

06 Jun 2023: UPSC Exam Comprehensive News Analysis

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A. GS 1 Related

Nothing here for today!!!

B. GS 2 Related

Category: EDUCATION

1. NIRF: IIT-Madras retains number one spot

Syllabus: Education.

Mains: NIRF rankings 2023.

Prelims: NIRF rankings 2023.

Details

- The [National Institutional Ranking Framework \(NIRF\)](#) released the India Rankings 2023 of higher education institutions.

Figure: List of Top 10 Educational Institutions as per NIRF 2023

Rank	Institution	Score
1	Indian Institute of Technology, Madras	86.69
2	Indian Institute of Science, Bengaluru	83.09
3	Indian Institute of Technology, Delhi	82.16
4	Indian Institute of Technology, Bombay	81.28
5	Indian Institute of Technology, Kanpur	77.23
6	All India Institute of Medical Sciences, Delhi	72.14
7	Indian Institute of Technology, Kharagpur	71.82
8	Indian Institute of Technology, Roorkee	71.66
9	Indian Institute of Technology, Guwahati	68.78
10	Jawaharlal Nehru University, Delhi	67.44

Source: The Hindu

- IIT-M retained its first position in the overall ranking for the fifth consecutive time. The Indian Institute of Science, Bengaluru became the best university for 8 years in a row.

Category	Institute
Best College	Miranda House
Best Management Institute	IIM-Ahmedabad

Best Institute in the Field	National Institute of Pharmaceutical Education and Research, Hyderabad
Best Medical College	All India Institute of Medical Sciences, Delhi
Top Dental College	Saveetha Institute of Medical and Technical Sciences, Chennai
Best Law College	National Law School of India University, Bengaluru
Best Engineering College	Indian Institute of Technology, Madras (8th consecutive time)
Best Research Institution	IISc-Bengaluru (3rd consecutive year)

Other Details:

- The National Institute of Pharmaceutical Education and Research, Hyderabad topped the ranking in the field of pharmacy.
- The first place in architecture was given to IIT-Roorkee.
- In agriculture and allied sectors, Indian Agricultural Research Institute stood first.
- Delhi colleges maintained their dominance in the ranking with 5 of the first 10 colleges.
- NIRF rankings serve as an important tool for students in selecting colleges/universities.
- In 2023, around 5,543 unique institutions applied for NIRF rankings.



Nut Graf: The National Institutional Ranking Framework (NIRF) released India rankings for the year 2023. The Indian Institute of Technology (IIT), Madras topped the list. The ranking holds significance as it gauges the performance of higher educational institutions in the country.

C. GS 3 Related

Category: SCIENCE AND TECHNOLOGY

1. The decade-long search for a rare Higgs boson decay continues

Syllabus: Developments in the field of science and technology.

Mains: Higgs boson.

Prelims: Higgs boson.

Details

- A very rare decay process was observed by the physicists working with the [Large Hadron Collider \(LHC\)](#) particle smasher at CERN (Europe).
 - The Higgs boson decayed into a Z boson particle and a photon.

Also read: [Higgs Boson](#)

Higgs Boson:

- It is a type of boson, a force-carrying subatomic particle.
- The Higgs boson carries the force that a particle experiences in the Higgs field.
 - The Higgs field is an energy field that is present in the entire universe.
 - For instance, when an electron interacts with the Higgs field, the effect it experiences is due to its interaction with the Higgs boson.
- It should be noted that the stronger a particle's interaction with the Higgs boson, the more mass it has.
- However, photons don't interact with Higgs bosons as they have no mass.
 - Photons are particles of light.

Analysis of the Study:

- As discussed above, photons don't interact with the Higgs boson. But the research shows that the Higgs boson decayed into a Z boson and photon.
 - This is because of spacetime.
 - The standard model theory shows that the Higgs boson will decay to a Z boson and a photon 0.1% of the time.
- It should be noted that the Higgs boson is a heavy particle and unstable and thus decays into lighter particles.
- Moreover, the Z boson is also unstable which further decays into two muons (3% of the time).
- ATLAS and CMS, the two detectors that announced the new measurement found the decay earlier in 2018 and 2020. They combined their data and increased their statistical precision.

Challenges:

- There is still some uncertainty about the result, reflecting the rarity of the decay pathway.
- Despite several accurate predictions by Standard Model, some questions remain unanswered. For example, what is dark matter? And why Higgs Boson is so heavy?

Nut Graf: A fascinating new result has been discovered about the Higgs boson, where it is found to decay into a Z boson particle and a photon. However, it is still not 100% certain due to the rarity of the decay pathway.

D. GS 4 Related

Nothing here for today!!!

E. Editorials

Category: POLITY

1. A word of advice to the Delhi police

Syllabus: GS-2, Important judicial cases.

