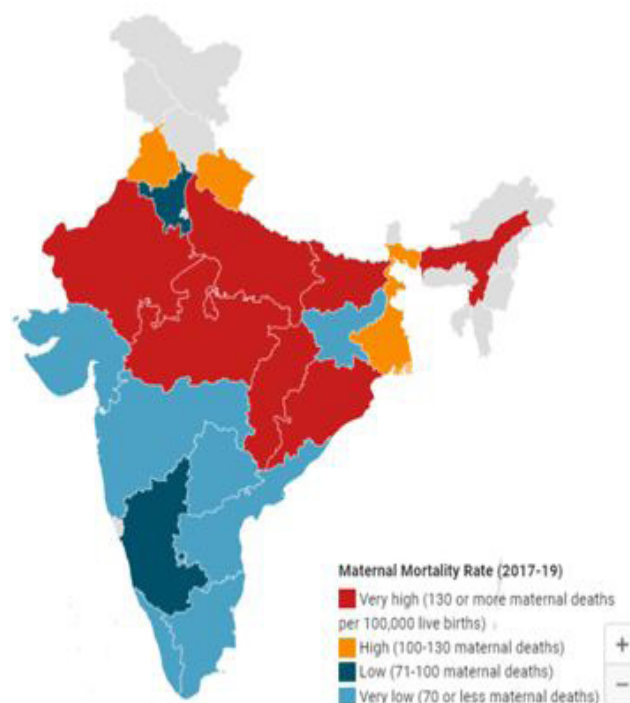- The Registrar General of India has released a special bulletin on MMR in March 2022.

Major observations:

- As per the special bulletin there has been a decline of 10 points in the maternal mortality rate of India. India's maternal mortality ratio (MMR) has improved to 103 in 2017-19, from 113 in 2016-18, marking an 8.8% decline.

- This is in sync with the trend of progressive reduction in the MMR over the years. With this persistent decline, India is on the verge of achieving the National Health Policy (NHP) target of 100/lakh live births by 2020 and certainly on track to achieve the Sustainable Development Goal (SDG) target of 70/ lakh live births by 2030

- Currently seven states have achieved the Sustainable Development Goal (3.1) target. This marks an improvement compared to last survey when only five states had reached the target. Currently these states include Kerala (30), Maharashtra (38), Telangana (56), Tamil Nadu (58), Andhra Pradesh (58), Jharkhand (61), and Gujarat (70).

- Currently there are nine States that have achieved the MMR target set by the National Health Policy. This includes the above seven states along with Karnataka (83) and Haryana (96).

- Despite an improvement in the national average, some states continue to witness high levels of maternal mortality rates.

	Definition	States
Very high maternal mortality	130 or more maternal deaths per 100,000 live births.	Bihar (130), Odisha (136), Rajasthan (141), Chhattisgarh (160), Madhya Pradesh (163), Uttar Pradesh (167) and Assam (205).
High maternal mortality	100-130 maternal deaths per 100,000 live births.	Uttarakhand (101), West Bengal (109) and Punjab (114).
Low maternal mortality:	71-100 maternal deaths per 100,000 live births.	Karnataka (83) and Haryana (96).

- The states of Uttar Pradesh, Rajasthan and Bihar have seen the most drop in MMR in absolute numbers. These states continues to have high level MMRs despite the improvement.

    * Uttar Pradesh reported a decline of 30 points, Rajasthan (23 points) and Bihar (19 points).

- A remarkable fall of more than 15 percent has been observed in the states of Kerala, Maharashtra and Uttar Pradesh.

- The top state with the lowest MMR is Kerala while the state with the highest MMR is Assam.

- Notably states like West Bengal, Haryana, Uttarakhand and Chhattisgarh have recorded an increase in MMR over the last survey in contrast to the national trend.


Maternal Mortality Rate (2017-19)

- Very high (130 or more maternal deaths per 100,000 live births)
- High (100-130 maternal deaths)
- Low (71-100 maternal deaths)
- Very low (70 or less maternal deaths)

Map showing the MMR across the different states

Initiatives:

Anemia Mukt Bharat (AMB):

- Anaemia Mukt Bharat (AMB) strategy was launched in 2018 with the objective of reducing anaemia prevalence among children, adolescents and women in reproductive age group.

- It focusses on six target beneficiary groups, through six interventions and six institutional mechanisms to achieve the envisaged target under the POSHAN Abhiyan.

to any woman and newborn visiting a public health facility in order to end all preventable maternal and newborn deaths and morbidities and provide a positive birthing experience.

- Under the scheme, all pregnant women, newborns and mothers up to 6 months of delivery will be able to avail several free health care services such as four antenatal check-ups and six home-based newborn care visits.
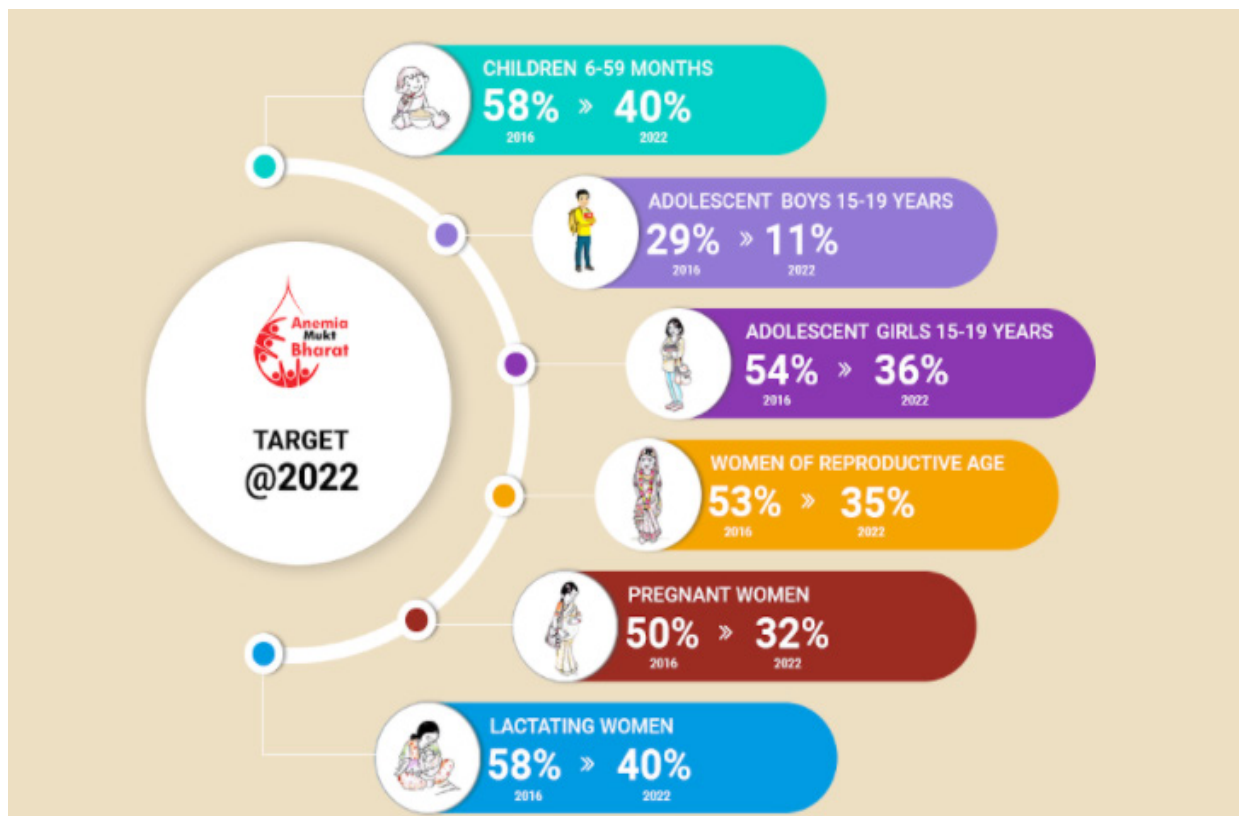
- The 6 interventions include supply of iron and folic acid supplements, deworming, behaviour change communication campaign, testing for anaemia, provision of iron and folic acid fortified foods in government-funded health programmes and addressing of non-nutritional causes of anemia in endemic pockets with special focus on malaria and fluorosis.

Surakshit Matratva Ashwasan (SUMAN):

- The Surakshit Matritva Aashwasan (SUMAN) has been launched by the Ministry of Health and Family Welfare in 2019.

- It aims to provide assured, dignified and respectful delivery of quality healthcare services at no cost and zero tolerance for denial of services

Anmol app:

- It is a multifaceted mobile tablet based android application of Ministry of Health & Family Welfare (MoHFW) for early identification and tracking of the individual beneficiary.

- Application would help to ensure tracking of beneficiary for proper health care and promote family planning methods being adopted by them. System also facilitates to ensure timely delivery of full competent of antenatal, postnatal & delivery services and tracking of children for complete immunization services.

4. What is the NPPA's role in fixing drug prices?

» Prelims: National Pharmaceutical Pricing Authority (NPPA) and National List of Essential Medicines (NLEM).

» Mains: The mechanism of increasing prices of drugs and the way forward.

Context:

- The pharmaceutical companies have been pursuing the Government to extend the annual hike of 10% to scheduled drugs.

Background:

- The prices of drugs and devices will be increased, if the National Pharmaceutical Pricing Authority (NPPA) permits a price hike of over 10% in the drugs and devices listed under the National List of Essential Medicines (NLEM).

- The rise in the prices is triggered by the rise in the Wholesale Price Index (WPI).

National Pharmaceutical Pricing Authority:

- NPPA was established in 1997 as an office under the Ministry of Chemicals and Fertilizers.

- It is responsible for regulating the prices of drugs in the country and ensuring their availability, accessibility and affordability to every citizen of the country.

- Its key function is to implement and enforce the provisions under the Drugs Price Control Order (DPCO), 1995/2013

- The NPPA is also empowered to collect and maintain data on production; exports and imports; market share of individual companies, and the profitability of companies.

National List of Essential Medicines:

- Essential medicines are those that satisfy the priority healthcare needs of the majority of the population.

- The essential medicines list is country specific and addresses the disease burden of the nation and the commonly used medicines at primary, secondary and tertiary healthcare levels.

- The first National List of Essential Medicines of India was prepared and released in 1996.

- The National List of Essential Medicines (NLEM) plays a crucial role in balancing the healthcare delivery system of a country which inter alia includes accessible, affordable quality medicine at all the primary, secondary, tertiary levels of healthcare.

- The medicines mentioned in the NLEM are available at affordable costs and with assured quality.

- The key function of NLEM is to promote rational use of medicines considering the three key factors namely cost, safety and efficacy.

- The NLEM lists the drugs that are used to treat fever, infection, heart disease, hypertension, anaemia, etc. and also includes commonly used medicines like paracetamol and azithromycin

The mechanism of price increase

- The annual hike in the prices of drugs listed in the NLEM is based on the WPI.

- According to the Drugs (Prices) Control Order 2013, the prices of drugs that constitute around 15% of the pharma market which are listed in the NLEM, are allowed an increase by the government as per the WPI.

- The prices of the rest of the drugs in the market are allowed a 10% increase every year in the automatic route.

Nut Graf

As the increase in the prices of crucial life-saving drugs has serious repercussions on the overall health of the society, the Government should look at alternative means such as scaling of domestic production and a shift in the mechanism of price setting which would be beneficial to the pharmaceutical companies.

Issues Relating to Development and Management of Social Sector/Services relating to Health, Education, Human Resources.

5. Changing the jurisprudence of scarcity

» Mains: Challenges in medical education sector in India; Recommendations

Challenges in medical education in India:

- The lack of adequately equipped and staffed medical colleges remains a major concern.

- The available seats for medical education in India continue to remain much lower than the actual demand. As a result the competition for these seats is high. The National Eligibility-cum-Entrance Test draws 16 lakh candidates for 88,000 MBBS seats.

- This has resulted in high levels of stress on the aspirants and has given rise to coaching hubs such as the ones in Kota. The limited access to these coaching hubs remains a concern for the children coming from rural or poor households.

- The plight of the Indian medical students returning from Ukraine have brought to light the severe deficiency in providing for adequate medical education seats in India. Given the lack of adequate seats within India these students are having to go abroad. They are having to

seek unregulated agents to obtain indifferent quality education abroad with uneven chances of fitment into the Indian medical system.

- The provision for reservations has been another hindrance to accessibility of medical education for aspirants competing in the general category. The growing calls for increased reservations could only accentuate this problem further.

Recommendations:

- The article notes that instead of becoming conditioned to the shortages in the medical education sector, with large volumes of students chasing low numbers of seats, there is the need to broaden medical education in India to overcome the state of scarcity.

- The article calls for having a medical education system which is accessible and affordable to all sections of the society and in this direction makes the following recommendations.

Incentivizing private participation:

- There is the urgent need to open up the medical education sector for enhanced investment of private capital and talent.

- Restrictive rules limiting new entrants into the medical education sector should be done away with.

- The government should provide for appropriate tax benefits which will make it viable to start and run new medical colleges.

- The government must allow for a sensible pricing policy realizing that private investments need returns. The government must abstain from unreasonable and unnecessary price restrictions. The article argues that beyond a wholesome regulation, the market forces should be allowed to operate to obtain the benefits of pricing and quality. The government can consider mandating scholarships as the social commitment of the private institution.

Focus on quality education:

- While increasing the number of medical seats available, equal emphasis should also be laid upon mandating quality infrastructure and capable teachers and keeping standards high.

> *Nut Graf*
>
> *The right to health and to a good medical education is part of the right to life, under our expanded conceptualization of Fundamental Rights. Ensuring a medical education system which is accessible and affordable to all sections of the society is thus an imperative for the government.*

Issues relating to development and management of Social Sector/Services relating to Health

6. Dare2eraD TB

» Prelims: Facts about "Dare2eraD TB"

» Mains: Various initiatives by the government aimed at eradicating Tuberculosis in India.

Context:

- On the occasion of World TB Day, data-driven research aimed at eradicating TB called "Dare2eraD TB" has been launched.

Dare2eraD TB

- It is a data-driven research programme launched by the Department of Biotechnology (DBT) under the aegis of the Ministry of Science & Technology.

- "Dare2eraDTB" will be an umbrella TB programme of DBT.

- The programme consists of key initiatives such as;

  * InTGS – Indian Tuberculosis Genomic Surveillance Consortium

  * InTBK Hub – Indian TB Knowledge Hub- Webinar Series

  * Host Directed therapies against TB and developing an evidence-based regimen for treating extra-pulmonary Tuberculosis.

Other key initiatives by DBT against TB

- The Department has partnered with various international organisations for the research on Tuberculosis.

- The Regional Prospective Observational Research in Tuberculosis (RePORT) initiative is a bilateral effort supported by the Indo-US Vaccine Action Programme (VAP), to advance tuberculosis (TB) research in India.

- The Department has initiated a major network programme called "MultiDrug Resistant – TB in North East India: a genomic driven approach" involving 22 institutes from 8 North states and 14 other Institutes.

Issues relating to development and management of Social Sector/Services relating to Health

7. Pradhan Mantri Bhartiya Janaushadhi Pariyojana

» Prelims: Facts about the Yojana

What is PMBJP?

- In 2008, with an objective to make available generic medicines at affordable prices to all, the Department of Pharmaceuticals under the Ministry of Chemicals and Fertilizers launched the "Jan Aushadhi Scheme".

* Generic medicines are unbranded medicines that are equally safe and have the same efficacy as that a branded medicines in terms of their therapeutic value.

* The prices of generic medicines are much cheaper than their branded equivalent.

• To reinvigorate the supply of affordable generic medicines with efficacy and quality equivalent to that of branded drugs, the scheme was revamped as "Pradhan Mantri Bhartiya Jan Aushadhi Yojana" in 2015.

• To provide further momentum to the ongoing scheme, it was again renamed as "Pradhan Mantri Bhartiya Jan Aushadhi Pariyojana" (PMBJP).

