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# NEWS JUICE MONTHLY

**1st January to 31st January, 2022**

Summary of The Hindu & The Indian Express along with News  
Background

POLITY  
&  
GOVERNANCE

# Draft rules for online gaming

Relevance: Prelims & Mains Paper II; Governance



## Objectives

- The **revenue of the Indian mobile gaming industry** is expected to **reach \$5 billion in 2025**.
- The industry grew at a compound annual **growth rate (CAGR) of 38 per cent** in India between 2017-2020, as opposed to 8 per cent in China and 10 per cent in the US.
- The proposed rules **will be introduced as an amendment to the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021**.
- The rules have **two-fold objectives**:
  1. The rules are aimed at **safeguarding users** against potential harm from skill-based games.
  2. The rules also **attempt to regulate online gaming platforms as intermediaries and place due diligence requirements on them**.

## Provisions

- **1. Registration with self-regulatory body**
- **All online gaming companies will have to register** with the self-regulatory body.
- The **self-regulatory body** will have a **board of directors with five members** from diverse fields, including online gaming, public policy, IT, psychology and medicine.
- The **registration and approval of self regulatory body is mandatory**.

## Provisions (Contd.)

### - 2. Content regulation

- The government may also **regulate the content of online gaming**, and “ensure that the games do not have violent, addictive or sexual content.

### - 3. Due diligence requirement

- Like an intermediary, online gaming firms will be required to undertake additional due diligence, including **KYC of users, transparent withdrawal and refund of money, and a fair distribution of winnings.**
- For KYC, they will have to follow norms laid down for entities regulated by the Reserve Bank of India (RBI).

## Provisions (Contd.)

### - 4. Randomization of game outcomes

- Gaming companies will also have to secure a random number generation certificate, which is typically used by platforms that offer card games to ensure that **game outputs are statistically random and unpredictable.**
- They will also have to get a “**no bot certificate**” from a reputed certifying body.

### - 5. Officials- Compliance officer, Nodal Officer and Grievance Officer

- Similar to social media and e-commerce companies, online gaming platforms will also have to appoint a **compliance officer** who will ensure that the platform is following norms, a **nodal officer** who will act as a liaison official with the government and assist law enforcement agencies, and a **grievance officer** who will resolve user complaints.
- MeitY has **invited comments on the draft rules** by January 17, and the final rules may be ready next month.

# Draft Regulations announced for foreign universities in India

Relevance: Prelims & Mains Paper II; Governance



Why in news?	Entry Allowed	Criteria
<ul style="list-style-type: none"><li>- The Centre is set to open the door for foreign universities to set up campuses in India.</li><li>- Higher education regulator University Grants Commission (UGC) released draft regulations to allow foreign universities to enter India.</li><li>- Public comments and feedback are sought until January 18. The regulations will be notified by the end of this month.</li></ul>	<ul style="list-style-type: none"><li>- Universities like Oxford, Cambridge, or Harvard can now open campuses in India.</li><li>- However, it will ultimately depend on whether those universities find the Indian market attractive enough to invest in a branch campus in the country.</li><li>- The UGC has said that universities in some European countries have shown a “keen interest” in setting up India campuses.</li></ul>	<ul style="list-style-type: none"><li>- The universities that are placed in the top 500 — either in the overall or the subject-wise category — in global rankings such as QS, can apply to enter India.</li><li>- Universities that do not participate in such rankings must be “reputed” in their countries to be able to apply.</li></ul>

## Large Autonomy

- The foreign universities will have **full freedom to decide the fee structure and admission criteria** for both Indian and overseas students.
- They will also get a **free hand in hiring faculty**, either from India or abroad, and will **not be expected to mandatorily follow reservation policies** in admissions and employment.
- They will also have **freedom to repatriate the profits back** to home jurisdiction. Thus, they will not be mandatorily required to invest the earned profits in India.

## Check

- The draft states that the **UGC will have the right to inspect the campuses** at any time.
- The draft regulations also require the foreign universities to **submit audit reports and annual reports to the UGC** “certifying that [their] operations...in India are in **compliance with FEMA 1999**” and **other relevant government policies**.

