

17 July 2022: UPSC Comprehensive News Analysis

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Nothing here today!!!

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Category: HEALTH

1. Wastewater surveillance for COVID-19 reveals dynamics of infection

Syllabus: Issues relating to development and management of Social Sector/Services relating to Health

Prelims: Waste-water based surveillance for COVID-19

Mains: Process of Waste-water based surveillance for COVID-19 and its advantages

Context

This article talks about the method of tracking COVID-19 infections with wastewater

Challenges with the conventional method of monitoring COVID infections

- It is difficult to make people comply with all the testing protocols.
- The significant number of asymptomatic and mild infections has led to low testing which is also a key challenge to monitor infections.
- Further testing huge numbers of people every day and monitoring the infections is financially not viable and is extremely challenging.

Waste-water based surveillance for COVID-19

- Waste-water based surveillance for COVID-19 is an effective and reliable method to monitor the infection rates.
- Waste-water based surveillance methods refer to measuring the chemical signatures in sewage or drain water, such as fragmented biomarkers from SARS-CoV-2 by applying the diagnostic testing methods designed for individuals to the collective signature of entire communities.
- The novel coronavirus has already been detected in wastewater which was demonstrated by the detection of SARS-CoV-2 RNA in primary sewage sludge during the early weeks of the outbreak.
- Such a method of surveillance was widely used in the 1990s to eradicate poliovirus. Since large-scale vaccination reduced polio transmission, the conventional methods of monitoring polio proved incapable of preventing outbreaks.



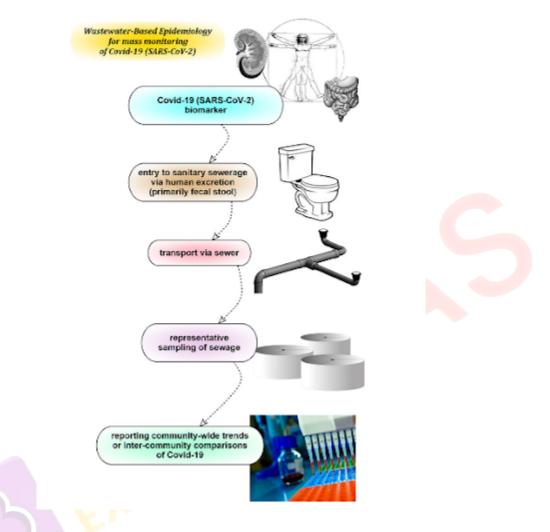


Image Source: National Library of Medicine

Findings of Wastewater surveillance for COVID-19 in India

- Waste-water based surveillance methods were undertaken in Hyderabad and Bengaluru by a collaboration between Tata Institute for Genetics and Society (TIGS), Bengaluru, and Centre for Cellular and Molecular Biology (CCMB), Hyderabad.
- The surveillance in Hyderabad was undertaken for a period of one year, starting from July 2020 to August 2021 and obtained data on a population size of nearly 2.5 lakh.
- Surveillance study helped researchers to identify temporal dynamics in the viral load in drainage water, which was high from July to November 2020.
- There was a slight increase in February 2021 which provided an idea about the second wave which began in March 2021.



- The study in Bengaluru was on water from 28 sewage treatment plants (STPs) whereas the Hyderabad samples were mainly from open drains.
 - The two require very different methods, because in an STP, the water is collected throughout the day, treated and let out again. So it has to be sampled before treatment.
 - For the open drainage system, the viral load would be different at different times of the day.
- The study also revealed that morning drain samples are mostly the best samples as most of the virus comes from faecal samples in the rush hours in the morning.

Advantages of Waste-water based surveillance

- This surveillance method can quickly establish the presence of Covid-19 infections across an entire community.
- It is one of the most cost-effective ways to survey transmission dynamics of entire communities.
- It helps collect data from people and areas that lack efficient healthcare facilities.
- It can help detect future waves and also identify new variants in advance as it provides it near-real-time information on disease prevalence.
- This method can be used to counter different viruses, like those that cause dengue, Zika, or TB.
- It can also help in monitoring antimicrobial resistance genes.

Nut graf: The Covid-19 pandemic has had severe domino effects on public health and safety, health care, food security, state of economies, and the viability of democracies. In this context, it is important to monitor the infection, spread, and changing trends of COVID-19 at a population-wide scale and the waste-water based surveillance method is said to be a key tool in monitoring Covid-19 outbreaks and also minimizing such domino effects.