PMBJP Features

• Under PMBJP, Pradhan Mantri Bhartiya Janaushadhi Kendras (PMBJK) are set up across the country so as to reduce the out of pocket expenses for health care.

• The Bureau of Pharma PSUs of India (BPPI) under the Department of Pharmaceuticals is involved in coordinating, procuring, supplying and marketing generic medicines through PMBJK.

• The procured generic medicines are sold at 50% to 90% lesser prices as compared to the market prices of branded medicines.

• All drugs procured under this scheme are tested for quality assurance at NABL (National Accreditation Board Laboratories) accredited laboratories and is compliant with WHO GMP (World Health Organisation's Good Manufacturing Practices) benchmarks. Government grants of up to 2.5 Lakhs are provided for setting up of PMBJKs.

• They can be set up by doctors, pharmacists, entrepreneurs, Self Help Groups, NGOs, Charitable Societies, etc. at any suitable place or outside the hospital premises.

• The railway ministry has given in-principle approval to opening up of Jan Aushadi Kendras at railway stations and other railway establishments under PMBJP. This is a significant move, as the access to generic medicines on railway stations would boost the accessibility, affordability of essential medicines and improve the convenience for the customers.

Jan Aushadi Sugam Application

• The PMBJP launched a mobile application in order to help people locate the Janaushadhi Kendras in the areas around them.

• Since smartphones are seen accessible to all the groups of the society, the PMBJP aims to promote their affordable healthcare scheme through available technology. Affordable healthcare seeker can easily find these PMBJK and get generic medicines at a substantially low cost compared to that of the branded OTC (over-the-counter) ones.

Issues relating to development and management of Social Sector/Services relating to Health

8. Draft National Medical Devices Policy 2022

» Prelims: About the Draft National Medical Devices Policy

» Mains: Regulations pertaining to medical devices in India and their significance.

Context:

• The Department of Pharmaceuticals, Ministry of Chemicals and Fertilisers has released the Draft National Medical Devices Policy 2022 in order to establish a holistic policy to speed up growth in the medical devices sector in India.

The need to promote the medical devices sector –

• Medical devices sector is considered as the sunrise sector which is also popular as the MedTech sector.

• It is estimated that in the upcoming days, the medical device sector will witness a huge growth with great market potential offering several employment opportunities in the field of pharmaceuticals.

• The expected growth is 50 billion USD by 2025.

• Medical devices sector is an integral part of the Indian healthcare system and plays an important role in prevention, diagnosis, treatment and management of all medical conditions like diabetes, illness and disabilities.

Medical devices Sector in India:

• This sector has remained largely unregulated for a long period till the Medical Devices Rules, 2017 were framed by CDSCO for the comprehensive regulation of Medical Device in a phased manner with respect to quality, safety and efficacy under the Drugs and Cosmetics Act, 1940.

• There are multiple products that are categorised under Medical Devices and they include:

* Electronics equipment

* Implants

* Consumables and disposables

* IVD (In vitro diagnostics) reagents

* Surgical instruments

• The market for medical devices in India has a significant presence of multinational companies with about 80% of the sales by value generated from imported medical devices.

• The importance of this sector gathered momentum during the pandemic and India extended its support to the global battle against COVID-19 through production of medical devices & diagnostic kits, ventilators and so on.

- The government has taken active steps to promote the domestic manufacturing of medical devices by adding the PLI scheme with the medical devices sector and with the promotion of Medical Devices Parks.

The policy highlights:

National Medical Devices Policy 2022 intends to:

- Create regulatory framework in order to optimise regulatory processes and multiplicity of agencies for enhanced Ease of doing Business in alignment with global standards.

- Ensure quality standards and the safety of the devices.

- Build competitiveness through fiscal and financial support

- Provide infrastructure development for domestic industries of medical devices to flourish.

- Facilitate research and development along with human resource development.

- Creations of awareness and brand positioning.

SOCIAL ISSUES

Role of Women and Women's organisation

1. Nari Shakti Puraskar

» Prelims: About Nari Shakti Puraskar

Context:

- The President of India presented the 'Nari Shakti Puraskar' on the occasion of International Women's Day.

About the award:

- The 'Nari Shakti Puraskar' has been conferred to 29 outstanding and exceptional women achievers for their praiseworthy contributions towards women empowerment, especially towards the development and betterment of women from marginalised and vulnerable sections of society.
- This award signifies the efforts of the government to acknowledge the social welfare initiatives by the women and appreciate the leadership roles played by these women. This will add to the continuity of the good work that is existing.
- This award is the highest civilian honour for women in India that is distributed annually by the Ministry of Women and Child Development.
- The award is conferred to either individual women or to institutions that work towards women empowerment.
- It was first introduced as the Stree Shakti Puraskar in 1999 and was renamed as 'Nari Shakti Puraskar' in 2015.
- The winners hailed from diverse fields that include entrepreneurship, agriculture, tribal rights activism, arts and crafts, science and technology, medicine, literature, merchant navy and so on.
- These awards recognise the equal stand of women across the country for the advancement and welfare of society.

Social Empowerment

2. Special Entrepreneurship Promotion Drive for Women – SAMARTH

» Prelims: Special Entrepreneurship Promotion Drive for Women – "SAMARTH"

Context:

- Union Minister for MSME launched a Special Entrepreneurship Promotion Drive for Women – "SAMARTH".

Details:

- A Special Entrepreneurship Promotion Drive for Women -"SAMARTH" is being implemented by the Ministry of MSME.
- It aims to provide women with an opportunity to be self-reliant and independent by undertaking self-employment opportunities.
- The Ministry of MSME envisions greater participation of women in the MSME sector and therefore will work hard to promote entrepreneurship.
- Under the Samarth initiative of the Ministry, the following benefits will be available to aspiring and existing women entrepreneurs:
  * 20% Seats in free Skill Development Programs organized under skill development schemes of the Ministry will be allocated for Women. More than 7500 women will be benefited.
  * 20% of MSME Business Delegations sent to domestic & international exhibitions under the schemes for Marketing Assistance implemented by the Ministry will be dedicated to women-owned MSMEs.
  * 20% Discount on annual processing fee on NSIC's Commercial Schemes.
  * Special Drive for registration of women-owned MSMEs under Udyam Registration.

Role of women and associated issues

3. Stree Manoraksha Project

» Prelims: About Stree Manoraksha Project

» Mains: Initiatives to protect the interests of women

Context:

- The Stree Manoraksha Project was launched at an event organised by the Ministry of Women and Child Development in collaboration with NIMHANS (National Institute of Mental Health and Neurosciences) during the celebration of International Women's Day week.

About the Project:

- The project aimed at extending mental health training to many One Stop Centre functionaries across the country.
- The event witnessed the participation of representatives from the government, NIMHANS, NALSA and the representatives of One Stop Centre.

- The project is intended to give life and dignity to women and break the cycle of violence by educating women and spreading awareness among them.

- Besides, the Ministry of Women and Child Development is also putting efforts to establish 'Naari Adalat' with the help of NALSA in order to deliver speedy justice to the victims.

- The initiative will also emphasise the security, safety and mental wellbeing of women.

- In collaboration with NALSA, the government implements the 'Nyaya Bandhu' programme to link the persons eligible to avail of free legal aid under section 12 of the Legal Services Authorities Act, 1987 with lawyers.

- Additionally, facilities of tele-law programmes provide free legal advice to the public including persons entitled to free legal aid.

Urbanization, their problems and their remedies

4. India Water Pitch Pilot Scale Start-up Challenge

» Prelims: About India Water Pitch Pilot Scale Start-up Challenge, AMRUT 2.0

Context:

- The Ministry of Housing and Urban Affairs has launched the Water Pitch Pilot Scale Start-up Challenge under the aegis of its Atal Mission for Rejuvenation and Urban Transformation (AMRUT) 2.0.

About the Water Pitch Pilot Scale Start-up Challenge:

- This programme is in line with the Technology Sub-mission to engage startups as "Technology Partner" that aims to strengthen the start-ups in the water or used-water sector.

- The idea behind this initiative is to evolve through innovation and design that will result in sustainable economic growth along with the generation of employment opportunities.

- Under the initiative, 100 start-ups will be provided Rs. 20 lakhs as funding support from MoHUA as well as guidance.

- A networking platform will be offered for startups, young innovators, industry partners and incubators.

Importance of the Initiative:

- Encouraging the startups in the water sector are imperative for the proper implementation of government programmes promoting the ideas of AMRUT 2.0.

- AMRUT 2.0 is a transformative scheme of the MoHUA that intends to ensure water security in the country. This scheme runs through the focus areas that include reducing transportation cost of water, reducing groundwater contamination and increasing water utilization capacity.

- Therefore, the Start-up Challenge will add on to contribute to the causes of water security and conservation by engaging the various stakeholders involved in water management.

AMRUT 2.0

Total incentive allocation: ₹2.77 lakh cr | Provide household tap connections in all 4,378 statutory towns

Will target universal coverage of water supply

100% coverage of household sewerage/septage mgmt in 500 AMRUT cities

Swachh Bharat Mission (Urban)

Financial outlay till 2025-26: ₹1.41 lakh cr

Will target complete elimination of open defecation

Eradication of hazardous entry into sewers, septic tanks

Ensure untreated wastewater does not pollute water bodies

On Farm Front

Fixed subsidy on DAP raised to ₹1,650 per bag (from ₹1,200)

CCEA also approves inclusion of potash derived from molasses

Role of women and women's organization

5. Women Transforming India Awards

» Prelims: Women Entrepreneurship Platform (WEP) and Women Transforming India Awards (WTI)

Context:

- NITI Aayog's Women Entrepreneurship Platform (WEP) is organising the fifth edition of the Women Transforming India Awards (WTI)

Women Entrepreneurship Platform (WEP)

- Women Entrepreneurship Platform (WEP) is a portal that aims to catalyse the entrepreneurial ecosystem for women and address information asymmetry.

- Its objective is to build a vibrant ecosystem for women-led enterprises.

- The platform also strengthens the industry linkages and spreads awareness about the existing programmes and services.

- About 900 women entrepreneurs have been benefited through the 77 programmes hosted on the platform.

- The platform also played a key role during the Covid pandemic by conducting webinars to assist businesses of women entrepreneurs like the "Masking It Up campaign", whereby support was extended to women-led small businesses in India that were impacted due to the pandemic.

Women Transforming India Awards (WTI)

- Women Transforming India Awards is an annual initiative of NITI Aayog that highlights the commendable and ground-breaking endeavours of India's women leaders and change-makers.

- As part of the Azadi ka Amrit Mahotsav to celebrate 75 years of India's independence, the WTI Awards will be conferred to 75 women achievers to celebrate their contribution towards a 'Sashakt Aur Samarth Bharat'.

- The awards will be conferred to women based on their contribution in various fields such as;

  * Public and Community Service
  * Manufacturing Sector
  * Non-manufacturing Sector
  * Financial Products enabling Economic Growth
  * Climate Action
  * Promote Art, Culture and Handicrafts
  * Digital Innovation

Urbanization, their problems and their remedies

6. **Affordable Rental Housing Complexes (ARHCs)**

   » Prelims: Affordable Rental Housing Complexes (ARHCs)

Context:

- The Ministry of Housing and Urban Affairs (MoHUA) has launched Affordable Rental Housing Complexes (ARHCs) to provide a dignified living to urban migrants/poor near their workplaces.

Affordable Rental Housing Complexes (ARHCs):

- Affordable Rental Housing Complexes (ARHCs) is a Sub-scheme under Pradhan Mantri Awas Yojana-Urban (PMAY-U).

- Aims and Objectives:

  * To provide affordable rental housing to urban migrants/ poor, close to their workplace.
  * To create a conducive ecosystem for Public/ Private Entities to leverage investment in rental housing

- Beneficiaries for ARHCs: Varied groups of urban migrants/ poor from EWS/ LIG categories including industrial & construction workers, migrants working with market/ trade associations, educational/ health institutions, hospitality sector, long-term tourists/ visitors, students etc.

Role of Women

7. **Working women too, with a dream of good childcare Category**

   » Prelims: ICDS, PMMVY, NFSA

   » Mains: Challenges faced by the informal women workers in India and measures to address those challenges

Context:

International Women's Day:

- International Women's Day is celebrated on March 8, all over the world. The day commemorates the achievements of women and their existence in general.

- The theme for International Women's Day 2022 is 'gender equality today for a sustainable tomorrow'.

- The United Nations looks forward to highlighting the contribution of women and girls around the world who are volunteering in promoting their communities or working on climate change adaptation, mitigation, and in general working in building a more sustainable future for everyone.

Gender equality and Informal female workforce:

- India still has a long way to bring gender equality for India's female informal workforce. A study by the International Labour Organization (ILO) 2018 concluded that in India, more than 95 percent of India's working women are informal workers who work in labour-intensive, low-paying, highly precarious jobs/conditions, and with no social protection.

- According to a bulletin published by the World Health Organization (WHO), "women's informal work is central to the feminization of poverty".

Benefits provided to the female workforce in India:

- Paid Maternity leave of 26 weeks.

- An option to work from home after 26 weeks of maternity leave on mutual agreement with the employer.

- Mandatory crèche facility for any establishment employing 50 or more than 50 women employees.

Challenges:

- The above-mentioned benefits are mostly availed by the formal female workforce that constitutes less than 5 percent of the total female workforce.

- According to the study by ILO in 2016 lack of adequate childcare services lead to:
    * Women leaving the workforce.
    * Earnings come to an end.
    * Significant economic and health risks.

- These challenges have not been addressed adequately in India and it affects the informal women workers to a great extent.

Measures to overcome the challenges:

- Following measures can be taken to enable women to get involved in more productive paid work and improve their maternal and childcare health:

Expansion of ICDS:

- The Integrated Child Development Services (ICDS) is a scheme that provides for food, pre-school and primary education, healthcare, health check-up, immunization, and referral facilities for children under the age of 6 as well. The scheme is also applicable for lactating women and pregnant women.

- Following are the primary objectives of the Anganwadi centers under the ICDS:
    * To provide maternal and child nutritional security,
    * To provide a clean and safe environment,
    * To provide early childhood education hence, enabling the women to re-join the work after childbirth.

Revitalize the Creche Scheme:

- There are certain provisions for working women under the National Creche Scheme. Following measures will help:
    * Public Creches:
        » Public creches can be operated near the worksites such as markets, industrial areas, etc. This will enable timely breastfeeding, and handling any kind of emergency.
        » The Self Employed Women's Association (SEWA) has tested this model in some cities.

PMMVY:

- No maternal benefits were provided to the informal women workers until the introduction of the National Food Security Act (NFSA) that mandate a cash transfer of Rs. 6,000 to pregnant and lactating mothers. The Pradhan Mantri Matru Vandana Yojana covered up for this deficiency.

- States such as Tamil Nadu (Dr. Muthulakshmi Maternity Benefit Scheme), Rajasthan (Indira Gandhi Maternity Nutrition Scheme), Odisha (Mamta Scheme), Gujarat (Kasturba Poshan Sahay Yojana), and Chhattisgarh (Kaushalya Maternity Scheme) provide additional benefits.

- Universal and unconditional maternity entitlements of at least six months of the minimum wages for pregnant women and lactating mothers needs to be implemented.

Way Forward:

- Lack of access to affordable and quality child healthcare services and maternity benefits put a great burden on the informal women workforce that increases the gender and class inequalities.

- Appropriate measures should be taken and the idea of affordable and quality child care infrastructure as an employment linked benefit and as a public good should be considered.

> ### Nut Graf:
> Unless affordable and quality childcare infrastructure and maternity benefits are provided and made accessible to the informal women workforce, the burden on women working in the informal sector would only increase further aggravating gender and class inequalities in society.

Role of Women

8. Reaping the potential of the female workforce

- » Prelims: Demographic dividend, Female Labour Force Participation Rate
- » Mains: Employment opportunities and challenges for women in India, Women in Gig Economy.