## Linked to NEP 2020

- The **National Education Policy (NEP), 2020**, says that “top universities in the world will be facilitated to operate in India”, and “a legislative framework facilitating such entry will be put in place, and such universities will be given special dispensation regarding regulatory, governance, and content norms on par with other autonomous institutions of India”..

**FOREIGN** universities in the top 500 category in world rankings can apply

**WILL BE FREE** to fix their admission criteria and fee structure

**AUTONOMY** to recruit faculty and staff from India and abroad

**CAN REPATRIATE** funds to home jurisdiction

**SHALL NOT** offer any programme that jeopardises India's national interest

# Haldwani Land Eviction Case

Relevance: Prelims & Mains Paper II; Governance



## Why in news?

- The **Supreme Court stayed the Uttarakhand High Court decision to evict over 4,000 families from land claimed by the Railways in Haldwani**, saying they could not be moved within a week and without rehabilitation plans.
- Earlier, the **Uttarakhand High Court directed the Railways to evict those living in Haldwani's Gafoor Basti**, land adjoining the Haldwani railway station.
- While the residents claimed ownership of the land through lease and sale deeds, the HC declared that the land belongs to the Railways and directed to use the force for eviction.

## Land Dispute

- The land dispute essentially revolves around a **1907 government record**, based on which **Gafoor Basti residents claim ownership**.
- The document, they claim, **declared the area as "nazul land" or government land used for non-agricultural but public purposes**.
- Some residents claimed in the HC that their ancestors had **purchased plots from the Custodian Department of Government of India**, which was **entrusted with properties of those who left India after partition**.



## What was the HC decision?

- The High Court held that the 1907 document was a mere 'Office Memorandum' and therefore invalid for the purposes of determining the classification of land.
- This would essentially mean that every transaction, sale, lease that flows from the document is now deemed invalid.
- The court instead relied on a 1959 notification of the vesting of land with the Railways.

## Claim by the residents

- Several affected residents have claimed that they have been in possession of the land for over 50 years.
- However, the Court said that "merely being in uninterrupted possession for last 50 years will not in itself mature their legal rights to continue with possession" since the 1907 document itself does not classify the land as nazul land.



# Obscenity laws in India

Relevance: Prelims & Mains Paper II; Governance



## Why in news?

- Many people in Mumbai have raised issue that Urfi Javed should be booked under Obscenity laws for her indecent clothing.
- In 2022, after Bollywood actor Ranveer Singh posted pictures of his nude photoshoot for the New York-based Paper magazine on social media, police booked him under Obscenity laws.
- Before Singh, model and actor Milind Soman was booked by the Goa Police in November 2021 for uploading a photograph of himself running nude on a beach in the state.

## Obscenity laws in India

- Under the **Indian Penal Code (IPC)**, **Sections 292, 293 and 294** deal with the offence of obscenity.
- **Section 292** vaguely defines obscenity as follows - **any content shall be deemed to be obscene if it is lascivious or appeals to the prurient interest, or if its effect tends to deprave and corrupt persons likely to read, see or hear the content.**
- This section **prohibits the sale or publication of any obscene pamphlet, book, paper, painting, and other such materials.**
- Meanwhile, **Section 293 criminalises the sale or distribution of obscene objects to anyone who is under the age of 20, or an attempt to do so.**

## Obscenity laws (Contd.)

- Although it is a **bailable** offence, the **maximum punishment** for the first conviction is **three years** of imprisonment and a fine up to Rs **2,000**, and for the **second conviction** **seven years** with a **fine up to Rs 5,000**.
- **Section 294 prohibits obscene acts in public spaces**. The maximum punishment for the person convicted under this charge is **three-month jail and a fine**.
- With the advent of the digital age, laws were made to criminalise obscene conduct on the internet also. **Section 67 of the Information Technology Act** says that anyone who **publishes or transmits obscene material** in electronic form can be punished.

## Judiciary's view

- In 2014, the **apex court** gave explained on what constitute obscene in **Aveek Sarkar & Anr vs State Of West Bengal and Anr**.
- In its judgement, the court said “**while judging as to whether a particular photograph, an article or book is obscene, regard must be had to the contemporary mores and national standards and not the standard of a group of susceptible or sensitive persons**”.
- It added that the **photograph must be “taken as a whole” and seen with the context** of what it wants to convey.