2. Be especially chary of green pit vipers

Syllabus: Issues relating to development and management of Social Sector/Services relating to Health

Prelims: Green Pit Vipers

Mains: Concerns associated with the use of antivenom in India

Context

This article discusses the concerns about antivenom available in India for snakebites.



Details

- The green pit viper is not more lethal than Russell's viper, but the hemotoxic venom it injects prevents the blood in the body from clotting resulting in internal bleeding.
- Most of the cases have not been fatal but this can be concluded as there is little data available on such snakebites in the country.
- The monocled cobra, the banded krait, the lesser black krait, the great black krait, the mountain pit viper and the redneck keelback are among the 15 most venomous snakes out of 64 recorded so far across Northeast India.

Green Pit Vipers

- The green tree viper is a species of tree-dwelling pit vipers that belong to the genus Trimeresurus
- It is charaterised with bright green colour often flecked with black and has a red tail
- It is commonly found in the hilly areas of northeast and southern India, mainly in bamboo grooves and dense foliage near streams.

Data on snakebites

- According to available data over 1.4 million cases of snake bites are reported worldwide resulting in 1,25,000 fatalities annually.
- Over 46,000 people die due to snakebites every year in India which is the highest on earth.
 Out of which 77% of the victims died outside healthcare facilities.
- Most of the snakebites are reported in India between June and September
- About 58% of the victims are said to be farmers and labourers.

Concerns associated with the use of antivenom in India

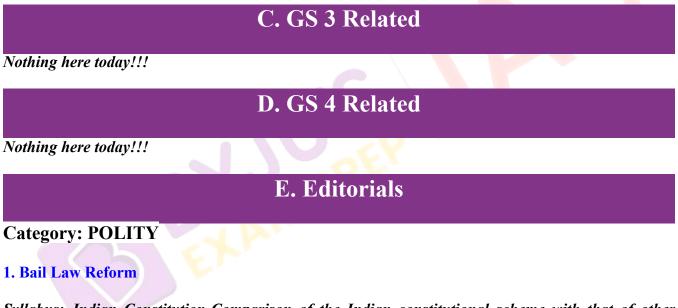
- The antivenom is derived from the "Big Four" snakes in India namely Russell's viper, Common Krait, Indian Cobra and Saw-scaled viper.
- However, the venoms are extremely diverse across snake species such as the venom of monocled cobra from West Bengal contains mostly Neurotoxins while the same species from Arunachal Pradesh contains Cytotoxins
- Neurotoxin affects the nervous system while Cytotoxins kill the cells in a body.
- Hence, the antivenom used in India is a case of one size fits all approach.
- Further, 80% of all polyvalent antivenom are derived from snakes caught in one district of Tamil Nadu which fails to address the diversity of venoms across the species.
- Also, the antivenom is said to be largely ineffective and the doctors are seen administering more than 50 vials of antivenom for each cobra or krait bite in northern India, thereby putting the patients at risk of side effects.



Recommendations

- The government must make efforts to declare snake bites as a notifiable disease, this will help in recording reliable data on snake bites and associated fatalities
- The government should undertake awareness activities to educate people about the myths and stigma associated with snake bites.
- There is a need to develop and adopt digital solutions that help address the problems in supply chain and logistics that increase access to antivenoms.
- Experts have urged for the development of a range of antivenoms and not just that of the "Big Four" snakes.

Nut graf: The huge economic and social burden of deaths due to snakebites in India calls for a comprehensive programme by the government to address the challenges associated with tackling and curing snakebites in India.



Syllabus: Indian Constitution-Comparison of the Indian constitutional scheme with that of other countries

Mains: Major issues involved in Bail procedure and CrPC in India.

Context: Recently, the Supreme Court of India urged the Government of India to bring a new law to simplify the process of bail, referring to the Bail Act of the United Kingdom.

What did the Supreme Court Observe?

• A two bench judge observed the "pressing need" to reform bail laws considering the "abysmally low" conviction rate.



- Stating that such detentions reflect an imperialist mindset and create the notion of a "police state", the Supreme court issued directions to courts and investigation agencies to prevent "unnecessary" arrests.
- Apex court also issued certain clarifications to its judgement issued in Satender Kumar Antil vs CBI, 2021 case on bail reforms.
 - It highlighted the presumption of innocence until proven guilty.
 - It said unwarranted arrests are in violation of Section 41 and section 41A of the CrPC.