Background:

- A lot of new employment opportunities have emerged for women in the gig, platform, and care economy.

- Digital and smartphone technologies and the increased need for personal care have created a lot of employment opportunities, especially for women.

- The gig economy provides flexibility and freelancing jobs.

Femal Labour Force Participation Rate:

- The female labour force participation rate (FLFP) of India is the lowest among the BRICS countries and is also lower in comparison to some neighbouring countries in South Asia such as Sri Lanka and Bangladesh.
    * The FLFP declined from 32 percent working or looking for a job in 2005 to 21 percent in 2019.

- It is necessary to increase the FLFP not only to achieve economic growth but also to promote inclusive growth and achieve sustainable development goals.

- India has the youngest population in the world with a median age of approximately 29 in the year 2020. Women and girls constitute the major part of the demographic dividend. But, sometimes due to certain economic and social factors, they become unable to stay employed or take up employment opportunities. This has been a major challenge for the labour market and the Indian economy.

- China, South Korea, Taiwan, Singapore, etc. are some of the countries that represent a very good example of how the demographic dividend can be used to achieve faster economic growth.

Sectors with Potential:

Health care sector and Education Sector:

- An estimate of the United Nations shows that women contribute to a major part of the healthcare workers and more than 80 percent of the nurses and midwives belong to the female workforce.

- Similarly, women also constitute a majority of the workforce in the education sector in India, especially in the primary education sector and early childhood care.

- Investment in better health and personal care facilities will not only improve the well beings of the Indian people but also result in more employment opportunities for women. An ILO report suggests that investment in the care economy has the potential to generate a total of 69 million jobs by 2030 in India.

The gig economy:

- The gig economy is based on flexible, temporary, or freelance jobs, often involving connecting with clients or customers through an online platform.

- The gig economy can benefit workers, businesses, and consumers by making work more adaptable to the needs of the demand for flexible lifestyles.

- India has emerged as the largest country for gig and platform workers. According to the survey of ILO (2021), job flexibility, and work-from-home jobs are very important for women and they appreciate the income-generating potential of the gig economy.

Digital Platforms:

- Digital platforms enable men or women to work from anywhere in the world.

- There is a limitation of access to the smartphones and internet in remote work. Women have lower access to the internet and smartphones than men.

  * According to the GSMA Mobile Gender Gap Report, only 25% of women owned smartphones as compared to 41% of men in India in 2020.

- If this gap is reduced, then this move will boost the employment opportunities for women in the digital platforms as well as in the gig economy.

Measures to be taken:

- There is a need for concentrated efforts and targeted strategies to enable women to avail the new opportunities provided by the labour market.

- Access to education, skill development, and, digital technology will help the economy in realizing the true potential of the female workforce.

Education:

- Higher education is very important to improve the employability of women. Motivation through incentives such as scholarships, transport & hostel facilities, etc. should be provided to the women and their families so that they can take up higher education.

Skill Development:

- Employable skills are important to avail the employment opportunities in the new emerging sectors.

- Skill training of women in job roles aligned to the gig, platform, and care sectors as well as other emerging sectors such as those covered under the Production-Linked Incentive Scheme needs to be encouraged.

- Online skill training should also be provided to those women who have constraints in physical mobility such as social norms, domestic responsibilities, concerns over safety, etc.

- Appropriate training programs should be there so that women can take up new opportunities.

Holistic approach:

- A holistic approach is required to reap the benefits of the FLFP. Constant dialogue and engagement with the States on action strategies will be required. Inter-ministerial coordination is required.

- Governments, skill training partners, private firms, corporates, and industry associations as well as civil society organizations all need to come together to create enabling measures for women.

Policies:

- Policies that enable the expansion of care services along with the gig and platform sector should be implemented.

- These policies will help in strengthening the aggregate demand while simultaneously improving long-term economic growth, gender equality, and societal well-being.

> ### *Nut Graf:*
>
> *Unless effective policies are implemented to realize the true potential of FLFP in India, the opportunities and benefits certain sectors such as care services, gig & platform, education, etc. can provide to women would not be realized.*

EDUCATION

1. **Foundational Learning Study**

   » Prelims: Foundational Learning Study

   Context:

   - The Ministry of Education will be conducting a 'Foundational Learning Study' to understand the level of learning of students at the end of Grade 3.

   Foundational Learning Study

   - The Study will be conducted by the NCERT in all States and UTs.

   - Nearly 10000 schools and 1 lakh students will be participating in the study.

   - It is the first of its kind study in the world that aims to set benchmarks for reading with comprehension in 22 Indian languages.

   - Objectives:

     * To assess the foundational learning levels of grade 3 students and establish a baseline for the NIPUN Bharat mission.

     * To establish benchmarks in fluency and comprehension skills in each of the languages.

     * To provide the data for SDG 4.1.1. (Covering aspects of foundational literacy and numeracy)

GOVERNANCE

Important Aspects of Governance

1. Unreformable criminal justice

> » Mains: Concerns in Indian criminal justice system

Context:

- Aiming to make comprehensive changes in criminal laws, the government has initiated the process of amendment to laws such as Indian Penal Code, the Code of Criminal Procedure and the Indian Evidence Act in consultation with all stakeholders.

Background:

Criminal Justice System:

- Criminal Justice System refers to the agencies of government charged with enforcing law, adjudicating crime, and correcting criminal conduct.

- The legal framework for Criminal Jurisprudence in India includes the Indian Penal Code and Code of Criminal Procedure.

Concerns/challenges in India's criminal justice system:

Large number of pending cases:

- There are more than 4.4 crore cases pending before the judiciary including the Supreme Court, High Courts and district courts.

- The large pendency is contributing to large number of undertrial prisoners which is consequently leading to human rights violations of the undertrials and convicts.

Inaccessibility of justice:

- The inordinate emphasis on institution building rather than capacity building of the judiciary has led to a situation where the justice mechanisms have become inaccessible to the poor and marginalised classes of citizens.

Police excesses:

- The abuse of power by the police remains a major concern.

- There are several Supreme Court and high court cases which have revealed how investigations were pursued in order to frame innocent persons or subject them to harassment.

Excessive stress on crime prevention:

- The Indian criminal system sets itself the utopian goal of achieving a hundred per cent rate of success in crime prevention. This is an unattainable ideal.

- Initiatives such as community policing mechanisms and situational crime prevention have been ineffective. Also the excessive stress on crime control seems to be promoting abuse of power by the police.

Continued reliance on custodial punishments:

- Despite several research studies showing that punishment has little impact on lowering crime rates, custodial punishment remains the main aspect of criminal justice system in India. This is leading to the problem of overcrowding of prisons.

- Diversionary principles in the treatment of offenders are yet to materialise despite several Law Commissions and committees having recommended non-custodial measures of punishment of offenders.

Lack of data:

- There continues to be the lack of reliable state-sponsored data collection, maintenance and analysis mechanisms which can help in evidence based policy making in the realm of criminal justice reforms.

  * Criminal justice system reforms broadly comprises three sets of reforms viz. Judicial reforms, Prison reforms, Police reforms.

Recommendations:

Accepting issues:

- While taking measures to reform criminal laws and criminal justice, the existing challenges in criminal justice system need to be acknowledged first. Accepting and acknowledging the problems will have a favourable impact on the way we plan our institutional reforms and responses.

  * Acknowledging the inaccessibility issue being faced by the poor and marginalized sections of the society will lead to measures being taken to empower such sections to tap into the criminal justice system.

  * Acknowledging the limitations of mere ethical obligations on police officers to limit their misuse or abuse of power will lead to measures like the adoption of measures like independent investigative procedures and stern punitive sanctions against errant police officers.

  * Accepting the pendency issue in the criminal justice system may force us to reconsider the tendency to over-criminalise conduct.

Holistic reforms:

- There is the need for holistic reforms in our criminal justice system.
- Addressing the existing challenges in the system requires concurrent reforms at the institutional, social and individual levels.

> *Nut Graf:*
>
> *India's criminal justice system is plagued by several challenges. Any attempt to reform it must be based on the acknowledgement of these existing challenges. Also there is the need for holistic reforms in the criminal justice system with concurrent reforms at the institutional, social and individual levels to address these challenges.*

Schemes/Programmes

2. **Villages along China border to open for tourism**

   » Prelims: Vibrant Village programme

   Context:

   - The Union government plans to open the villages along the Chinese border for tourists under the Vibrant Village programme.

   Vibrant Village programme:

   - The Vibrant Village programme was announced in the Union Budget 2022-23.
   - The concept of the Vibrant villages programme (VVP) is to improve the living conditions for the people living close to the Line of Actual Control (LAC).

     * LAC is Line of Actual Control is the borderline between China and India in the western sector of the borderland between India's Ladakh and China.

   Significance of Vibrant Village programme:

   - The VVP initiative intends to develop a strategy for improving the infrastructure of the communities at LAC and establishing road connections.
   - As part of the programme, residential and tourism centers will be created. It will also make it easier to create decentralized renewable energy sources and improve road connections.
   - Aside from that, direct access to Doordarshan and educational channels would be available.

e-governance – applications

3. **National eVidhan Application (NeVA)**

   » Prelims: NeVA, Artificial Intelligence, IoT

   Context:

   - There was a discussion on the National eVidhan Application in the Parliament.

Salient Features of NeVA:

- It is a mission mode project for the digitalisation of the legislative houses with the Ministry of Parliamentary Affairs as the nodal ministry for its implementation.
- It involves a workflow system deployed on NIC (National Informatics Centre) cloud, MeghRaj which enables the Chair of the house to conduct the proceedings of the house smoothly, assisting the members to perform their duties efficiently and to conduct the legislative business of the house in a paperless manner.
- NeVA offers a user friendly Mobile App which is available on android as well as iOS. With this, information on the conduct of legislative business has become accessible anytime and anywhere to everyone.
- It is also in alignment with the concept of One Nation One Application.

Implementation

- e-Vidhan is a Project included in Digital India Programme and Ministry of Parliamentary Affairs (MoPA) is the 'Nodal Ministry' for its implementation
- The funding for e-Vidhan is provided by the MoPA and technical support by Ministry of Electronics and Information Technology (MeitY).

  * NeVA is on the pattern of Central Sponsored Scheme i.e. 60:40; and 90:10 for North East & hilly States and 100% for UTs.

- In order to promote the rolling out NeVA, the MoPA has consulted all State Governments.

Significance

- NeVA aims to bring all the legislatures of the country together, in one platform thereby creating a massive data depository without having the complexity of multiple applications
- NeVA is not only bringing greater synergy, coordination, transparency and accountability between the Legislature and the executive in a State, but also across the States.

Issues relating to Poverty and Hunger

4. **India's food response as 'Vasudhaiva Kutumbakam'**

   » Prelims: World Food Programme; Statistics related to India's food production

   » Mains: Factors driving global hunger; India's food aid programme and its significance

   India's progress towards food security:

   - India has made tremendous progress towards food security over the years. From being a food deficit nation dependant on foreign imports to

achieving food sufficiency and also becoming a major food aid donor and commercial exporters of food grains.

Food production:

- India has made notable progress in food production over the years. In 2020, India produced over 300 million tonnes of cereals.

- These record harvests over the last few years can be attributed to several enabling policies in the realm of land reforms, public investments, institutional infrastructure, new regulatory systems, intervention in agri markets and prices and agri research.

- In 2021, India exported a record 20 million tonnes of rice and wheat.

Safety nets:

- India has a robust public procurement and buffer stock policy. Thanks to the record production in 2021, India has built up a food stock of 100 million tonnes.

- Schemes like the Targeted Public Distribution System (TPDS), the Mid-Day meals (MDM), and the Integrated Child Development Services (ICDS) based on the India's National Food Security Act (NFSA) 2013 has helped create a food safety net for the vulnerable sections. This food safety net collectively reaches over a billion people in India.

- Vulnerable and marginalised families in India continued to receive food grains through the TPDS during the COVID-19 pandemic. Additionally the Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY) introduced in 2020 provided relief to 800 million beneficiaries covered under the NFSA from COVID-19 induced economic hardships.

Global Hunger:

- In 2019, 650 million people around the world suffered from chronic hunger.

- Global hunger is increasing driven by the climate crisis, the COVID-19 pandemic, conflicts, poverty, and inequality.

    * For the world's hungry and undernourished people, climate change is an increasingly relevant threat multiplier. A 2021 report from the Food and Agriculture Organization connects global warming — in particular, more frequent and intense weather events such as storms, floods and droughts — to increased food insecurity.

    * The COVID-19 pandemic has resulted in almost doubling of the number of people on the brink of starvation.

    * The crisis in Afghanistan and the ongoing war in Ukraine will only push a greater number into chronic hunger. The unfolding Ukraine crisis is contributing to high rates of inflation driving food and fuel prices upwards. These higher prices will only add to the burden of the poor and marginalized families and hamper their access to nutrition.

    * Many people around the world are too poor to either buy food or to access the resources they need to grow, harvest and store their food. This is the primary reason why world hunger is still a problem.

- The global hunger problem is leading to a high burden of malnutrition. Around 150 million children are stunted and 50 million wasted. Almost 50% of children and two billion adults suffer from micronutrient deficiencies.

- Apart from leading to malnutrition, hunger also results in creating humanitarian crisis. Hunger creates a cycle that people can't escape from. It causes individuals to be less productive and more prone to disease, which in turn makes them less able to improve their livelihoods or earn a better income.

India's food aid programmes:

- India has recently committed 50,000 Metric Tonnes (MT) of food assistance to Afghanistan in the form of wheat. India is co-ordinating this food assistance through the United Nations Food Programme.

    * Over 22.8 million people accounting for nearly half of Afghanistan population are projected to be acutely food insecure in 2022.

- India has also extended over a million metric tonnes in the past, including 75,000 metric tonnes last year in partnership with the WFP.

- In the past two years, India has provided food aid to several countries in Africa (Zimbabwe) and the Middle East/West Asia (Yemen) to overcome natural calamities and the COVID-19 pandemic.

- India's action in the domain of food assistance is based on the concept of Vasudhaiva Kutumbakam- humanitarian outlook which sees the world as one family. This concept is relevant not just for global peace, cooperation, environment protection but also for humanitarian response including rising global hunger and leaving no one behind.

Significance of humanitarian food assistance:

- Humanitarian food assistance and partnerships in ensuring nutritional security will contribute towards global peace.

    * Research undertaken by the Stockholm International Peace Research Institute (SIPRI) notes food assistance programmes contributing to creating conditions for peace by bolstering social cohesion, strengthening the link between citizen and state, and resolving grievances within and between communities.

* The Nobel Peace Prize to the World Food Programme in 2020 cited the WFP's role and the importance of access to food in maintaining peace.

Way forward:

- India while addressing domestic nutritional security must also take up more responsibility in delivering the goal of Zero global Hunger. In this direction India should build a robust partnership with the World Food Programme to contribute to addressing food emergencies

> ### *Nut Graf:*
>
> *Given the linkage between global hunger and global peace and development, all countries should work towards addressing the global hunger challenge. This requires both humanitarian food assistance in the short run and the creation of food safety nets and resilient livelihoods in the long run.*

GEOGRAPHY

Places in news

1. **Deocha Pachami coal block**

   » Prelims: Deocha Pachami coal block

   Context

   • The Bengal government project in Deocha Pachami coal block is facing protests over land acquisition.

   Details:

   • The West Bengal State government is planning to start mining at the Deocha Pachami coal block. It is considered to be the largest coal block in the country.

   Issue:

   • Locals, mostly Santhal tribals, have close affinity with the land, with forests and rely on it for their needs.

   • Experts, environmentalists and activists have raised a host of issues concerning the project and the pitfalls of going ahead with plans for open cast mining of coal at a time when there are calls to cut back on fossil fuel to tackle global warming.