Mains: Protests by Wrestlers.

Context: Protests by India's medal-winning wrestlers.

Background Details:

- On 28th April 2023, cases of sexual harassment were registered by the Delhi Police against the president of the Wrestling Federation of India (WFI).
 - The cases are registered under the [Protection of Children from Sexual Offences \(POCSO\) Act](#) and outraging the modesty of a woman under the IPC.
 - The investigation of the two cases is under process.
- Wrestlers are constantly demanding the arrest of the accused.

For details, read here: [Wrestlers' Protest \[What the Law Says\]](#)

Associated Concerns:

- Some of the allegations date back to 2022, reflecting a delay in lodging a complaint.
 - If the delay is more than three months, the reasons for the delay need to be explained satisfactorily.

- If a complaint has elements of a cognizable offence, then the mandate of the Supreme Court (in *Lalita Kumari vs Govt. of Uttar Pradesh and others* (2014)) should not be violated.
- The veracity (accuracy) of allegations (of a cognizable offence) should not be inquired before registering an FIR.
- In this matter, the insistence of the Delhi police on holding a preliminary inquiry and a delay in registering cases does not seem to be justified.
- As per the conditions laid down in *Selvi vs State of Karnataka* (2010), narco-analysis tests are conducted on a suspect or on a witness (but not on a victim).
- Moreover, the statement recorded by a judicial magistrate under Section 164 of the [Criminal Procedure Code \(CrPC\)](#) is useful only if the judicial magistrate is called by the trial court for examination.

Conditional Arrest:

- Allegations pertaining to sexual assault at the workplace may attract Section 8 or/and Section 10 (punishment for aggravated sexual assault as the president of the WFI was in the position of authority) or/and Section 12 (sexual harassment) of the POCSO Act in the case of a minor victim.
- It will attract Section 354 (outraging modesty of a woman) or/and 354A (sexual harassment) of the [IPC](#) in the case of other victims.
- As per section 41 of CrPC, an arrest is not mandatory unless it is justified (as highlighted by SC in *Arnesh Kumar vs State of Bihar & Anr.* (2014)) that evidence was tampered with to prevent a proper investigation of the offence.

Way Ahead:

- The Delhi Police should complete the investigation expeditiously and present the final report in court.
 - In the case of offence punishable with imprisonment of less than 10 years, the investigation should be completed within 60 days of arrest to prevent the detainee from being released on bail.
- If the victims are consistent in their allegations and protesting at such a scale, their allegations should not be falsified.
- If the victims are not satisfied with the progress of the case, they can approach the Delhi High Court.

Also read: [Sexual Harassment at Work Place](#)

Nut Graf: Any delay in the investigation of the wrestlers' case will not only invite adverse consequences but will also impact the public confidence in Delhi Police. The investigation should be completed in a timely manner, considering the importance of medal-winning wrestlers for the country.

Category: INTERNATIONAL RELATIONS

1. In the short term, stabilise the Line of Actual Control

Syllabus: GS-2, India and its neighbourhood.

Mains: India-China relations.

Introduction:

- India and China are incurring huge expenditures in inducting men, materials, and equipment close to the LAC to ensure better defence preparedness.
- It is observed that there is an increase in rhetoric and jingoism in both countries calling for more aggression.

Also read: [India-China Conflict - Galwan Valley Clash](#)

Current Status of India-China Relations:

- India's External Affairs Minister S. Jaishankar stated at a media group meeting that the situation along the LAC is "fragile and quite dangerous".
- The state of affairs between both countries is not sustainable and can trigger a major conflict that can adversely impact the world - both politically and economically.
- China considers Ladakh and Arunachal Pradesh as two of the five fingers that are attached to the Tibetan Palm and thus raises territorial claims on these two regions.
- Similarly, India is not willing to make any concessions in favour of China.
- LAC has the potential to escalate into a full-fledged war. Moreover, it will not yield any positive results for India.
- It should be noted that an increase in the visibility of the movement of opposing forces (through surveillance technology) raises aggression.
- It is further complemented by troop density, better roads, improved logistics, and availability of aviation assets. This further increases the face-offs and clashes.

Also read: [India - China Relations](#)

Agreements and Associated Inadequacies

- The agreements between both countries are based on the premise that LAC is defined and understood by both neighbours. However, there is a lack of clarity in large segments.