Present Law on Bail in India VS Law in U.K:

- Bail in India is governed by provisions in the Code of Criminal Procedure (CrPC).
- The CrPC does not define the word 'bail' but only classifies offences under the Indian Penal Code as 'bailable' and 'non-bailable'.
 - Bail is a right in bailable offences under Section 436 and it binds police or court to release the accused once they furnish a bail bond, with or without surety.
 - The discretion to grant bail for non-bailable offences lies with the court. So, an accused cannot claim bail as a right.
 - Section 437 sets out the circumstances in which courts can grant bail for non-bailable offences.
- Provision mandates the court to consider granting bail to an accused below 16 years, someone who is sick, or is a woman.

Read More about **Bail here**

U.K. law on bail:

- Here, the Bail Act of 1976 governs the procedure regarding bail.
- It recognises a "general right" to bail and aims to reduce the number of convicts to prevent overcrowding of jails.
- It says an accused should be granted bail unless there is a justified reason to refuse it.
- Bail can be rejected if the court finds substantial grounds for believing that the defendant will fail to surrender, commit an offence, or interfere with witnesses if released on bail. The court has to give reasons in case it withholds or alters bail conditions.

Constitutional provisions against Unwarranted arrests:

- <u>Article 20</u>: "No person shall be convicted of any offence except for violation of the law in force at the time of the commission of the act charged as an offence, nor be subjected to a penalty greater than that which might have been inflicted under the law in force at the time of the commission of the offence"
- <u>Article 21</u>: Protection of Life and Personal Liberty



- Unwarranted arrests are against the Right to Life and Liberty.
- <u>Article 22</u>: provides Protection Against Arrest and Detention.

Guidelines issued by Supreme Court on Bail reforms: Way Forward

- The Supreme Court asked the Government of India to pass a new law on bail reforms to facilitate due procedure for arrests and timely disposal of bail pleas.
- As per the guidelines, pleas with respect to bail have to be disposed of within 15 days except when provisions mandate otherwise.
- Appeal for Anticipatory bail has to be decided within six weeks.
- Accused can be granted bail on the court's own discretion in certain circumstances bypassing formal bail application procedures.
- It rules that non compliance of Investigating agencies and officers with Sections 41 (empowers police to arrest without a warrant) and Section 41A (deals with the procedure for appearance before police) of the CrPC at the time of arrest will entitle the accused to bail.
- The apex court also directed State Governments and Union Territories to facilitate standing orders for the procedure to be followed under Sections 41 and 41A to avoid unwarranted arrests.
- It directed high courts to identify undertrials who are unable to comply with bail conditions and take action to facilitate their release

Nut Graf: A comprehensive change should be made with the criminals laws in India in consultation with all stakeholders to provide affordable and speedy justice to all, and create a people centric legal structure.

Category: INDIAN SOCIETY

1. Where is population growth taking place?

Syllabus: Population and associated issues

Prelims: World Population Prospects 2022

Mains: Highlights of World Population Prospects 2022 and the Implications of population growth for India

Context: United Nations Department of Economic and Social Affairs on World Population Day on July 11, released the World Population Prospects 2022, an estimate on likely trends in global population.

World Population Prospects 2022:



- It is the 27th edition of the official estimates and projections of the global population that have been published by the United Nations since 1951.
- They form an all inclusive demographic data to assess population trends at the global, regional and national levels.
- This report offers a summary of global population trends focusing on the period from 1950 to 2050 and presents an overview of key demographic prospects during the second half of the present century.
- These data are used in the calculation of many development indicators used to monitor global progress towards the achievement of the SDGs.

Highlights of the report:

- The world population, which stood at almost 7.9 billion in 2021, is projected to reach 9.5 billion in 2050, with India expected to surpass China as the world's most populous country in 2023.
- Sub-Saharan African nations are projected to continue growing through 2100 and to contribute more than 50% of the global population increase predicted through 2050
- Globally, life expectancy stands at 72.8 years in 2019, an increase of almost 9 years since 1990.
 - Life expectancy at birth for women is 73.8 and for men it stands at 68.4.
- In 2021, the average fertility(number of children born to a woman in her reproductive lifetime) stood at 2.3 births per woman which is projected to decline to 2.1 births per woman by 2050.
- More than fifty percent of the projected increase in world population up to 2050 will be concentrated in just 08 countries.