# Ladakh Protests

Relevance: Prelims & Mains Paper II; Governance



## Why in news?

- Residents of the Kargil and Leh regions of Ladakh have been protesting for over two years seeking special rights and safeguards for the Union Territory.
- On January 2, the **Home Ministry announced that a High Powered Committee** would look into the demands.

## Situation after 2019

- The revocation of Jammu & Kashmir's special status and bifurcation of the erstwhile state into two UTs brought joy in **Buddhist-dominated Leh**, but triggered a degree of apprehension in **Muslim-dominated Kargil**.
- The two districts of Kargil and Leh have different demographic compositions, with Buddhists dominating Leh, and Muslims Kargil.

## Different Demands

- **Leh had for long sought UT status** and separation from J&K's administrative set-up centred in Srinagar and Jammu.
- However, they **sought UT status on the lines of Pondicherry** — a UT with an elected Assembly.
- **In Kargil, the primary demand was for statehood.** Power is currently concentrated in the L-G's office in Leh.
- Apart from political representation, the **concerns are also raised in both regions over the protection of land and employment.**

# Section 6A of Indian Citizenship Act



Relevance: Prelims & Mains Paper II; Governance

## Why in news?

- A Supreme Court Constitution Bench, while **hearing petitions challenging Section 6A of the Citizenship Act**, said it would first **decide whether the provision is constitutionally valid before proceeding to other issues** raised in the pleas.

## Migration from Bangladesh into Assam

- After the 1947 partition, the newly formed Pakistan consisted of West Pakistan (present day Pakistan) and East Pakistan (present day Bangladesh). In 1971, Bangladesh was separated from Pakistan and emerged as an independent country.
- Since the partition, there was **large-scale migration** of people **from the then East Pakistan to the state of Assam**.
- To address the **illegal migration the Immigrants (Expulsion from Assam) act was enacted in 1950**.
- The act empowered the government to direct certain immigrants to leave Assam or India, if they proved detrimental to the interests of the general public of India or any Scheduled Tribe in Assam.
- However, persons who migrated to India on account of civil disturbances in Pakistan were exempted.
- Further, a **National Register of Citizens (NRC)** was prepared for Assam on the basis of the **census of 1951** to identify the Indian citizens.

## Movement to check Migration

- The **migration** into Assam that started at the time of partition, however, **continued** for decades.
- A students group, known as All Assam Students Union (AASU) launched an anti-foreigner movement in 1979.
- The movement demanded that immigrants who illegally entered Assam after 1951 should be sent back.
- The movement continued for 6 years from 1979 to 1985 and involved ethnic violence in Assam.
- The movement came to an end in **1985**, when a **tripartite agreement (Assam Accord)** was signed by the Government of India, the state government of Assam and the leaders of the movement.

## Assam accord

- Assam accord has **15 clauses** dealing with various issues such as the issue of foreigners, economic development, safeguards for Assamese population and restoration of normalcy.
- **Clause 5 deals with the detection of foreigners** (defines who is considered a foreigner), **deletion of names of foreigners from the electoral rolls and their deportation.**



## Clause 5 Details

- The following was agreed upon under clause 5 of the Accord to deal with the issue of foreigners in Assam:
  1. The date of **1 January, 1966** was to be the base date for the detection of foreigners.
  - All persons who came to Assam **prior to this date were to be treated as citizens** of India.
  2. Persons who came to Assam on or **after 1 January, 1966 and before 25, March 1971** were to be considered as **foreigners but not to be deported**.
  - Also, if their names appear in the electoral rolls, their names were to be deleted.
  - **After 10 years, the deleted names were to be restored back in the electoral rolls.**
  3. Persons who **came to Assam on or March 25, 1971** were to be considered as **foreigners and deported back from India**. Their names were also required to be deleted from the voters list.

## Section 6A

- To incorporate Clause 5 provisions agreed to in the Assam Accord, the citizenship act was amended in 1985.
- The Provisions of **Section 6A** are same as that of **Clause 5 of Assam Accord**.