- According to Article I of the 1993 Agreement, joint mechanisms to verify and settle LAC-related disputes should be established.
 - The Working Mechanism for Consultation and Coordination on India-China Border Affairs (WMCC) was created after 19 years in 2012.
 - Moreover, it meets biannually but has little to show in terms of real results.
- The LAC has only four Border Personnel Meeting (BPM) points.
 - Lack of BPM hinders constructive engagement and escalates conflicts.
 - Additionally, the Lipulekh BPM Point proposed in the Article V of the 2005 Protocol has yet to be established.
- Article II of the 1993 Agreement and Articles II and III of the 1996 Agreement have proposed a mutually agreed reduction and redeployment of forces along the LAC.
 - This has not seen any progress.

Way Ahead:

- Both countries should take short-term but effective and pragmatic measures to resolve the dispute.
- There is a need to identify reasons for rising clashes on the LAC and work on solutions.
- The author suggests that the LAC should be converted into a Line of Control (LC) by delineating it on the map and on the ground without prejudice to border claims. This can be implemented if both sides display maturity.
- The disputed areas along LAC can be declared 'No Entry Zone' allowing both the countries to patrol other mutually agreed areas.
- The option of joint patrolling in disputed areas can be explored. This would help in building confidence and maintaining the status quo.
- Existing agreements, confidence-building measures, and engagement mechanisms should be strengthened.

Also read: [UPSC Exam Comprehensive News Analysis. June 4th, 2023](#)

***Nut Graf:** The relations between India and China remain fragile since the Doklam and Galwan crises. There are inadequacies in various agreements between the two countries, which need to be resolved in a timely manner. Both countries should act maturely and maintain peace and stability in the region.*

Category: SCIENCE AND TECHNOLOGY

1. Dealing with deepfakes

***Syllabus:** GS-3, Applications of important discoveries in Science and Technology.*

Mains: *Deepfakes and associated concerns.*

Prelims: *Deepfake Technology.*

Details:

- Deepfake is produced by machines using deep learning. It contains false information.
- Deepfaking is a significant 'upgrade' from photoshopping images, as it transcends the limits of human skill.
- [Deepfakes](#) have been mischievously used to:
 - Create videos of Barack Obama verbally abusing Donald Trump
 - Hack facial recognition software, etc.
- These tools falsify media elements at a large scale. This causes the viewers to believe certain information to be 'true' because it was given by a machine.

Significance of Deepfake:

- Deepfake technology can be used for good reasons also. For example, in the U.S., a voice-claiming initiative was founded to restore the voices of those who had lost it to amyotrophic lateral sclerosis.
- It can also be used in cinema, music, and gaming. It can also be used in understanding and reinterpreting history.

Way Ahead:

- It is important for individuals to become scientifically, digitally, and public-spiritedly literate.
- Some amount of regulation or self-restraint is required.
 - China has strongly responded by banning deepfaked visuals whose creators don't have permission to modify the original material and materials which aren't watermarked accordingly.
- It is important to democratically allow the technology to flourish as it is a powerful future technology.
- However, the use of deepfakes should not have planet-wide consequences like solar geoengineering.

Also read: [Cybercrime](#)

Nut Graf: *Deepfake technology has both pros and cons. It can be used to rupture the social fabric by spreading false news or can be used to solve some real-time problems. The technology should be carefully regulated giving ample scope for innovations in the future.*

1. Satellites, AI to help certify fields growing organic cotton

Syllabus: GS 3- Science and Technology.

Prelims: AI to identify organic cotton fields.

Details

- The European Space Agency (ESA), Global Organic Textile Standard (GOTS) and Marple (an AI company) are aiming to combine data from satellite images and [artificial intelligence \(AI\)](#) to keep track of cotton certification in India.
- It will categorize cotton fields in India in line with cultivation standards.
- It will help in generating accurate estimates of organic cotton in specific regions.
- Moreover, the initiative will support those regions that demonstrate potential for a seamless transition to organic cultivation.
- The main objective of the initiative is to bolster the integrity of organic cotton and prevent fraud throughout the supply chain.
- It will also improve economic opportunity by bringing a greater number of small-scale farmers into the certified organic sector and supply chains.
- It would escalate consumer demand.
- The project was undertaken on a pilot basis in Uzbekistan (2021). It showed 98% accuracy in differentiating organic and conventional cotton fields.
- The first results in India are expected to be released in late 2023.

Also read: [Cotton Crops: Cultivation and Export](#)

2. India, U.S. finalise road map for defence industrial cooperation

Syllabus: GS 2- International Relations.

Prelims: India-U.S. defence industrial cooperation.

- India and the U.S. together concluded a road map for 'Defence Industrial Cooperation'.
- It will guide the cooperation policy in upcoming years in areas of high technology.
- The U.S. Secretary of Defence Lloyd Austin was on a two-day visit to India. He was given a tri-service guard of honour.

- Both countries reviewed the bilateral defence cooperation and agreed to maintain the momentum of engagement with each other.