Places in news

2. **Para states**

   » Prelims: Abkhazia, Transnistria, South Ossetia, Donestk and Luhansk region.

   Context

   • Amid the ongoing Russia-Ukraine conflict and the questions over the status of the Donbas Republics of Donestk and Luhansk, some sections have suggested the de facto states model followed for Abkhazia, Transnistria and South Ossetia as a possible way out for the Russia-Ukraine conflict.

   Para states:

   • Abkhazia, Transnistria and South Ossetia follow a de facto state model. These territories have internal but not external sovereignty, i.e., they are not de jure states and are not recognised by the global community.

     * South Ossetia and Abkhazia broke away from Georgia. Transnistria broke away from Moldova.

     * Abkhazia and South Ossetia are recognised by Russia and some of its allies. Transnistria, however, is not recognised as independent even by Russia.

   • Though all three territories have Russia as their patron state, the three para states have their own governments, parliaments, armed forces, constitutions, flags, anthems, etc.

Important Geophysical Phenomena

3. **Hailstrom in Rajasthan**

   » Prelims: Western disturbances

   Western disturbance:

   • Western disturbance is the extratropical storm originating in the Mediterranean region that brings winter rain to the northern parts of the Indian subcontinent. It is associated with rainfall, snowfall and fog in northern India.

     * It travels from the "western" to the eastern direction and hence the name western.

     * "Extra-tropical" means outside the tropics. As the Western Disturbance originates outside the tropical region, the word "extra-tropical" has been associated with them.

   Context

   • The standing rabi crops of wheat, fennel, barley, mustard and cumin, were affected by untimely rains and hailstorm caused by western disturbance in Ajmer, Jodhpur, Kota and Udaipur divisions of Rajasthan.

Distribution of key natural resources across the world including the Indian sub-continent

4. **International Geological Congress (IGC)**

   » Prelims: About the IGC

   » Mains: India's role in the development of earth sciences for a sustainable future.

   Context

   • The 36th International Geological Congress will be hosted by India in New Delhi on a virtual platform.

Image Source: Justicemirror.com

About the IGC:

- The IGC is a joint effort of the Ministry of Mines, Ministry of Earth Sciences, Indian National Science Academy and the science academies of Bangladesh, Nepal and Sri Lanka.

- It is described as the Olympics of Geosciences which is organised once every four years.

- The Congress operates under the supervision of the International Union of Geological Sciences (IUGS) which is the scientific sponsor of the International Geological Congress.

- This event attracts participants and delegates across the globe.

- The IGC creates a unique platform for knowledge exchange in the field of geosciences and professional networking.

- The focus areas of the Congress will include first-hand information on the latest technologies in mining, mineral exploration and management of water, mineral resources and the environment.

- It will facilitate the increased academic production and opportunities for capacity building in the geoscientific streams.

- In the present era, there is a huge demand for sustainability and platforms like the IGC will ensure a futuristic roadmap towards the goal of sustainable development by addressing the key issues.

- There will be talks held for highlighting the complex interactions of various phenomena that regulate the Earth's processes and their symbiosis with the biosphere.

- India is the only Asian country to host the Congress twice. The 22nd session of IGC was held in New Delhi in 1964.

About IUGC:

- It is an international non-governmental organisation that is devoted to the cause of international cooperation in the field of geology.

- It was established in 1961.

- IUGC is headquartered in Paris with its secretariat in Beijing.

SOCIAL JUSTICE

1. Aadi Bazaar

» Prelims: Facts about TRIFED and Aadi Bazaar

Context

- In line with the series of Aadi Bazaars, one more was inaugurated at Kevadia, Statue of Unity in the Narmada district of Gujarat.

Aadi Bazaars

- Aadi Bazaars are aimed at celebrating the spirit of Tribal culture and cuisines.
- These are organised by TRIFED which works under the Ministry of Tribal Affairs.
- The event will feature an exhibition-cum-sale of tribal handicrafts, art, paintings, fabric, jewellery from across the country.
- The programme will help disseminate tribal culture from across the country to a larger audience.
- The event will also attract international tourists.

TRIFED

- Tribal Cooperative Marketing Development Federation of India (TRIFED) is a statutory body established in 1987.
- TRIFED helps tribal populations to manufacture products for national and international markets in a sustainable manner.

- TRIFED is continuing its endeavour in enhancing the livelihoods of tribals of India.

2. Rashtriya Gram Swaraj Abhiyan

» Prelims: Facts related to Rashtriya Gram Swaraj Abhiyan

» Mains: Welfare schemes and their significance in rural development.

Context

- The progress made by Rashtriya Gram Swaraj Abhiyan has been discussed in the Parliament.

About the Rashtriya Gram Swaraj Abhiyan (RGSA)

- It was launched on the occasion of 'National Panchayat Day' as an umbrella scheme of the Ministry of Panchayati Raj, Government of India.
- Ever since its inception, it had intended to develop and empower the Panchayati Raj System across the country's rural areas.
- Under the scheme, the capacities of institutions for rural development and governance have been facilitated through participatory planning, leveraging technology and efficient use of resources.

Rashtriya Gram Swaraj Abhiyan
Strengthening Governance Capabilities of PRIs* to achieve SDGs**

PM Narendra Modi launches Rashtriya Gram Swaraj Abhiyan on 24th April 2018

2.55 lakh PRIs across the country to deliver Sustainable Development Goals

Extend to all States and Union Territories and also rural local institutions where PRIs do not exists

To be implemented from 01-04-2018 to 31-03-2022

Allocation of ₹ 7255.50 cr with Central share of ₹ 4500 cr and State share of ₹ 2755.50 cr

Schemes include Central Components – National Plan of Technical Assistance, Mission Mode project on e-Panchayat and Incentivization of Panchayats and State Component - Capacity building of PRIs

*Panchayati Raj Institutions **Sustainable Development Goals

Image Source: transformingindia.mygov.in

Implementation:

- The RGSA was implemented as a Centrally Sponsored Scheme with a sharing ratio for the State components as 60:40 except in the Northeast and hilly states where the ratio of funding between the central and state will be 90:10.

MISCELLANEOUS

1. Polyherbal eco-friendly technology can combat tick infestation among dairy animals

Context:

- The National Innovation Foundation (NIF) – India has developed and standardized a formulation polyherbal for dairy animals.

What is Polyherbal?

- The use of more than one herb in a medicinal preparation is known as polyherbal formulation.

- The concept can be found in Ayurvedic and other traditional medicinal systems, which use multiple herbs in a specific ratio to treat illness.

Polyherbal for dairy animals:

- The National Innovation Foundation (NIF) – India has developed and standardized a formulation comprising common herbal ingredients like Neem (Azadirachta indica) and Nagod (Vitex negundo).

  * National Innovation Foundation (NIF) – India is an autonomous body of the Department of Science & Technology,

- This formulation has been found to be effective in combating tick infestation among dairy animals.

- The formulation is easy to prepare and effective against hard tick infestation and Rhipicephalus (Boophilus) Sp. the etiological parasite in cattle.

2. TEJAS skilling project

Context:

- TEJAS skilling project was launched by the union minister at the Dubai Expo.

TEJAS skilling project

- TEJAS (Training for Emirates Jobs And Skills) is a Skill India International Project to train Indians abroad.

- The project is aimed to increase the skills, certifications and overseas employment opportunities for Indians.

- The main objective of the project is to create pathways to enable the Indian workforce to get equipped for skill and market requirements in UAE.

3. Vishwakarma Rashtriya Puraskar

  » Prelims: About SAIL

Context:

- The Vishwakarma Rashtriya Puraskar ceremony was conducted to recognise the outstanding performance of the workers across the industries. The employees of the Steel Authority of India formed 54% of the total winners.

About the Vishwakarma Rashtriya Puraskar:

- This award is instituted by the Government of India with an objective to reward workers from industrial undertakings at the national level.

- This ceremony took place at Vigyan Bhavan, New Delhi.

- It was earlier known as the Shram Vir National Awards.

- This award acknowledges the suggestions put forth by the workers that are implemented by the management of the factory.

- Awards are conferred in the form of cash prizes and certificates.

4. Ship Building Agreement between DCI and Cochin Shipyard

Context:

- A historic Ship Building Agreement has been signed by the Dredging Corporation of India.

An Overview of the Agreement:

- This agreement has been signed between the Dredging Corporation of India and Cochin Shipyard providing a major boost to the Make in India initiative.

- It is for the first time that the construction of the first Beagle Series Dredger will commence under this historic agreement backed by the ambitious vision of Make in India.

- The agreement would result in the manufacturing of domestic high capacity dredgers.

MAKE IN INDIA PUSH

- Cochin Shipyard will build 12,000-cubic metre trailing suction hopper dredger
- Firm to deliver the vessel in 34 months
- This is seen as a major push towards the Centre's Make in India initiative
- Dutch firm IHC Holland to provide basic design and technical know-how
- Aim to reduce imports of trailing suction hopper dredgers by 2030
- As production increases, manufacturing cost of dredger comes down
- At present, 70 per cent of dredging requirement is for maintenance

Image source: www.business-standard.com

Financial Assistance:

- The Shipbuilding Financial Assistance Policy 2016 of the Ministry of Ports, Shipping and Waterways for Indian Shipyards will extend its benefits to this agreement for securing the shipbuilding contracts.
- Financial aid will be granted under this policy at a lower contract price or fair price.

About Dredging Corporation of India (DCI):

- The DCI was incorporated as a public sector organisation under the Companies Act 1956.
- The DCI, since its foundation, has been engaged in dredging activities.
- In 2017, the Government of India approved the privatisation of DCI followed by which the stake of DCI was transferred to 4 major ports. These ports include Visakhapatnam port trust, Paradeep port trust, Jawaharlal Nehru port trust and Kandla port trust.
- DCI is involved in activities such as capital dredging, beach nourishment and land reclamation.

Significance:

- The need for sufficient dredgers is of primary importance for the timely completion of dredging activities. The new shipbuilding agreement is a landmark achieved in this context.
- The initiative for the construction of 12,000 cubic metre Trailing Suction Hopper Dredger (TSHD) will add new dimensions to the shipbuilding industry of India showcasing the technological prowess that prepares a potential ground to 'Make in India, Make for the World'.
- Moreover, this agreement signifies India's way forward with the objectives of Atma Nirbharta (Self-reliance).

PRACTICE QUESTIONS

1. **Which of the given statements best describes "NISHTHA":**

   A. An integrated scheme for school education focused on improving the quality of education at all levels.

   B. A teachers' training programme launched to improve Learning Outcomes at the Elementary level.

   C. A set of guidelines issued for the Planning and implementation of Digital Education in India.

   D. A National Teacher Platform built to host Open Educational Resources (OER) and tools for teachers.

2. **Which of the given statements is/are correct:**

   1. It is the only one of the six principal organs of the UN that is not located in New York City.

   2. All members of the UN are automatically parties to the ICJ statute and this automatically gives the ICJ jurisdiction over disputes involving them.

   3. It has 15 judges who are elected to nine-year terms by the UN General Assembly and Security Council.

   4. India has never been a party to a case at the ICJ.

   Options:

   A. 1 and 4 only

   B. 2 and 3 only

   C. 1 and 3 only

   D. 1, 2 and 3 only

3. **Consider the following statements with respect to the 'Donbas region' recently in the news:**

   1. The region includes the states of Donetsk and Luhansk.

   2. It is an industrial area and is famous for its coal reserves.

   3. The region shares its borders with Russia and Belarus.

   Which of the given statement/s is/are INCORRECT?

   A. 1 only

   B. 2 and 3 only

   C. 3 only

   D. 1, 2 and 3

4. **Which of the given statements with respect to SWIFT is/are correct:**

   1. It is a messaging network used by banks and financial institutions globally for quick and faultless exchange of information pertaining to financial transactions.

   2. It is a global member-owned cooperative that transfers funds between a domestic Indian bank and an overseas bank.

   3. SWIFT does not hold any funds or securities.

   4. SWIFT does not manage client accounts.

   Options:

   A. 2, 3 and 4 only

   B. 1 and 3 only

   C. 1, 3 and 4 only

   D. 1, 2, 3 and 4

5. **Which one of the following books of ancient India has the love story of the son of the founder of the Sunga dynasty: [UPSC 2016]**

   A. Swapnavasavadatta

   B. Malavikagnimitra

   C. Meghadoota

   D. Ratnavali

6. **Consider the following statements with respect to Bardoli Satyagraha:**

   1. It is a movement in the independence struggle led by Vittalbhai J Patel for the farmers of Bardoli.

   2. The movement was launched against the unjust raising of taxes by the British Government.

   3. Mahatma Gandhi supported this movement through his writings in Young India.

   Which of the given statements is/are correct?

   A. 1 and 2 only

   B. 1, 2 and 3

   C. 2 and 3 only

   D. 2 only

7. **Consider the following statements with respect to Bhakra Beas Management Board (BBMB):**

   1. It is a statutory body that is constituted under the Punjab Reorganisation Act, 1966.

   2. It regulates the supply of water from Satluj, Ravi and Beas to the States of Punjab, Haryana and Rajasthan.

3. It regulates the supply of power generated from Bhakra-Nangal and Beas Projects.

Which of the given statements is/are INCORRECT?

A. 1 only

B. 2 only

C. 1 and 3 only

D. None of the above

8. Which of the given statements with respect to the International Federation of Association Football (FIFA) is/are correct:

1. It is the international governing body for futsal and beach soccer.

2. FIFA being the highest global governing body of football sets the rules of the game.

3. The FIFA Congress is the supreme legislative body of FIFA, in which each of the FIFA members has a vote.

4. It is a member of the International Football Association Board.

Options:

A. 2 and 4 only

B. 2, 3 and 4 only

C. 1, 3 and 4 only

D. 3 only

9. Which of the given statements is/are correct:

1. UNHCR is a UN Refugee Agency dedicated to saving lives, protecting the rights and building a better future for refugees, forcibly displaced communities and stateless people.

2. UNHCR was created in 1950 to help millions of Europeans who had fled or lost their homes.

3. UNHCR is the only international organization to have won the Nobel Peace Prize more than once.

4. India is not a party to the UN Refugee Conventions.

Options:

A. 1, 2 and 4 only

B. 3 and 4 only

C. 1 and 2 only

D. 1, 2, 3 and 4

10. What is 'Greenhouse Gas Protocol': [UPSC 2016]

A. It is an international accounting tool for government and business leaders to understand, quantify and manage greenhouse gas emissions

B. It is an initiative of the United Nations to offer financial incentives to developing countries to reduce greenhouse gas emissions and to adopt eco-friendly technologies

C. It is an inter-governmental agreement ratified by all the member countries of the United Nations to reduce greenhouse gas emissions to specified levels by the year 2022

D. It is one of the multilateral REDD+ initiatives hosted by the World Bank

11. Consider the following statements:

1. World Wildlife Day is celebrated on the 3rd of March as on this day in 1973, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) was signed.

2. According to the WWF, the most trafficked mammal in the world is Pangolins.

3. Vaquita is the world's rarest marine mammal and is on the edge of extinction.

Which of the statements given above is/are correct?

A. 1 only

B. 1 and 3 only

C. 2 and 3 only

D. 1, 2 and 3

12. With respect to National Commission for Protection of Child Rights (NCPCR), which of the following statements is/are correct:

1. It is an extra-constitutional body.

2. It functions under the Ministry of Home Affairs (MHA) of the central government.

3. A person who has held the office of the chairperson shall be eligible for re-nomination.

Options:

A. 1 and 2 only

B. 2 and 3 only

C. 1 and 3 only

D. None

13. **Which of the following statements about Inter-governmental Panel on Climate Change (IPCC) is/are correct:**

1. The IPCC engages in scientific research.

2. The IPCC provides objective and comprehensive scientific information on anthropogenic climate change, including the natural, political, and economic impacts and risks, and possible response options.