# Governor and State government confrontation in Tamil Nadu



Relevance: Prelims & Mains Paper II; Governance

## Why in news?

- Tamil Nadu CM M.K. Stalin sought President's intervention to ensure that Governor R.N. Ravi acts as per Article 163 (1) of Constitution after event of January 9.
- **Article 163 (1)** says that **"there shall be a council of Ministers with the chief Minister at the head to aid and advise the Governor in the exercise of his functions**, except in so far as he is by or under this constitution required to exercise his functions or any of them in his discretion."
- Thus, as per Article 163 (1), by and large, the Governor of a State is required to act as per aid and advice of the Council of Ministers.

## Governor Deviation

- On January 9, **Governor while presenting address to Assembly included his own content and skipped a few portions in the printed speech** such as names of political stalwarts of the State and reference to the Dravidian model of Governance.
- The Governor's address to the Assembly is prepared by Council of Ministers.
- It is **basically a speech by Governor to Assembly about polices to be adopted by ruling government for the coming year**. It is supposed to be as per the content provided by CoM.

## Reactions

- Chief Minister M.K. Stalin moved a resolution to **expunge all deviations** made by Governor R.N. Ravi and only take the prepared speech for the Assembly records.
- In response to this, **Governor walked out of the Assembly**.



# Himachal Pradesh reinstates Old Pension Scheme

Relevance: Prelims & Mains Paper II; Governance



## Why in news?

- On January 13, the **recently elected Congress government in Himachal Pradesh cleared the decision** for its employees to revert to the Old Pension Scheme (OPS), with Chief Minister Sukhvinder Singh Sukhu saying the party has fulfilled a key election promise.
- Himachal becomes the **third Congress-ruled state after Rajasthan and Chhattisgarh** to announce such a move.

## Old Pension Scheme

- The attraction of the Old Pension Scheme lay in its promise of an assured or 'defined' benefit to the retiree – giving it its other name, '**Defined Benefit Scheme**'.
- Under this scheme, the **pension was fixed at 50 per cent of one's last drawn basic pay**.
- This means that if a government employee's basic monthly salary at the time of retirement was Rs 10,000, they would be assured of a pension of Rs 5,000, in **addition to the dearness allowance**.
- DA — calculated as a percentage of the basic salary — is a kind of adjustment the government offers its employees and pensioners to make up for the steady increase in the cost of living.
- DA hikes are announced twice a year, generally in January and July.
- A 4 per cent DA hike would mean that a retiree with a pension of Rs 5,000 a month would see her monthly income rise to Rs 5,200 a month.

## New Pension Scheme

- The **New Pension System**, originally conceived for unorganised sector workers, was adopted by the government for its own employees starting from January 1, 2004.
- Under this scheme, the **defined contribution** comprised 10 per cent of the basic salary and dearness allowance by the employee with a matching contribution from the government.
- In January 2019, the government increased its contribution to 14 per cent of the basic salary and dearness allowance.
- Individuals can choose from a range of schemes and pension fund managers ranging from public sector banks and financial institutions to private companies.

## Concerns about Old Pension Scheme

- Over the last three decades, **pension liabilities** for the Centre and states have jumped manifold. Overall, pension payments by states eat away a quarter of their own tax revenues.
- For some states, it is much higher. For **Himachal**, it is almost **80 per cent** (pensions as a percentage of the state's own tax revenues).
- Also, pension liabilities would keep **climbing since pensioners' benefits increased every year**; like salaries of existing employees, pensioners gained from **indexation**. And two, better health facilities would increase **life expectancy**, and increased longevity would mean extended payouts.
- **Funding a small number of former government employees by utilising a chunk of taxpayers' money** cannot be good politics.
- There is also the larger issue of **inter-generational equity**. Today's taxpayers are paying for the ever-increasing pensions of retirees.



## Immediate benefits

- Himachal's move to the OPS will bring the state government some **short-term gains**: they **save money since they will not have to put the 10 per cent matching contribution** towards employee pension funds.
- For employees too, it will result in **higher take-home salaries**, since they too will not set aside 10 per cent of their basic pay and dearness allowance towards pension funds.