G. Tidbits

1. Kerala CM launches first phase of K-FON

- The first phase of the Kerala Fibre Optic Network (K-FON) was commissioned by Chief Minister Pinarayi Vijayan on 5th June 2023.
- It will provide free Internet access to nearly 20 lakh below-poverty-line (BPL) families. It will connect 30000 government institutions.
- It was highlighted that Universal Internet access is important to stay tuned with the changing world.

2. Kerala CM launches first phase of K-FON

- A draft of what is called the “Delhi Declaration”, a series of commitments to “responsible state behaviour in cyberspace” for [G-20](#) member countries was outlined on 5th June 2023.
- It is drawn from the existing non-binding agreements under the United Nations.
- The draft was introduced at a G-20 business event on cybersecurity.
- It was highlighted that Microsoft Corporation had helped in drafting the declaration.
- It is important to build resilience, have a competent cyber workforce, establish standard operating procedures, and have international cooperation to safeguard cyberspace.

H. UPSC Prelims Practice Questions

Q1. Consider the following statements regarding World Environment Day (WED): (Level-Difficult)

1. It has been celebrated since 1973 under the aegis of UNEP
2. For 2023, the theme is “Solutions to Plastic Pollution”, and it is being hosted by Cote d’Ivoire
3. India has been the host of World Environment Day twice

How many of the above are true?

- a. Only 1 statement
- b. Only 2 statements
- c. Only 3 statements

d. None

Answer: c

Explanation:

- Statement 1 is correct: In 1973, the first WED was held with the theme "Only One Earth".
- Statement 2 is correct: For 2023, the theme is "Solutions to Plastic Pollution", and it is being hosted by Cote d'Ivoire.
- Statement 3 is correct: India has been the host of World Environment Day twice in 2011 and 2018.

Q2. Project 75 I is related to which of the following? (Level- Easy)

- a. Indigenous construction of submarines in India.
- b. Immunizing at least 75% of the global population against HPV.
- c. Construction of a Space Station by China.
- d. Protection of jobs against the rise of Artificial Intelligence.

Answer: a

Explanation:

- Project-75 (I) envisages the indigenous construction of six modern conventional submarines with contemporary equipment, weapons & sensors.

Q3. How many of the following statements are true regarding India Africa Forum Summit? (Level- Moderate)

1. It was first held in the year 2008.
2. The 3rd summit did away with the Banjul Formula of inviting the heads of state.
3. The 4th Summit is to be held in Africa in 2023.

Options:

- a. Only 1 statement
- b. Only 2 statements
- c. Only 3 statements
- d. None

Answer: b

Explanation:

- Statement 1 is correct: It was first held from April 4 to April 8, 2008, in New Delhi, India.
- Statement 2 is correct: The 3rd summit did away with the Banjul Formula of inviting the heads of state.
- Statement 3 is not correct: The 4th summit is not yet scheduled.

Q4. How many of the following statements are correct? (Level- Difficult)

1. mRNA vaccines lead to the production of foreign proteins in our bodies, triggering our immune response.
2. The first human trial of an mRNA vaccine was done for Rabies.
3. India's first mRNA vaccine was developed for Covid-19.
4. India's mRNA vaccine for Covid-19 was the first such mRNA vaccine against the disease.

Options:

- a. Only 1
- b. Only 2
- c. Only 3
- d. All 4

Answer: c**Explanation:**

- Statement 1 is correct: The mRNA (messenger RNA) is one such vaccine that injects pieces of mRNA into human cells in order to get them to produce pathogen antigens.
- Statement 2 is not correct: The first human trial of an mRNA vaccine was done for a tumour.
- Statement 3 is correct: The country's first home-grown mRNA Covid-19 vaccine is GEMCOVAC-19.
- Statement 4 is correct: It was the first such mRNA vaccine against the Covid-19 disease.

Q5. Consider the following techniques/phenomena: (Level- Difficult)

1. Budding and grafting in fruit plants
2. Cytoplasmic male sterility
3. Gene silencing

Which of the above is/are used to create transgenic crops?

- a. 1 only

- b. 2 and 3
- c. 1 and 3
- d. None

Answer: b

Explanation:

- Grafting and budding are horticultural techniques used to join parts from two or more plants so that they appear to grow as a single plant.
- Cytoplasmic male sterility is total or partial male sterility in hermaphrodite organisms, as the result of specific nuclear and mitochondrial interactions.
- Gene silencing is the regulation of gene expression in a cell to prevent the expression of a certain gene.

I. UPSC Mains Practice Questions

1. Despite differences at various levels, India-China relations are critical to realise the Asian century. Discuss. (15 marks, 250 words) [GS-2, IR]
2. What are the salient features of the POCSO Act? Assess the success of this act to deliver justice to the victims. (15 marks, 250 words) [GS-2, Polity]