Options:

A. 1 only

B. 2 only

C. Both

D. None

14. **Which of the following States are parties to Convention on Cluster Munitions:**

1. France

2. New Zealand

3. United Kingdom

4. India

5. Ukraine

6. Russia

7. South Africa

Options:

A. 1, 2, 3 and 7 only

B. 1, 3, 4 and 7 only

C. 2, 3, 4, 5 and 6 only

D. 2, 5 and 7 only

15. **Why is there a concern about copper smelting plants: (UPSC CSE 2021)**

1. They may release lethal quantities of carbon monoxide into the environment

2. The copper slag can cause the leaching of some heavy metals into the environment

3. They may release sulphur dioxide as a pollutant

Select the correct answer using the code given below

A. 1 and 2 only

B. 2 and 3 only

C. 1 and 3 only

D. 1, 2 and 3

16. **Who among the following set up the 'Balhatya Pratibandhak Griha':**

A. Raja Ram Mohan Roy

B. Ramabai Ranade

C. Tarabai Shinde

D. Savitribai Phule

17. **Consider the following Statements with respect to QUAD:**

1. The idea of "QUAD" was first mooted by Japanese Prime Minister Shinzo Abe in 2007.

2. All the QUAD members are the members of Indian Ocean Rim Association (IORA).

3. All the QUAD members first participated in the Malabar Exercise in 2020.

Which of the given statements is/are INCORRECT?

A. 2 and 3 only

B. 2 only

C. 3 only

D. 1 only

18. **Consider the following statements with respect to the United Nations Environment Assembly (UNEA):**

1. It is hosted by the UN Environment Programme (UNEP).

2. It is the world's highest-level decision-making body on the environment.

3. It was created in 2012 during the Rio+20 negotiations.

Which of the given statements are INCORRECT?

A. 2 only

B. 2 and 3 only

C. 1 only

D. None of the above

19. **Consider the following statements with respect to the SVAMITVA Scheme:**

1. The scheme is piloted by the Ministry of Rural Development.

2. Under the scheme, residential land in villages will be measured using drones to create a non-disputable record.

3. Under the scheme, property card for every property in the village will be prepared by states.

Which of the given statements is/are correct?

A. 1 and 3 only

B. 2 and 3 only

C. 1, 2 and 3

D. 2 only

20. With reference to the scholars/litterateurs of ancient India, consider the following statements:

1. Panini is associated with Pushyamitra Shunga

2. Amarasimha is associated with Harshavardhana

3. Kalidasa is associated with Chandra Gupta-II

Which of the statements given above is/are correct? [UPSC 2020]

A. 1 and 2 only

B. 2 and 3 only

C. 3 only

D. 1, 2 and 3

21. Which of the following is/are correctly matched:

Rescue Mission Name	Country
1. Raahat	Yemen
2. Maitri	Nepal
3. Safe Homecoming	Syria
4. Sukoon	Lebanon

Options:

A. 1, 2 & 4 only

B. 2, 3 & 4 only

C. 1 & 4 only

D. All of the above

22. Consider the following statements with regards to IAEA (International Atomic Energy Agency):

1. In 2005, it was awarded the Nobel Peace Prize for their work for a safe and peaceful world.

2. The IAEA was created in 1957 in response to the deep fears and expectations generated by the discoveries and diverse uses of nuclear technology.

3. It is one of the specialized agencies of the United Nations.

Choose the correct code:

A. 1 & 2 only

B. 2 & 3 only

C. 1 & 3 only

D. All of the above

23. Which of the following is/are a part of Literary work done by Sri Aurobindo:

1. An English newspaper called Bande Matram

2. Bases of Yoga

3. The Future Evolution of Man

4. The story of my experiments with Truth

5. Savitri: A Legend and a Symbol

6. Hour of God

Options:

A. All except 3 & 4

B. All except 1 & 5

C. All except 4

D. All except 2 & 6

24. _____ is produced by electrolysis of water using renewable energy (like Solar, Wind) and has a lower carbon footprint.

A. Gray Hydrogen

B. Green Hydrogen

C. Blue Hydrogen

D. Brown Hydrogen

25. With reference to the history of India, "Ulgulan" or the Great Tumult is the description of which of the following events:

A. The Revolt of 1857

B. The Mappila Rebellion of 1921

C. The Indigo Revolt of 1859 – 60

D. Birsa Munda's Revolt of 1899-1900

26. Which of the following statements with respect to Financial Action Task Force (FATF) is/are incorrect:

1. It was established in 1989 on the initiative of the Group of Twenty (G20) to examine and develop measures to combat money laundering.

2. The FATF Secretariat is located at the OECD Headquarters in Paris.

3. The FATF currently comprises 37 member jurisdictions and 2 regional organizations, representing most major financial centers in all parts of the globe.

Options:

A. 1 only

B. 2 and 3 only

C. 3 only

D. None

27. With respect to Northern River Terrapin, which of the following statements is/are correct?

1. They are one of the largest sea turtle species and also one of the most migratory, crossing both the Atlantic and Pacific Oceans

2. It is listed on the IUCN Red List as a Critically Endangered species

Options:

A. 1 only

B. 2 only

C. Both

D. None

28. Consider the following statements:

1. It is a carbohydrate-enriched coating that covers the outside of many eukaryotic cells and prokaryotic cells, particularly bacteria .

2. It helps the pathogen to evade the immune system

The above statements best describe:

A. Pili

B. Flagella

C. Glycocalyx

D. Endospore

29. Which of the following are correctly matched:

1. AH-64E Apache attack helicopter: USA

2. CH-47 Chinook Helicopters: France

3. Ml-35 helicopters: Russia

4. Pole Star: UK

Options:

A. 1, 2 and 3 only

B. 1 and 3 only

C. 2 and 4 only

D. 1, 3 and 4 only

30. With reference to the Indian economy, demand-pull inflation can be caused/increased by which of the following:

1. Expansionary policies

2. Fiscal stimulus

3. Inflation-indexing wages

4. Higher purchasing power

5. Rising interest rates

Select the correct answer using the code given below.

A. 1, 2 and 4 only

B. 3, 4 and 5 only

C. 1, 2, 3 and 5 only

D. 1, 2, 3, 4 and 5

31. Which of the following National Waterways is/are correctly matched:

 National Waterway River

1. NW-1 Ganga-Bhagirathi-Hooghly River System

2. NW-2 Brahmaputra River

3. NW-3 Krishna and Godavari

4. NW-10 Amba River

Options:

A. 1, 2 and 3 only

B. 3 and 4 only

C. 1, 2 and 4 only

D. 1, 2, 3 and 4

32. The Central Industrial Security Force (CISF) provides security cover to:

1. Nuclear Installations

2. Space Establishments

3. Private corporate establishments

4. VIP's nominated by the Home Ministry

Options:

A. 1 and 2 only

B. 1, 2 and 3 only

C. 3 and 4 only

D. 1, 2, 3 and 4

33. Consider the following statements with respect to HANSA- NG:

1. It is Unmanned Aerial Vehicle (UAV) developed by Aeronautical Development Establishment

2. It will replace/supplement the Heron UAVs in service with the Indian armed forces

3. It can be deployed at high altitude areas like Ladakh and in harsh environments for day-and-night surveillance by infantry soldiers and Special Forces

Which of the above statements is/are correct?

A. 1 only

B. 2 and 3 only

C. None

D. 1, 2 and 3

34. Mariupol, a major port city recently seen in the news, is part of which country:

A. Romania

B. Poland

C. Belarus

D. Ukraine

35. Consider the following statements in respect of the Laureus World Sports Award which was instituted in the year 2000: [PYQ 2021]

1. American golfer Tiger Woods was the first winner of this award.

2. The award has been received mostly by 'Formula One' Players so far.

3. Roger Federer received this award the maximum number of times compared to others.

Which of the above statements are correct?

A. 1 and 2 only

B. 2 and 3 only

C. 1 and 3 only

D. 1, 2 and 3

36. Consider the following statements with regards to the PM Shram Yogi Maan-Dhan Yojana:

1. The scheme covers unorganised workers whose monthly income is Rs 15,000/per month or less.

2. The Subscriber should belong to the entry age group of 18-40 years.

3. They should not be covered under New Pension Scheme (NPS), Employees' State Insurance Corporation (ESIC) scheme or Employees' Provident Fund Organisation (EPFO).

4. He/She should be an income taxpayer.

Options:

A. 1, 2 & 3 only

B. 2, 3 & 4 only

C. 1 & 4 only

D. All of the above

37. Consider the following statements with regards to 'Equalisation Levy':

1. It is aimed at taxing foreign companies which have a significant local client base in India but are billing them through their offshore units, effectively escaping the country's tax system.

2. For EL to be imposed, the annual payment which is made to a service provider should be more than 10 Lakh rupees in one financial year.

3. The amendments to the Finance Act, 2020 had expanded the ambit of the equalisation levy for non-resident e-commerce operators involved in the supply of services, including the online sale of goods and provision of services, with the levy at the rate of 2% effective April 1, 2020.

Choose the correct code:

A. 1 & 2 only

B. 2 & 3 only

C. 1 & 3 only

D. All of the above

38. Consider the following statements with regards to the Rajya Sabha elections:

1. The elections take place through Proportional Representation with the Single Transferable Vote methodology.

2. Out of the 8 union territories, only Delhi, Puducherry and Jammu and Kashmir have representation in Rajya Sabha.

3. All states have at least some representation in the Rajya Sabha.

Choose the correct code:

A. 1 & 2 only

B. 2 & 3 only

C. 1 & 3 only

D. All of the above

39. A situation of slow economic growth and relatively high unemployment is best defined as

A. Stagflation

B. Inflation

C. Deflation

D. Galloping inflation

40. With reference to the book "Desher Katha" written by Sakharam Ganesh Deuskar during the freedom struggle, consider the following statements:

1. It warned against the Colonial State's hypnotic conquest of the mind.

2. It inspired the performance of swadeshi street plays and folk songs.

3. The use of 'desh' by Deuskar was in the specific context of the region of Bengal.

Which of the statements given above are correct? [UPSC 2020]

A. 1 and 2 only

B. 2 and 3 only

C. 1 and 3 only

D. 1, 2 and 3

41. Consider the following statements with regards to Rat Hole Mining:

1. Rat hole mining involves digging of very small tunnels, usually only 3-4 feet high, which workers (often children) enter and extract coal.

2. The National Green Tribunal (NGT) banned it in 2014, on grounds of it being unscientific and unsafe for workers.

3. Since the coal seam is extremely thin in Meghalaya, no other method would be economically viable.

Choose the correct code:

A. 1 & 3 only

B. 2 & 3 only

C. 1 & 2 only

D. All of the above

42. Consider the following statements with regards to BBIN Motor Vehicle Agreement:

1. The Bangladesh, Bhutan, India, Nepal (BBIN) Initiative is a sub-regional architecture of countries in Eastern South Asia.

2. The BBIN Motor Vehicles Agreement was signed in 2015 at the BBIN transport ministers meeting in Thimpu, Bhutan.

3. Apart from Nepal, all other nations have ratified the agreement already.

Choose the correct code:

A. 1 & 2 only

B. 2 & 3 only

C. 1 & 3 only

D. All of the above

43. Consider the following statements:

1. Under the present rules for getting a PAN card, an applicant can furnish only their mother's name, without giving their father's name, if she is a single parent.

2. Under the Hindu Minority and Guardianship Act, (HMGA) 1956, the natural guardian of a Hindu minor in respect of the minor's person or property "is the father, and after him, the mother".

3. The Muslim Personal Law (Shariat) Application Act, 1937 says that the Shariat or the religious law will apply in case of guardianship according to which the father is the natural guardian.

Choose the correct code:

A. 1 & 2 only

B. 2 & 3 only

C. 1 & 3 only

D. All of the above

44. Which of the following statements about NATO (North Atlantic Treaty Organization) is not correct?

A. NATO constitutes a system of collective security, whereby its independent member states agree to mutual defense in response to an attack by any external party.

B. The most recent member state to be added to NATO was Moldova on 27 March 2020.

C. The September 11 attacks in the United States caused NATO to invoke Article 5 of the NATO Charter for the first time in the organization's history.

D. Article 5 of the treaty commits each member state to consider an armed attack against one member state, in Europe or North America, to be an armed attack against them all.

45. In which one of the following groups are all the four countries members of G20? [UPSC 2020]

A. Argentina, Mexico, South Africa and Turkey

B. Australia, Canada, Malaysia and New Zealand

C. Brazil, Iran, Saudi Arabia and Vietnam

D. Indonesia, Japan, Singapore and South Korea

46. Sarlamkai, Chheih Lam and Cheraw are the popular dance forms of which of these states:

A. Assam

B. Mizoram

C. Sikkim

D. Nagaland

47. Which of the given statements with respect to National Investment and Infrastructure Fund (NIIF) is/are correct?

1. The National Investment and Infrastructure Fund (NIIF) is India's first Sovereign Wealth Fund (SWF).

2. It is a collaborative investment platform for international and Indian investors anchored by the Government of India.

3. NIIF Master Funds primarily invest in operating assets in core infrastructure sectors such as transportation and energy.

Options:

A. 2 and 3 only

B. 2 only

C. 1, 2 and 3

D. None of the above

48. Merapi volcano, recently seen in News, is located in:

A. Philippines

B. Japan

C. Indonesia

D. Turkey

49. Arrange the following from North to South:

1. Pangong Tso Lake

2. Galwan Valley

3. Gogra Hot Springs

Options:

A. 2, 3, 1

B. 2, 1, 3

C. 3, 1, 2

D. 1, 3, 2

50. If a particular plant species is placed under Schedule VI of The Wildlife Protection Act, 1972, what is the implication: [UPSC 2020]

A. A license is required to cultivate that plant.

B. Such a plant cannot be cultivated under any circumstances.

C. It is a Genetically Modified crop plant.

D. Such a plant is invasive and harmful to the ecosystem

51. With respect to India's military exercises, which of the following is/are matched correctly?

Military Exercise	Country
1. Ajeya Warrior	USA
2. Dharma Guardian	Japan
3. Indra	Indonesia
4. Yudh Abhyas	UK

Options:

A. 1, 2 and 3 only

B. 2 only

C. 3 and 4 only

D. 1, 2, 3 and 4

52. Consider the following statements with respect to National Youth Parliament Festival:

1. It is organized by the Ministry of Parliamentary Affairs.

2. The objective of the National Youth Parliament Festival is to hear the voice of youth between 18 and less than 25 years of age.

Which of the statements given above is/are correct?

A. 1 only

B. 2 only

C. Both

D. None

53. Which of the following statements is/are correct with respect to Kudankulam Nuclear Power Project (KKNPP):

1. It is a Civilian Nuclear Power Plant, built by India in joint collaboration with Russia.

2. It is the largest nuclear power station in India.

3. India is the world's third-largest producer of nuclear power.

Options:

A. 1 and 2 only

B. 2 and 3 only

C. 1 and 3 only

D. 1, 2 and 3

54. Consider the following statements with respect to Cabinet committees:

1. Cabinet Committees find a mention in the Constitution.

2. All committees except Cabinet Committee on Accommodation and Cabinet Committee on Parliamentary Affairs are headed by Prime Minister.

Which of the statements given above is/are correct?

A. 1 only

B. 2 only

C. Both

D. None

55. At the national level, which ministry is the nodal agency to ensure effective implementation of the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006? (UPSC-2021)

A. Ministry of Environment, Forest and Climate Change

B. Ministry of Panchayati Raj

C. Ministry of Rural Development

D. Ministry of Tribal Affairs

56. Rashtriya Garima Abhiyan is a national campaign to:

A. Rehabilitate children in conflict with the law

B. Abolish human trafficking and slavery

C. Eliminate and prevent child labour

D. Eradicate manual scavenging

57. Which of the following subjects are listed under the Concurrent List:

1. Education

2. Forest

3. Public Health and Sanitation

4. Relief of the disabled and unemployable

5. Taxes on luxuries, including taxes on entertainments

Options:

A. 1 and 2 only

B. 3, 4 and 5 only

C. 1, 2, 4 and 5 only

D. 1, 2 and 4 only

58. Consider the following statements:

1. Nomination of members to Rajya Sabha was taken from the Irish Constitution.

2. President can nominate two members to the Lok Sabha from the Anglo-Indian Community.

Which of the statements given above is/are correct?