Rankings of the world's ten most populous countries, 1990 and 2022, and medium scenario, 2050 (numbers in parentheses refer to total population in millions)



Image Source: United Nations Department of Economic and Social Affairs

Impact of Covid19 on population growth:

- Covid19 Pandemic affected regions differently.
 - Life expectancy at birth fell by around 3 years in Central and South Asia, Latin America and the Caribbean. Whereas it has increased by 1.2 years in the population of Australia and New Zealand because of low mortality risks.
- Overall, the global life expectancy fell to 71.0 years in 2021, down from 72.8 in 2019, "due mostly" to the pandemic.

Implications of population growth for India:

- As per the UN report, India's population is expected to grow from its current 1.4 billion people to 1.67 billion in 2050 and it is expected to peak at 1.7 billion sometime in 2064.
- As per 5th National Family Health Survey released in 2021, for the first time in India the total Fertility Rate (TFR) had hit 2.0 or below the replacement rate of 2.1.
- This declining trend in the population is in line with trends in developed countries and is expected to translate into enhanced living standards per capita and better gender equity.
- Because this TFR has been achieved across most States in India, population decline in India's most populous states, Uttar Pradesh and Bihar can be achieved without coercive state policies.
- As per the estimates, India will have a substantial population of working age people who will be expected to support a growing number of the aged.
- The compulsion to provide quality climate friendly jobs will only continue to increase.
- The labour force participation of women has abbreviated and falling fertility means many more will demand better jobs in a transitioning economy.
- NFHS Data shows that the usage of modern contraceptives increased with income.
 - 66.3% of women who are employed are more likely to use modern contraception compared with 53.4% of women who are not.

Conclusion: Nations with higher fertility levels should work on meeting the needs of rising numbers of children and young people. Nations with declining fertility level trends should focus on creating an opportunity for a demographic dividend and invest in human capital by securing access to health care and quality education at all ages and opportunities for productive employment.

Nut Graf: Extensive data from world population prospects and NFHS shows that the development is the best contraceptive. Uneven pand concentrated population growth puts additional pressure on resources and poses challenges to the achievement of the Sustainable Development Goals (SDGs).



Focus of policies should now be to reach the unreached, marginalised sections on the basis of identity, geography and class.

Category: ECONOMICS

1. Will RBI move help greater trade in rupee?

Syllabus: Indian Economy and issues relating to planning, mobilisation of resources, growth, development and employment.

Mains: Impact of Rupee payment mechanism on Indian economy and the associated shortcomings

Context: Recently, the Reserve Bank of India issued a circular that detailed 'additional arrangement' for invoicing, payment, and settlement of exports and imports in Indian rupees.

What is Rupee Payment Mechanism?

- Under the new payment mechanism, Importers in India could make rupee payments to the Special Vostro account (an account that a correspondent bank holds on behalf of another bank) of the correspondent bank of the partner country, against invoices for the supply of goods or services from the overseas seller.
 - Vostro accounts are not widely used because exporters typically prefer settlements in a strong and stable currency.
- Exporters from India shall be paid proceeds in rupees from the balances in the designated vostro account of the correspondent bank of the partner country.
- Advance payment can be received by Indian exporters against exports from overseas importers in INR through the new Mechanism.

How does this change the status quo?

- There are at least 03 new facets to the newly-issued circular,
 - Firstly, the RBI has explicitly said that exchange of messages in a safe, secure and efficient way may be agreed upon mutually between the banks of partner countries.
 - This provision allows partnering banks to use any messaging system they deem fit and not confine themselves to the SWIFT platform.
- This provision is important in the backdrop of recent Sanctions on Russian Banks by the SWIFT platform.
- Alternatives to SWIFT platforms:





Source: The Hindu

Secondly, RBI has allowed for surplus to be invested.

- The Special Vostro account's balance can be used for :
 - Import/Export advance flow management
 - Payments for projects and investments by foreign entities in India.
 - Investment in Treasury Bills and Government Securities in terms of guidelines and prescribed limits, subject to the Foreign Exchange Management Act (FEMA) and similar statutory provisions.
 - This will promote other countries to have current account surplus with India to open Special Rupee Vostro Accounts and use the surplus to build rupee denominated assets.
- Finally, RBI has specified that banks acting as authorised dealers need to secure prior approval from the regulator to put in place this new mechanism. Vostro accounts did not need permission earlier.
 - This will help RBI to understand the interests of different countries in the new system and actual purpose of these accounts.