A. 1 only

B. 2 only

C. Both

D. None

59. The inverse relationship between unemployment rate and inflation is depicted by:

A. Kuznets Curve

B. Phillips Curve

C. Lorenz Curve

D. Laffer Curve

60. Which one of the following best defines the term 'State':

A. A community of persons permanently occupying a definite territory independent of external control and possessing an organized government

B. A politically organized people of a definite territory and possessing an authority to govern them, maintain law and order, protect their natural rights and safeguard their means of sustenance

C. A number of persons who have been living in a definite territory for a very long time with their own culture, tradition and government

D. A society permanently living in a definite territory with a central authority, an executive responsible to the central authority and an independent judiciary

61. Consider the following statements with respect to SARAS-3:

1. It is a radio telescope that is mounted on India's first multi-wavelength astronomical observatory AstroSat.

2. It was built to detect extremely faint radio wave signals from the "Cosmic Dawn".

3. SARAS-3 can be deployed on water bodies.

Which of the given statements is/are correct?

A. 1 and 2 only

B. 2 and 3 only

C. 3 only

D. 1, 2 and 3

62. Consider the following statements with respect to NASA's Perseverance rover:

1. It was designed as part of NASA's Mars 2020 mission to explore the Jezero crater on Mars.

2. It uses the heat of plutonium's radioactive decay for electric power.

3. The rover is carrying Ingenuity – the first helicopter to fly on Mars.

Which of the given statements is/are INCORRECT?

A. 1 and 3 only

B. 3 only

C. 2 only

D. None of the above

63. Consider the following statements with respect to Pandavleni Caves:

1. These caves are early examples of Indian rock-cut architecture and represent Mahayana Buddhist tradition.

2. The caves have the magnificent idols of Buddha and the popular Jain Tirthankaras such as Vrishabhdeo.

3. These caves house the paintings of the Gupta Period.

Which of the given statement/s is/are INCORRECT?

A. 1 and 3 only

B. 1 only

C. 2 and 3 only

D. 3 only

64. River Umiam flows through which of these states?

1. Assam

2. Meghalaya

3. Mizoram

4. Arunachal Pradesh

Options:

A. 1 and 2 only

B. 3 only

C. 4 only

D. 2 only

65. In India, separation of judiciary from the executive is enjoined by

A. The Preamble of the Constitution

B. A Directive Principle of state policy

C. The Seventh schedule

D. The conventional practice

66. Consider the following statements with respect to Lake Chilika:

1. Mangalajodi Bird Sanctuary is the core area of Chilika Lake.

2. It is Asia's largest coastal lagoon.

3. Chilika Lake boasts the highest single lagoon population of Irrawaddy dolphins in the world.

Which of the given statement/s is/are correct?

A. 2 and 3 only

B. 1 and 2 only

C. 3 only

D. 1, 2 and 3

67. Which of the given statements is/are correct?

1. Palladium is used to coat electrodes that help control flow of electricity.

2. Palladium is used in making multilayer ceramic capacitors which are important to make smartphone screens and power circuit breakers.

3. Ukraine is the world's largest producer of palladium.

Options:

A. 3 only

B. 1 and 2 only

C. 1 and 3 only

D. 2 only

68. Which of the given statements with respect to GenoMICC research project is/are INCORRECT?

1. It is a research study initiated by India that is exclusively aimed at mapping and identifying the genetic variation linked to severity of COVID-19.

2. It aims to undertake whole genome sequencing of thousands of individuals representing diverse ethnic groups from India.

3. It is an initiative of the Council of Scientific and Industrial Research (CSIR).

Options:

A. 1 and 3 only

B. 1 only

C. 2 only

D. 1, 2 and 3

69. Which of the given statements is/are correct with respect to the National Pharmaceutical Pricing Authority?

1. In India, the prices of all drugs including branded and generic are regulated by the National Pharmaceutical Pricing Authority.

2. It fixes the ceiling price of scheduled medicines in the first schedule of the Drugs (Prices Control) Order, 2013.

3. It prepares the National List of Essential Medicines (NLEM) annually.

Options:

A. 1 and 3 only

B. 2 and 3 only

C. 1, 2 and 3

D. 1 and 2 only

70. Which of the following phrases defines the nature of the 'Hundi' generally referred to in the sources of the post-Harsha period?

A. An advisory issued by the king to his subordinates

B. A diary to be maintained for daily accounts

C. A bill of exchange

D. An order from the feudal lord to his subordinates

71. Which of the following fundamental rights are available to both citizens and foreigners, except enemy aliens?

1. Article 14

2. Article 19

3. Article 21

4. Article 25

5. Article 29

Options:

A. 1, 3 and 4 only

B. 1, 2, and 5 only

C. 2, 3, 4 and 5 only

D. 1, 2, 3, 4 and 5

72. Which of the following statements is/are correct?

1. Border infrastructure creation is largely the responsibility of the Ministry of Home Affairs.

2. Department of Border Management under the MHA deals with the management of borders, including coastal borders, strengthening of border guarding mechanisms and creation of related infrastructure, border areas development, etc.

Options:

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

73. With reference to the Joint Comprehensive Plan of Action (JCPOA), examine which of the following statements are correct?

1. It deals with western economic sanctions against Russia.

2. It was signed between P5 countries & the EU.

3. Russia has recently breached the terms of the agreement.

Options:

A. 1 only

B. 2 and 3 only

C. 3 only

D. None of the above

74. 'PM SVANidhi' scheme was launched to benefit -

A. Small and marginal farmers

B. Tribal artisans

C. Street vendors

D. Women-led Self-help Groups

75. If you withdraw 1,00,000 in cash from your Demand Deposit Account at your bank, the immediate effect on aggregate money supply in the economy will be [UPSC 2020]

A. To reduce it by 1,00,000

B. To increase it by 1,00,000

C. To increase it by more than 1,00,000

D. To leave it unchanged

76. Which amongst the given States have introduced an 'anti-lynching Bill' to deal with mob-lynchings and hate crimes?

1. Karnataka
2. Maharashtra
3. Manipur
4. Rajasthan

Options:

A. 1 only
B. 1 and 2 only
C. 2, 3 and 4 only
D. 3 and 4 only

77. Which of the following statements is/are correct?

1. 'Dictionary of Martyrs of India's Freedom Struggle' was commissioned by the Ministry of Culture to commemorate the 150th anniversary of the uprising of 1857.

2. It contains an account of the martyrs from India's First War of Independence in 1857 to India's Independence in 1947.

3. It was compiled by the Indian Council of Historical Research (ICHR).

Options:

A. 1 only
B. 1 and 2 only
C. 1 and 3 only
D. 1, 2 and 3

78. Foreign funding restrictions on NGOs are placed under which law?

A. Foreign Contribution Regulations Act
B. Prevention of Money Laundering Act
C. Reserve Bank of India Act
D. Conservation of Foreign Exchange and Prevention of Smuggling Activities Act

79. Which of the following statements is/are correct?

1. The International Solar Alliance (ISA) was launched by Prime Minister Modi ahead of the 2015 Paris summit of the Climate Change Convention.

2. Its membership has been limited to only those countries that fall within the tropics.

3. The alliance has partnered with the World Bank to launch the Global Solar Atlas.

Options:

A. 1 only
B. 1 and 2 only
C. 1 and 3 only
D. 2 and 3 only

80. In India, the use of carbofuran, methyl parathion, phorate and triazophos is viewed with apprehension. These chemicals are used as – [UPSC 2019]

A. pesticides in agriculture
B. preservatives in processed foods
C. fruit-ripening agents
D. moisturizing agents in cosmetics

81. Consider the following statements with respect to International Court of Justice (ICJ):

1. States that ratify the Rome Statute become parties to the ICJ.

2. The ICJ is composed of 15 judges and they have a tenure of six years each.

3. The ICJ can suo moto take up a case in case of genocide.

Which of the statements given above is/are correct?

A. 1 and 2 only
B. 3 only
C. 1, 2 and 3
D. None

82. Which of the following statements is/are correct?

1. The power to grant citizenship lies with the Home Ministry.

2. The power of the Government of India to expel foreigners is absolute and unlimited.

Options:

A. 1 only
B. 2 only
C. Both
D. None

83. With respect to the Silk Industry, which of the following statements is/are incorrect?

1. India is the largest silk producer in the world.

2. India is the only country producing all the five known commercial silks.

3. Arani silk from Andhra Pradesh has received Geographical Indication (GI) status.

Options:

A. 1 only

B. 2 only

C. 1 and 3 only

D. 2 and 3 only

84. **With respect to the Deep Ocean Mission, which of the following statements is/are correct?**

1. It is a central sector scheme where the Government aims to conduct the exploration of the underwater world on similar lines as ISRO does for space.

2. This ambitious project will be managed by the Ministry of Science and Technology.

Options:

A. 1 only

B. 2 only

C. Both

D. None

85. **Consider the following animals: (UPSC CSE 2021)**

1. Hedgehog

2. Marmot

3. Pangolin

To reduce the chance of being captured by predators, which of the above organisms rolls up/ roll up and protects/protect its/their vulnerable parts?

A. 1 and 2 only

B. 2 only

C. 3 only

D. 1 and 3 only

86. **With respect to the Organisation of Islamic Cooperation (OIC), which of the following statements is/are correct?**

1. It is the second-largest organization after the United Nations.

2. Iran was suspended from OIC after the Yemen crisis.

3. The OIC has permanent delegations to the United Nations and the European Union.

Options:

A. 2 only

B. 1 and 3 only

C. 1, 2 and 3

D. None

87. **Consider the following statements with respect to P-Waves and S-Waves:**

1. P-Waves create troughs and crests in the material through which they pass, S-waves create density differences in the material leading to stretching and squeezing of the material.

2. P-Waves can travel through solid, liquid, and gas, S-Waves can only travel through solids and liquids.

Which of the statements given above is/are correct?

A. 1 only

B. 2 only

C. Both

D. None

88. **Which of the following has/have been accorded the Geographical Indication (GI) Tag?**

1. Darjeeling Tea

2. Basmati Rice

3. Nagpur Oranges

4. Naga Mircha

5. Jalgaon Banana

Options:

A. 1 and 2 only

B. 2, 3, 4 and 5 only

C. 1, 3 and 4 only

D. 1, 2, 3, 4 and 5

89. **Consider the following statements with respect to Sawfish:**

1. Sawfish are elasmobranchs.

2. Largetooth Sawfish is listed as Critically Endangered on IUCN.

3. Sawfishes are a protected species in India under Schedule I of the Wildlife Protection Act 1972.

Which of the statements given above is/are correct?

A. 1 and 2 only

B. 2 and 3 only

C. 1 and 3 only

D. 1, 2 and 3

90. Consider the following statements: (UPSC CSE 2021)

1. Moringa (drumstick tree) is a leguminous evergreen tree.

2. Tamarind tree is endemic to South Asia.

3. In India, most of the tamarind is collected as minor forest produce.

4. India exports tamarind and seeds of moringa.

5. Seeds of moringa and tamarind can be used in the production of biofuels.

Which of the statements given above are correct?

A. 1, 2, 4 and 5

B. 3, 4 and 5

C. 1, 3 and 4

D. 1, 2, 3 and 5

91. Consider the following statements with respect to the Qutb Shahi dynasty:

1. Badi Baoli was built by Jamsheed Quli Qutb Shah, of the Qutb Shahi dynasty.

2. The dynasty came to an end when the Mughal Emperor Aurangzeb arrested and jailed Sultan Abul Hasan Qutb Shah for the rest of his life

Which of the statements given above is/are correct?

A. 1 only

B. 2 only

C. Both

D. None

92. With respect to Golden Langur, which of the following statements is/are correct?

1. It is endemic to the Western Ghats.

2. Its IUCN status is Critically Endangered.

3. Golden Langur easily recognised by the colour of their fur, changes according to the seasons.

Options:

A. 1 only

B. 1 and 3 only

C. 3 only

D. 1, 2 and 3

93. The first concrete step towards modern education in India was laid by

A. Charter Act of 1813

B. Wood's Despatch

C. Macaulay's Minute on Education

D. Hunter Education Commission

94. Which of the following is/are correctly matched?

Name of the Pass – Region

1. Zoji La – Great Himalayas

2. Banihal – Pir Panjal

3. Photu La – Zaskar

4. Khardung La – Ladakh Range

Options:

A. 1, 2 and 3 only

B. 2 and 4 only

C. 1, 3 and 4 only

D. 1, 2, 3 and 4

95. With reference to street-lighting, how do sodium lamps differ from LED lamps?

1. Sodium lamps produce light in 360 degrees but it is not so in the case of LED lamps.

2. As street lights, sodium lamps have longer lifespan than LED lamps.

3. The spectrum of visible light from sodium lamps is almost monochromatic while LED lamps offer significant colour advantages in street lighting.

Select the correct answer using the code given below. [UPSC 2021]

A. 3 only

B. 2 only

C. 1 and 3 only

D. 1, 2 and 3

96. Consider the following statements with respect to National Green Tribunal (NGT):

1. The Tribunal is bound by the procedure laid down under the Code of Civil Procedure, 1908 and by principles of natural justice.

2. It draws inspiration from the India's constitutional provision of Article 21.

3. NGT is mandated to dispose of all the cases within 12 months.

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Which of the statements given above is/are correct?

A. 1 and 2 only

B. 2 only

C. 1 and 3 only

D. 1, 2 and 3

97. With respect to the Vijayanagara empire, which of the following statements is/are correct?

1. The single biggest item of import to the Vijayanagar empire was horses.

2. Persian traveler Abdur Razzaq visited Vijayanagara during the rule of Deva Raya I.

Options:

A. 1 only

B. 2 only

C. Both

D. None

98. Arrange the following from North to South:

1. Svalbard

2. Jan Mayen

3. Faroe Islands

Options:

A. 1-2-3

B. 2-3-1

C. 3-1-2

D. 1-3-2

99. Boma technique recently seen in news is related to

A. revolutionary concept of 4D technology

B. remote sensing method that uses light in the form of a pulsed laser to measure ranges

C. luring of animals into an enclosure by chasing them through a funnel-like fencing

D. process by which a genetically identical copy of a certain bacteria, plant or animal is produced by asexual reproduction

100. With reference to Madanapalle of Andhra Pradesh, which one of the following statements is correct? [UPSC 2021]

A. Pingali Venkayya designed the tricolor Indian National Flag here.

B. Pattabhi Sitaramaiah led the Quit India Movement of Andhra region from here.

C. Rabindranath Tagore translated the National Anthem from Bengali to English here.

D. Madame Blavatsky and Colonel Olcott set up headquarters of Theosophical Society first here.

101. Consider the following statements with regards to admissions in Kendriya Vidyalaya (KV):

1. A member of parliament can recommend up to 5 students for admissions into KVs each academic year.

2. A discretionary quota given to the Union Education Minister for admission into KVs was scrapped in 2021.

3. The objective of KVs is to cater to the educational needs of children of transferable Central Government including Defense and Paramilitary personnel by providing a common programme of education. But admissions are open to civilians as well.

Choose the correct code:

A. 1 & 3 only

B. 2 & 3 only

C. 1 & 2 only

D. All of the above

102. Consider the following statements with regards to the '2+2' dialogue held by the Government of India:

1. India holds such talks with Australia, Japan and the USA only.

2. It is a format of dialogue where the defense/foreign ministers or secretaries meet with their counterparts from another country.

3. The USA was the first country with which India began 2+2 dialogue.

Choose the correct code:

A. 1 & 2 only

B. 1 & 3 only

C. 2 & 3 only

D. All of the above

103. Consider the following statements with regards to the Padma awards:

1. The Awards are conferred on the recommendations made by the Padma Awards Committee, which is constituted by the Prime Minister every year.

2. Government servants including those working with PSUs, except doctors and scientists, are not eligible for these awards.

3. The total number of awards to be given in a year (excluding posthumous awards and to NRI/foreigners/OCIs) should not be more than 120.

Choose the correct code:

A. 1 & 2 only

B. 2 & 3 only

C. 1 & 3 only

D. All of the above

104. Who amongst the following first proposed the idea of "Gandhi Khaddar Fund"?

A. Jawaharlal Nehru

B. Pandit Madan Mohan Malviya

C. Vallabhbhai Patel

D. Vinoba Bhave

105. With reference to Ocean Mean Temperature (OMT), which of the following statements is/are correct?

1. OMT is measured up to a depth of 26℃ isotherm which is 129 meters in the southwestern Indian Ocean during January — March.

2. OMT collected during January — March can be used in assessing whether the amount of rainfall in the monsoon will be less or more than a certain long-term mean.

Select the correct answer using the code given below: [UPSC 2020]

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

106. Consider the following statements with regards to the International Criminal Court:

1. Governed by an international treaty called 'The Rome Statute', the ICC is the world's first permanent international criminal court.

2. India is one of the founding members of the Rome statute.

3. The ICC does not prosecute those under the age of 18 when a crime was committed.

Choose the incorrect statements:

A. 1 only

B. 2 only

C. 1 & 3 only

D. All of the above

107. Consider the following statements with regards to Biochemical Oxygen Demand:

1. BOD is the amount of dissolved oxygen needed by bacteria in decomposing the organic wastes present in water.

2. The higher value of BOD indicates better/purer quality of water.

3. Since BOD is limited to biodegradable materials, it is not a reliable method of measuring water pollution.

Choose the correct code:

A. 1 & 2 only

B. 1 & 3 only

C. 2 & 3 only

D. All of the above

108. Which of the following crops are covered under the MSP (Minimum Support Price) mechanism by the Government of India?

1. Raw Jute

2. Arhar

3. Soybean

4. Sunflower seed

5. Raw cotton

Choose the correct code:

A. All except 2 & 4

B. All except 1 & 4

C. 2, 3 & 4 only

D. All of the above

109. **'No taxation without representation' is a slogan which originated from which of the following events?**

A. French Revolution

B. American Civil War

C. Russian Revolution

D. American Revolution

110. **Among the following Tiger Reserves, which one has the largest area under "Critical Tiger Habitat"?**

A. Corbett

B. Ranthambore

C. Nagarjunsagar-Srisailam

D. Sunderbans

111. **Lapsus$ recently seen in news is a/an**

A. Virtual personal assistant

B. Decentralized cryptocurrency

C. Artificial intelligence tool that mimics the workings of a human brain

D. Data extortion hacking group

112. **Consider the following statements:**

1. Municipal corporations are established in the states by the acts of the state legislatures concerned, and in the union territories by the President.

2. The Notified area committee may be wholly elected or wholly nominated by the State government.

Which of the statements given above is/are correct?

A. 1 only

B. 2 only

C. Both

D. None

113. **Which of the following is/are the consequences of President's Rule?**

1. The President can declare that the powers of the state legislature are to be exercised by the Union Cabinet.

2. A law made by the Parliament or President or any other specified authority continues to be operative even after the President's Rule.

Options:

A. 1 only

B. 2 only

C. Both

D. None

114. **Which of the following statements with respect to Abel Prize is/are correct?**

1. It is awarded to mathematicians not over 40 years of age at each International Congress of the International Mathematical Union.

2. It is awarded every four years.

Options:

A. 1 only

B. 2 only

C. Both

D. None

115. **With reference to India, consider the following statements:**

1. When a prisoner makes out a sufficient case, parole cannot be denied to such prisoner because it becomes a matter of his/her right.

2. State Governments have their own Prisoners Release on Parole Rules.

Which of the statements given above is/are correct? [UPSC 2021]

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

116. **With respect to election to the office of President of India, which of the following statements is/are correct?**

1. He/she is elected by members of both the houses of the Parliament and members of the Legislative Assemblies of the States.

2. The President's election is held in accordance with the system of Proportional representation by means of a single transferrable vote and the voting is by Open ballot.

3. Any dispute related to his/her election is taken up by Supreme Court (SC). SC's decision is final.

Options:

A. 1 only

B. 2 and 3 only

C. 3 only

D. 1, 2 and 3

117. Which of the following Dams/Power Projects is/are constructed/proposed to be constructed on River Chenab?

1. Dul Hasti Hydroelectric Plant

2. Kiru Hydroelectric Power Project

3. Pakal Dul Dam

4. Salal Dam

5. Uri Dam

Options:

A. 1, 2 and 5 only

B. 2, 3, 4 and 5 only

C. 1, 2, 3 and 4 only

D. 1, 2, 3, 4 and 5

118. Which of the following Island Countries are in the Pacific Ocean?

1. Comoros

2. Fiji

3. Kiribati

4. Solomon Islands

5. Tonga

Options:

A. 1, 2, 3 and 4 only

B. 2, 3, 4 and 5 only

C. 1, 3, 4 and 5 only

D. 1, 2, 3, 4 and 5

119. Consider the following statements with respect to appointment of High Court Judges:

1. The Judges of a high court are appointed by the Governor.

2. A distinguished Jurist in the opinion of the Governor can be appointed as a High Court Judge.

Options:

A. 1 only

B. 2 only

C. Both

D. None

120. Which amongst the following is regarded as the mother of all gharanas as it is considered to be the oldest?

A. Gwalior Gharana

B. Dilli Gharana

C. Agra Gharana

D. Patiala Gharana

121. Chamayavilakku ritual is a practice in the state of

A. Tamil Nadu

B. Karnataka

C. Kerala

D. Andhra Pradesh

122. The Chauri-Chaura Incident took place in which amongst the following districts in the United Provinces (present-day Uttar Pradesh):

A. Benares

B. Gorakhpur

C. Jhansi

D. Rae Bareli

123. With reference to India, consider the following statements:

1. Retail investors through demat account can invest in 'Treasury Bills' and 'Government of India Debt Bonds' in primary market.

2. The 'Negotiated Dealing System-Order Matching' is a government securities trading platform of the Reserve Bank of India.

3. The 'Central Depository Services Ltd.' is jointly promoted by the Reserve Bank of India and the Bombay Stock Exchange.

Which of the statements given above is/are correct?

A. 1 only

B. 1 and 2 only

C. 3 only

D. 2 and 3 only

124. With respect to Gram Nyayalayas Act, 2008, which of the following statements is/are correct?

1. The Gram Nyayalayas have both civil and criminal jurisdiction

2. The Act does not make the setting up of Gram Nyayalayas mandatory.

3. The District Courts may, by notification, make rules for carrying out the provisions of this Act.

Options:

A. 1 and 2 only

B. 2 and 3 only

C. 1 and 3 only

D. 1, 2 and 3

125. Consider the following statements with respect to Kalanamak rice:

1. Kalanamak rice has been cultivated since the Buddhist period

2. Kalanamak is highly resistant to rice diseases such as panicle blast, stem rot and brown spot

3. Kalanamak Rice has been granted the Geographical Indication (GI) Tag

Which of the statements given above is/are correct?

A. 1 only

B. 2 and 3 only

C. 1 and 3 only

D. 1, 2 and 3

126. Consider the following statements with respect to Union Public Service Commission (UPSC):

1. The Chairman and members of the commission hold office for a term of five years or until they attain the age of 65 years.

2. The Chairman of UPSC is eligible for further employment in the Government of India

3. The UPSC has to be consulted while making reservations of appointments in favor of backward class of Citizens

Which of the statements given above is/are incorrect?

A. 1 only

B. 3 only

C. 1, 2 and 3

D. None

127. Who was the first ruler who tried to take his message to the people through inscriptions?

A. Chandragupta Maurya

B. Bindusara

C. Ashoka

D. Dasharatha Maurya

128. Consider the following statements in respect of the ICC World Test Championship:

1. The finalists were decided by the number of matches they won.

2. New Zealand was ranked ahead of England because it won more matches than England.

Which of the above statements is/are correct?

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

129. Consider the following statements with regards to the Sansad Ratna award:

1. The award was established in 2010 to honor the top performing MPs.

2. The award was established based on the recommendation given by Dr. APJ Abdul Kalam.

3. The selection committee for the award is headed by the Lok Sabha speaker.

Choose the correct statement/s:

A. 1 only

B. 1 & 2 only

C. 2 & 3 only

D. All of the above

130. Which of the following fundamental rights in India is/are available exclusively to minority communities only?

A. Article 29 & 30

B. Article 29 only

C. Article 30 only

D. Article 28, 29 & 30

131. Consider the following statements with regards to the Olive Ridley Turtles:

1. They are a part of Schedule I of the Wildlife Protection Act, 1972.

2. They are best known for their unique mass nesting called Arribada.

3. Odisha's Gahirmatha Marine Sanctuary is known as the world's largest rookery (colony of breeding animals) of sea turtles.

Choose the correct code:

A. 1 & 2 only

B. 2 & 3 only

C. 1 & 3 only

D. All of the above

132.   Which of the following sets of nations represent BIMSTEC members?

A. India, Pakistan, Nepal

B. Nepal, Bhutan, Myanmar

C. Sri Lanka, Thailand, Cambodia

D. India, Maldives, Thailand

133.   With reference to India's biodiversity, Ceylon frogmouth, Coppersmith barbet, Graychinned minivet and White-throated redstart are

A. Birds

B. Primates

C. Reptiles

D. Amphibians

134.   Which amongst the following is the best description of the Lasker Award:

A. It is awarded annually to honor a living architect or architects

B. It is an award for achievements in newspaper, magazine and online journalism

C. It is a prize awarded annually to grassroots environmental activists

D. It is awarded to persons who have made major contributions to medical science

135.   Gidda is a popular folk dance form practiced in the State of

A. Goa

B. Himachal Pradesh

C. Odisha

D. Punjab

136.   With respect to the Scheduled Tribes, which of the following statements is/are correct?

1. Presidential order under Article 342 regarding scheduled tribes is final. Court cannot add or subtract any entry.

2. A person declared as Scheduled Tribe in one state cannot claim benefit of his status for employment, education or land allotment in any other state on migration.

Options:

A. 1 only

B. 2 only

C. Both

D. None

137.   Consider the following statements:

1. Natural rubber is a polymer of Styrene

2. Rubber Board's headquarters is located at Kottayam in Kerala.

3. The world's first Genetically Modified (GM) rubber plant was planted in the state of Assam

Which of the statements given above is/are correct?

A. 1 and 2 only

B. 2 and 3 only

C. 1 and 3 only

D. 1, 2 and 3

138.   How is permaculture farming different from conventional chemical farming?

1. Permaculture farming discourages monocultural practices but in conventional chemical farming, monoculture practices are predominant.

2. Conventional chemical farming can cause an increase in soil salinity but the occurrence of such phenomenon is not observed in permaculture farming.

3. Conventional chemical farming is easily possible in semi-arid regions but permaculture farming is not so easily possible in such regions.

4. Practice of mulching is very important in permaculture farming but not necessarily so in conventional chemical farming.

Select the correct answer using the code given below.

A. 1 and 3

B. 1, 2 and 4

C. 4 only

D. 2 and 3

139.   Consider the following statements with respect to Cantonment Boards:

1.   It is created by the Central Government but administered by the State Government.

2.   It consists of partly elected and partly nominated members.

3.   The elected and nominated members hold office for a term of five years

Which of the statements given above is/are correct?

A.   1 and 2 only

B.   2 only

C.   1 and 3 only

D.   1, 2 and 3

140.   With respect to Alopecia areata, which of the following statements is/are correct:

1.   It is a common autoimmune disorder that often results in unpredictable hair loss.

2.   This can develop anywhere on the body.

3.   The condition can affect anyone regardless of age and gender.

Options:

A.   1 only

B.   2 and 3 only

C.   3 only

D.   1, 2 and 3

141.   Which of the following differences between hard and soft corals is/are correct?

1.   Hard corals secrete calcium-based skeletons, soft corals do not.

2.   Hard corals are referred to as reef-building corals whereas soft corals do not contribute to the reef-building activity.

Options:

A.   1 only

B.   2 only

C.   Both

D.   None

142.   Consider the following statements:

1.   The right to strike is a fundamental right.

2.   Parliament and the State legislatures have the power to restrict or abrogate the fundamental rights of members of the armed forces.

Which of the statements given above is/are correct?

A.   1 only

B.   2 only

C.   Both

D.   None

143.   Which one of the following is a reason why astronomical distances are measured in light-years? [UPSC 2021]

A.   Distances among stellar bodies do not change

B.   Gravity of stellar bodies does not change

C.   Light always travels in a straight line

D.   Speed of light is always the same

144.   Consider the following statements with regards to Rhinos in India:

1.   Launched in 2005, Indian Rhino Vision 2020 was an ambitious effort to attain a wild population of at least 3,000 greater one-horned rhinos spread over seven protected areas in the Indian state of Assam by the year 2020.

2. Wild-to-wild translocations were an essential part of IRV2020 – moving rhinosfrom densely populated parks like Manas National Park to ones in need of morerhinos, like Kaziranga National Park.

3. The five rhino range nations (India, Bhutan, Nepal, Indonesia and Malaysia) have signed a declaration 'The New Delhi Declaration on Asian Rhinos 2019' for the conservation and protection of the species.

Choose the correct statement/s:

A.   1 only

B.   1 & 3 only

C.   2 & 3 only

D.   All of the above

145.   Consider the following statements with regards to BIMSTEC:

1.   Initially, it was formed with four Member States with the acronym 'BISTEC' (Bangladesh, India, Sri-Lanka and Thailand Economic Cooperation).

2. It became renamed 'BIMST-EC' in 1997, following the inclusion of Myanmar.

3. With the admission of Nepal and Bhutan in 2004, the name of the grouping was changed to 'Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation' (BIMSTEC).

Choose the correct code:

A.   1 & 2 only

B.   2 & 3 only

C.   1 & 3 only

D.   All of the above

146.   The MNREGA wages are fixed according to the changes in

A.   Consumer Price Index – Agriculture Labor

B.   Consumer Price Index – Rural Laborer

C.   Consumer Price Index – Industrial Workers

D.   Consumer Price Index – Rural Urban Combined

147.   Consider the following statements with regards to Sariska Tiger Reserve:

1.   Kankarwadi fort is located in the center of the Reserve and it is said that Mughal emperor Aurangzeb had imprisoned his brother Dara Shikoh at this fort in struggle for succession to the throne.

2.   The Reserve also houses a famous temple of Lord Hanuman at Pandupole related to Pandavas.

3.   Sariska is the first tiger reserve to have successfully relocated Royal Bengal tigers in India.

Choose the correct code:

A.   1 & 2 only

B.   2 & 3 only

C.   1 & 3 only

D.   All of the above

148.   In India, separation of judiciary from the executive is enjoined by

A.   the Preamble of the Constitution

B.   a Directive Principle of State Policy

C.   the Seventh Schedule

D.   the conventional practice

149.   ISRO's 'Project NETRA', recently seen in the news, is best defined as:

A.   an early warning system in space to detect debris and other hazards to Indian satellites

B.   an early warning system in space to detect any harmful object coming towards the Earth, specifically India

C.   a part of India's indigenous navigation system

D.   a program to ensure 24×7 surveillance of India's border areas

150.   Consider the following statements with regards to Pradhan Mantri Jan Arogya Yojana:

1.   Beneficiaries are offered reimbursement of their medical expenditures upto Rs. 5 Lakh per family.

2.   The funding for the scheme is shared – 60:40 for all states and UTs with their own legislature, 90:10 in Northeast states and Jammu and Kashmir, Himachal and Uttarakhand and 100% Central funding for UTs without legislature.