Impact on Trade and Balance of Payment:

- This new mechanism is intended to ease doing business with Russia by easing the payment issues.
- With growing sanctions on Russia, sectoral trade has been practically at a deadlock due to payment problems.
 - Bilateral trade between India-Russia during April 2021-March 2022 amounted to USD 9.1 billion.



• Russia enjoys a trade surplus with India and would be unlikely to prefer payments in currencies such as the dollar or the euro when it is facing sanctions from the West. Also, this surplus can be used to invest in Indian assets in India.

How does the new mechanism help India?

- Doing Rupee transactions with Russia will help in reducing hard currency outflow in such transactions.
- The impact on the rupee market is that foreign currency outflow would be lower by \$3 billion every month which would ease the downward pressure on rupee.
- Adopting this mechanism by other countries as well will lead to quicker strengthening of the rupee.

Read more on Internationalisation of Rupee.

Shortcoming of the new mechanism:

- Any easing of the downward pressure on the rupee would be seen only in the medium-to-long term because in the current scenario, payments to Russia have anyway not been going through and a credit system has helped continuity of trade.
- With ongoing conflict in Russia, larger banks may not immediately set up vostro accounts to avoid further sanctions. Smaller banks may be ideal for the purpose and could provide the service with adequate support by the government.

Nut Graf: The new mechanism can be seen as the first step towards making rupee fully convertible. It will also aid in rupee stabilisation after its fall with respect to US dollars. This aims to make commerce with sanctioned nations easier when the rupee is at an all-time low. This would lessen the risk of currency fluctuations, especially when considering the parity between the euro and the rupee.

F. Prelims Facts

1. Vice President Elections

Syllabus: GS-2, Polity; Appointment to various Constitutional posts,

Prelims: Vice President Elections

Context

The voting to elect India's 16th Vice-President will be held in August, 2022



Vice President Elections

Eligibility

- An Indian citizen can qualify for the post of Vice President if he is 35 years old or more.
- The individuals must be qualified to be elected as a Rajya Sabha member.
- An office of profit cannot be held by the Vice President of India.

Elections procedure

- According to Article 66 of the Constitution, the Vice-President will be indirectly elected by an electoral college consisting of:
 - All the members of Rajya Sabha (both elected and nominated)
 - All the members of Lok Sabha
- Elections are conducted in accordance with the system of proportional representation by means of the single transferable vote (PRSTV) and the voting takes place through a secret ballot.
- The Election Commission of India conducts the election to the office of the Vice-President.
- A candidate intending to contest in the election is required to be nominated by at least 20 MPs as proposers and at least 20 MPs as seconders and the candidate is required to make a security deposit of Rs.15,000/-
- All doubts and disputes arising in connection with the election of the Vice-President are enquired into and decided by the Supreme Court of India whose decision is binding.

To know more about - Office of Vice President

G. Tidbits

1. Bid date for submarine project extended again

The Defence Ministry has extended the deadline to submit responses to the Request For Proposal (RFP) in the over ₹40,000-crore deal for six advanced submarines under Project-75(I).

The Project 75 (India)-class submarines, or P-75I, for short, are a planned class of diesel-electric submarines, which are to be built for the Indian Navy.

• The P-75I class is a follow-on of the P-75 class submarines of the Indian Navy. Under this project, the Indian Navy intends to acquire six conventional, diesel-electric attack submarines, which will also feature advanced capabilities such as air-independent propulsion (AIP), ISR, special operations forces (SOF), anti-ship warfare (AShW),



anti-submarine warfare (ASW), anti-surface warfare (ASuW), land-attack capabilities and other features.

This would provide a major boost to the indigenous design and construction capability of submarines in India, in addition to bringing in the latest submarine design and technologies as part of the project.

H. UPSC Prelims Practice Questions

Q1. Which of the following can be considered advantages of millet crop cultivation over

cultivation of food grains such as rice and wheat? (Level - Medium)

- 1. Lesser water requirement
- 2. Can grow in less fertile soils as well
- **3.** Resistance to climatic stress
- 4. Shorter growing cycles

Options:

- 1. 1, 3 and 4 only
- 2. 1, 2 and 3 only
- 3. 2, 3 and 4 only
- 4. 1, 2, 3 and 4

Answer: d

- Statement 1 is correct, Millet crop cultivation require very little water
- Statement 2 is correct, Millets grow on less fertile and sandy soil
- Statement 3 is correct, Millets are climate-resilient crops and have exceptional tolerance toward diverse abiotic stresses such as drought, salinity, light and heat
- Statement 4 is correct, Most Millets have a short growing season

Q2. Which of the following statement/s is/are correct? (Level – Medium)

- 1. If the President dies or resigns or is otherwise incapacitated and as a result, the Presidential office becomes vacant, the Vice- President will act as President for a maximum period of one year.
- 2. If the Vice- President is not available to discharge the duties of the President, in such a scenario the responsibilities of the Presidential office fall on the Chief Justice of India.
- **3.** S Radhakrishan is the only person to have served as Vice President and then later as President of India.



Options:

- 1. 1 and 2 only
- 2. 2 only
- 3. 2 and 3 only
- 4. 3 only

Answer: b

- Statement 1 is not correct, If the President dies or resigns or is otherwise incapacitated and as a result, the Presidential office becomes vacant, the Vice- President will act as President only for a maximum period of six months
- Statement 2 is correct, If the Vice- President is not available to discharge the duties of the President and if the latter dies or resigns, the responsibilities of the office fall on the Chief Justice of India.
- Statement 3 is not correct, There have been six instances in the past when the Vice-President of India went on to become the President. This includes Dr S Radhakrishnan, Dr Zakir Hussain, V V Giri, R Venkataraman, Dr Shankar Dayal Sharma, and K R Narayanan.

Q3. Which of the following can be considered applications of quantum computing?(Level – Easy)

- 1. Artificial intelligence and machine learning
- 2. Computational chemistry
- 3. Drug design and development
- 4. Cybersecurity and cryptography
- 5. Weather forecasting

Options:

- 1. 1, 2, 3 and 5 only
- 2. 2, 3, 4 and 5 only
- 3. 1, 2, 3, 4 and 5
- 4. 1, 3 and 5 only

Answer: c

- The applications Of Quantum Computing includes:
 - Artificial Intelligence and Machine Learning
 - Computational Chemistry
 - Drug Design and Development
 - Cybersecurity and Cryptography



- Financial Modelling
- Logistics Optimisation
- Weather Forecasting

Q4. Consider the following architectural features. (Level – Difficult)

- 1. Trabeate style
- 2. Use of mortar
- 3. Use of calligraphy
- 4. Pietra-dura technique
- 5. Arabesque method

Which of the above are features of the Indo-Islamic architecture?

- 1. 1, 3 and 4 only
- 2. 1, 2, 3, 4 and 5
- 3. 2 and 5 only
- 4. 2, 3, 4 and 5 only

Answer: d

- Indo-Islamic architecture includes features such as:
 - Arcuate style (use of archs and domes) and not Trabeate style (Construction of buildings using beams and columns)
 - Use of mortar as a cementing agent
 - Use of calligraphy to depict religious art and patterns
 - Pietra-dura technique (mosaic)
 - Arabesque method for surface decorations based
 - Minar, Tombs and Sarais

Q5. Consider the following statements: (Level – Medium) PYQ (2019)

- 1. Asiatic Lion is naturally found in India only.
- 2. Double-humped camel is naturally found in India only.
- 3. One-horned rhinoceros is naturally found in India only.

Which of the statements given above is/are correct?

- 1. 1 only
- 2. 2 only
- 3. 1 and 3 only
- 4. 1, 2 and 3



Answer: a

- Statement 1 is correct, At present Gir National Park and Wildlife Sanctuary is the only abode of the Asiatic lion.
- Statement 2 is not correct, The double-hump camel is a native of Gobi desert, and is found on a vast expanse of cold-desert areas across Mongolia, China, Kazakhstan, Turkmenistan, Uzbekistan and parts of Afghanistan
- Statement 3 is not correct ,The Great one horned rhinoceros is commonly found in Nepal, Bhutan, Pakistan and in India.

I. UPSC Mains Practice Questions

- 1. <u>What are the Supreme Court's directives on grant of bail? Why does it recommend</u> <u>a separate Bail Act?</u> (10 Marks, 150 Words) (GS-2, Polity)
- 2. <u>Write a note on World Population Prospects and discuss the impact of India's</u> <u>Population Growth on Economic Development</u>. (10 Marks, 150 Words) (GS-1, Social Issues)