3.   The National Health Authority (NHA) has been constituted as an autonomous entity under the Society Registration Act, 1860 for the effective implementation of PM-JAY in alliance with state governments.

Choose the correct code:

A.   1 & 2 only

B.   2 & 3 only

C.   1 & 3 only

D.   All of the above

151.   Consider the following statements with regards to the International Space Station:

1.   The space station flies at an average altitude of 400 miles above Earth.

2.   An international partnership of five space agencies from 15 countries operates the International Space Station.

3.   It can be seen from Earth without the use of a telescope by night sky observers who know when and where to look.

Choose the correct code:

A.   1 & 2 only

B.   2 & 3 only

C.   1 & 3 only

D.   All of the above

152. **The Vital-Vidhvansak, the first monthly journal to have the untouchable people as its target audience was published by**

A. Gopal Baba Walangkar

B. Jyotiba Phule

C. Mohandas Karamchand Gandhi

D. Bhimrao Ramji Ambedkar

BYJU'S EXAM PREP | IAS

ATTENDANCE NO.: _____   ☞ To be filled by the Supervisor

केन्द्र	विषय		विषय कोड		अनुक्रमांक	
CENTRE	**SUBJECT**		**S. CODE**		**ROLL NUMBER**	

पुस्तिका सिरीज **BOOKLET SERIES**

विषय **SUBJECT**

अनुक्रमांक **ROLL NUMBER**

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SUBJECT: (0)(0) (1)(1) (2)(2) (3)(3) (4)(4) (5)(5) (6)(6) (7)(7) (8)(8) (9)(9)

ROLL NUMBER: (0)(0)(0)(0)(0)(0)(0) (1)(1)(1)(1)(1)(1)(1) (2)(2)(2)(2)(2)(2)(2) (3)(3)(3)(3)(3)(3)(3) (4)(4)(4)(4)(4)(4)(4) (5)(5)(5)(5)(5)(5)(5) (6)(6)(6)(6)(6)(6)(6) (7)(7)(7)(7)(7)(7)(7) (8)(8)(8)(8)(8)(8)(8) (9)(9)(9)(9)(9)(9)(9)

निर्देश : **DIRECTIONS:**

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उदाहरण **EXAMPLE**
ⓐ ⓑ ● ⓓ

निरीक्षक पुस्तिका सिरीज काला बाल प्वाइंट पैन से कूटबद्ध करें

BOOKLET SERIES to be coded by Invigilator with Black Ball Point Pen
ⓐ ⓑ ⓒ ⓓ

निरीक्षक काला बाल प्वाइंट पैन से आधार करें

Initials of Invigilator in Black Ball Point Pen

Questions 1–160, each with options ⓐ ⓑ ⓒ ⓓ

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PLEASE DO NOT MAKE ANY MARKS IN THIS AREA

Left-side numbers (top to bottom markers) and right-side: 1–63

Bottom numbers: 47 46 45 44 43 42 41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

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1	B		21	A
2	C		22	A
3	C		23	C
4	C		24	B
5	B		25	D
6	C		26	A
7	D		27	B
8	C		28	C
9	A		29	B
10	A		30	A
11	D		31	C
12	C		32	D
13	B		33	C
14	A		34	D
15	B		35	C
16	D		36	A
17	A		37	C
18	D		38	D
19	B		39	A
20	C		40	A

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41	D
42	A
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52	B
53	A
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69	D
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74	C
75	D
76	D
77	D
78	A
79	C
80	A

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81	D
82	C
83	C
84	A
85	D
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87	D
88	D
89	D
90	B
91	B
92	C
93	A
94	D
95	C
96	B
97	A
98	A
99	C
100	C

101	B
102	C
103	D
104	B
105	B
106	B
107	B
108	D
109	D
110	C
111	D
112	D
113	B
114	D
115	B
116	C
117	C
118	B
119	D
120	A

CLICK HERE TO READ EXPLANATION

121	C
122	B
123	B
124	A
125	D
126	C
127	C
128	D
129	B
130	C
131	D
132	B
133	A
134	D
135	D
136	C
137	B
138	B
139	B
140	D

141	C
142	D
143	D
144	B
145	D
146	A
147	D
148	B
149	A
150	B
151	B
152	A

CLICK HERE TO READ EXPLANATION

MAINS PRACTICE QUESTIONS

GS Paper 1

Indian Society and social Issues

1.   Highlight the need for reforms in India's justice system, with a special emphasis on the condition of jails across the country. (250 words; 15 marks)

2.   Examine the prominent provisions of the National Child Policy. How far has the government succeeded in implementing these provisions? (250 words; 15 marks)

3.   Examine the challenges and opportunities surrounding the participation of women in our workforce. (250 words; 15 marks)

Geography

1.   Examine the National Water Policy of India and discuss its potential in promoting water use efficiency in agriculture. (250 words; 15 marks)

2.   Is it feasible to adopt the mechanism of daylight saving in India? Discuss the implications of adopting such a system. (250 words; 15 marks)

GS Paper 2

Polity and Governance

1.   The victim suffers only the injury, but the offender under the retributive justice suffers both the injury and the anxiety of death penalty. Examine. (10 Marks, 150 Words)

2.   Highlight some of reasons behind a large number of medical students in India opting for medical education from nations such as Ukraine, Russia and China. What initiatives can be taken to fulfill their needs within the country? (250 words; 15 marks)

3.   What is 'Sealed Cover' Jurisprudence? Examine its rationale and the criticism against this judicial practice. (250 words; 15 marks)

4.   Illustrate the constitutional debates on the role of the Governor and how the position has fared in Centre-State relations. (250 words; 15 marks)

5.   How is the Indian concept of secularism different as compared to the Western form of secularism? Why are these differences essential in the context of Indian societal composition? (250 words; 15 marks)

6.   10% reservation for the EWS category is 'a solution in search of a problem'. Do you agree? Discuss. (250 words; 15 marks)

7.   Elaborate on the merits of having an Indian Legislative Service. How can a new all India service be created in India? (250 words; 15 marks)

8.   Explain how the draft data accessibility policy risks prioritizing commercial interests over privacy. (10 Marks, 150 Words)

9.   Women's representation in India's higher judiciary has remained much below par since India's independence. Discuss. (250 words; 15 marks)

10. Election Commission of India's proposal to extend postal ballot facility for NRIs will transform the electoral politics in the country. Comment. (10 Marks, 150 Words)

11. Discuss the possible reasons as to why overqualified candidates seek middle and lower rung government jobs in India. (10 Marks, 150 Words)

12. India's criminal justice regime is beset with problems which seem ingrained in not only the constitutive fabric of institutions, but also in the psyche of their functionaries. (250 words; 15 marks)

International Relations

1.   Assess India's stand of 'abstention' on the UN resolutions moved against Russia for its invasion of Ukraine. Does it go against India's long standing policy of nonviolence and peaceful settlement of disputes? (250 words; 15 marks)

2.   Will sanctions against Russia lead to a global commodity crunch? Examine its impact on long-term supply of wheat, oil, metals and other goods. (250 words; 15 marks)

3.   Indian students abroad have been facing increasing risks to their safety and well-being. Hence, agreements that oblige host countries to ensure the welfare of Indian students during crises should be given importance. Analyse. (250 words; 15 marks)

4.   Is the de facto states model followed for Abkhazia, Transnistria and South Ossetia a possible way out for the Russia-Ukraine conflict? Critically Examine. (10 Marks, 150 Words)

5.   Write a note on the Geneva Convention and evaluate its success. (10 Marks, 150 Words)

6.   The launch of the vibrant village programme to improve social and financial infrastructure in remote habitations along the border with China is seen as a matter of vital interest to India. Discuss. (10 Marks, 150 Words)

7.   Discuss the protocols and agreements in place between India and Pakistan for regulating missile tests. (10 Marks, 150 Words)

8.   Failure to intervene in the Russia-Ukraine conflict is yet another example of the United Nations' futility. Discuss. (250 words; 15 marks)

9.   Discuss the potential of India – Australia relationship. Does the relationship have significance beyond the Indo-Pacific as well? (250 words; 15 marks)

10.   Discuss the possible reasons for the economic turmoil in Sri Lanka and its consequences on India. (15 Marks, 250 Words)

11. Ambiguity in defining the border in Ladakh have led to disputes and military stand-offs between India and China. Discuss appropriate steps to be taken to restore peace in the region.(10 Marks, 150 Words)

12.   BIMSTEC is in need of a framework to tackle the specific challenges confronting the Bay of Bengal region. Explain the statement with the help of relevant examples. (15 Marks, 250 Words)

13. Examine how the current political situation in Myanmar and its proximity to Russia will affect India's interests? (250 words; 15 marks)

14.   The signing of Abraham Accords has led to shifting of the geopolitical fulcrum in West Asia. Examine. (250 words; 15 marks)

Social Justice

1.   Discuss the salient features of the Rights of Persons with Disability Act, 2016. How far has the act been successful in improving the lives of the people covered under the act? (250 words; 15 marks)

GS Paper 3

Economy

1.   Following Russia's invasion of Ukraine, the economic costs of the conflict in Eastern Europe threaten to stall the shaky global recovery from the COVID-19 pandemic. In this context, examine the risk of global stagflation and measures that need to be taken by India. (250 words; 15 marks)

2.   What are the challenges involved in developing inland water transport in India and its advantages? What steps need to be taken to tap its potential? (250 words; 15 marks)

3.   Elaborate on the tourism sector's potential of being a mass job producer in India. What are some of the roadblocks being faced by this sector? (250 words; 15 marks)

4.   An effective way to improve tax compliance could be to improve the provision of benefits and make the government more accountable. Analyse. (10 Marks, 150 Words)

5.   What are some of the challenges India is facing while expanding its solar power capacity? Suggest possible ways to overcome the same. (250 words; 15 marks)

6.   Discuss the reasons behind the rise in popularity of Electric Vehicles in India. Identify the roadblocks that are still inhibiting the sector from achieving its true potential. (250 words; 15 marks)

7.   Discuss the issues that hinder the growth of Indian railways and suggest policy initiatives to revitalize the Indian Railways.(10 Marks, 150 Words)

8.   Will a conditional WTO nod to remove intellectual property rights on the use of COVID vaccines help? Critically Examine. (10 Marks, 150 Words)

9.   The Fourth industrial revolution will help in achieving better performance in the textile industry. Do you agree? Justify. (15 Marks, 250 Words)

10. Despite the surge in merchandise exports, India's balance of trade still remains negative. Identify the hurdles being faced in turning around India's balance of trade. (250 words; 15 marks)

11. Discuss the factors that are contributing to India's export growth and the risks that threaten to stall the momentum. (15 Marks, 250 Words)

12. Lack of representation for marginalized groups as well as the heavy clustering of start-ups in certain regions have led to entrepreneurial disparities. In the light of the statement, discuss the existing gaps and challenges with respect to the Start Up India initiative. (15 Marks, 250 Words)

13. India's journey from chronic food shortage to surplus producer and partnering with the WFP has lessons for the developing world. Comment. (250 words; 15 marks)

14. Coal mining and coal block allocations have always been rife with controversy in India. Give reasons that lead to these problems. (250 words; 15 marks)

Environment and Ecology

1.   Despite multiple bold announcements, the fight against climate change seems to be a losing cause in India. Do you agree? Elaborate. (250 words; 15 marks)

2.   Restoring forests should not just be about planting trees, it should also be in line with local biodiversity needs. Elaborate. (10 Marks, 150 Words)

3.   What is a Datacenter? Explain the role played by datacenters in adding to the global carbon footprint. (250 words; 15 marks)

Science and Technology

1.   Can Artificial Intelligence and Machine Learning put judiciary on the fast track? Analyse. (250 words; 15 marks)

2.   Discuss the risks associated with Space Debris and suggest measures to reduce the threats posed by them. (10 Marks, 150 Words)

3.   Discuss the reasons given by some experts against the idea of expanding nuclear power generation in India. How do these cons measure against the pros of nuclear energy? (250 words; 15 marks)

4.   'Atmanirbharta in defense is the only deterrent that is guaranteed to work in the future against our adversaries.' Do you agree? Elaborate. (250 words; 15 marks)

5.   It is time for India to focus on Artificial Intelligence if we want to remain in the race for becoming a superpower. Discuss.(250 words; 15 marks)

Security and Defence

1.   The real wars in the future would be fought online. In this context, give an account of India's preparedness to handle cyber security attacks from around the world. (250 words; 15 marks)

2.   Social media platforms have gone by the mantra of "tech neutrality" to avoid taking decisions that may be considered political. Critically evaluate the need for social media norms particularly while dealing with conflicts and violence. (250 words; 15 marks)

Disaster Management

1.   With a possibility of a nuclear plant disaster turning into an apocalyptic event being much more than other power generation methods, it is time for the world to look beyond nuclear energy. Comment. (250 words; 15 marks)

GS Paper 4

Ethics

1.   Is war ever morally justified? Support your answer with the help of Just war theories. (10 Marks, 150 Words)

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INTERVIEW TRANSCRIPT

Candidate Details:
- Name: Varsha Meena
- AIR: 580 (CSE 2017)
- Chairperson: Manoj Soni
- Duration: 35 minutes
- Hometown: Dholpur, Rajasthan

About Varsha Meena
- Optional Subject: Geography
- Work Experience: No work experience
- Education: B.Tech in Electrical engineering, IIT Roorkee
- Hobbies:
    * Playing volleyball, origami, clay art
    * Gold medalist in Inter-IIT sports meet
    * Captain of IIT Roorkee girls' Volleyball team

Interview

Questions based on DAF and follow-up questions
- So you are from Dholpur, how does it feel like to come to Dholpur House?
- An important historical incident of Dholpur
- Why do you think an IAS officer is more important than an electrical engineer?
- Why do you think you are suitable for IAS?

Agriculture
- How far was the Green Revolution successful?
- What were the key elements of the Green Revolution?
- What are the problems our agriculture sector is facing?
- What is a greenhouse?
- Has the share of agriculture in GDP increased or decreased?

Science and Technology
- What are your views on artificial intelligence?
- Give an example where complete automation has happened in India?

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Economy

- About the evolution of the telecommunication sector in India.
- Recently there was a player of the telecom industry in news? (Reliance Jio)
- So, has TRAI raised any objection regarding the schemes of Jio?
- What are the issues in the power sector in India?
- What are the issues with the manufacturing sector in India?
- What are smart cities?
- How are smart villages important for the success of smart cities?
- What are a few things that India should learn from China?
- Poverty, poor education and corruption are three main problems India is facing - so what will be your priority while tackling these issues?

Security

- How far has the Indian government been successful in curbing insurgency in India?
- About Punjab insurgency.

Interview Guidance Program

- A detailed roadmap for Interview Preparation with a special focus on Detailed Application Form (DAF).
- Mock interview sessions with highly experienced panellists including retired Civil Servants and Senior Bureaucrats.
- Well simulated ambience akin to the UPSC Personality Test.
- Performance analysis and evaluation of strengths and weaknesses.

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Customs & Excise)

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Study Material
In-depth coverage of syllabus which includes the following study material: Indian Polity by M Laxmikanth, India's Ancient Past by R S Sharma, History Of Modern India by Bipan Chandra, Ethics, Integrity and Aptitude by P N Roy Chowdhury and G Subba Rao +15 more titles.

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All the three stages of the Civil Services Exam – Prelims, Mains and the Interview require the aspirants to be up-to-date with the current affairs. Regular and in-depth current affairs updates will help you stay updated.

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- **YouTube Videos:** International Relations This Week, Economy This Week, Target Prelims etc

- Objective and Descriptive Type Unit Tests

- **Daily Updates on Free IAS Prep Website:** Comprehensive News Analysis, PIB Summary

- Gist of Yojana, Kurukshetra and Economic and Political weekly magazines

- Current Affairs Magazine

- **Test Series** – Prelims and Mains

- Interview Guidance