# Google vs CCI – Different view points



**Relevance: Prelims & Mains Paper II; Governance**

## Why in news?

- Google has said that the order passed by India's competition regulator — the Competition Commission of India (CCI) — against Android's operating system policies will result in devices getting expensive in India and lead to proliferation of unchecked apps that will pose threats for individual and national security.

## What was the order?

- The CCI, late last year, slapped two penalties on Google in separate cases for allegedly “abusing its market dominant position” in multiple categories related to the Android mobile device ecosystem in the country. There were two separate orders:
  1. The order requires that Google **should not deny access to its Play Services plugins to “disadvantaged” original equipment manufacturers (OEMs) such as manufactures of mobile phones, and the licencing of the Play Store to OEMs should not be linked to the requirement of pre-installing Google search, Chrome browser, YouTube, Google Maps, Gmail or any other Google application.**
  2. It has also **asked Google not to restrict the ability of app developers to distribute their apps through side-loading – offering their apps outside of Google's Play Store.**



## Google's response to 1st order

- Google claimed that **multiple applications from different sources will not support the security and user safety features that Google provides**, and OEMs will ultimately have to foot that bill.
- This will **result in higher costs for the OEMs**, and consequently, **more expensive devices for Indian consumers**.

## Response to 2<sup>nd</sup> order

- **Predatory apps** that expose users to financial fraud, data theft and a number of other dangers abound on the internet, both from India and other countries.
- **While Google holds itself accountable for the apps on Play Store and scans for malware as well compliance with local laws, the same checks may not be in place for apps sideloaded from other sources.**

## Order Challenged

- **Google had appealed** CCI's decision with the National Company Law Appellate Tribunal (NCLAT), which declined to stay the antitrust watchdog's order.
- Google has challenged the NCLAT's order before the Supreme Court which has agreed to hear the company's plea.

# Law Minister's suggestion to CJI on MoP

Relevance: Prelims & Mains Paper II; Polity



## Why in news?

- Union Minister for Law and Justice Kiren Rijiju has written to the Chief Justice of India (CJI) “suggesting” that a nominee of the government should be included in the collegium that makes recommendations for the appointment of judges.
- The letter offered the suggestion since the Memorandum of Procedure (MoP) is “pending finalisation”.

## Memorandum of Procedure

- The MoP is the official procedure agreed upon by the government and the judiciary on the appointment of judges. It is a crucial document that governs the collegium system of appointing judges.
- The MoP was sought to be re-negotiated after the SC on October 16, 2015 struck down the constitutional amendment that had brought in the National Judicial Appointments Commission (NJAC).
- The NJAC, which was cleared by way of Constitutional amendment, would have changed the system of appointment of judges to the higher judiciary, and given the government a role in the appointment.
- The Constitutional Act passed in Parliament had provided for a six-member panel, including the Law Minister and two independent persons, to appoint judges to the SC and the High Courts.

## Pending Finalisation

- After the NJAC Act was struck down, the **SC directed the government to finalise the existing MoP.**
- Draft MoPs were exchanged between the government and the collegium during 2015-17, but could not be finalized.
- **However,** before the document could be finalised, the **Supreme Court itself agreed in a judgment that “there is a need to revisit the process of selection and appointment of Judges to the Higher Judiciary.”**
- The SC observation came in a July 2017 ruling by a seven-judge Bench in a suo motu contempt proceeding against Justice C S Karnan, who was then a judge of the Calcutta High Court.

## Government’s Stand

- Officially, **the government’s stand is that the MoP is “pending finalisation”.**
- Rijju’s “suggestion” to the CJI comes in the backdrop of an ongoing tussle between the government and judiciary on the issue of appointment of judges.
- Five names recommended by the collegium on December 13 for appointment as judges to the Supreme Court are pending with the government.

# Delhi CM-LG stalemate- Recent Issues

Relevance: Prelims & Mains Paper II; Polity



## Municipal Corporation of Delhi control

- The LG appointed Satya Sharma, a BJP councillor, to preside over the mayoral polls issuing a gazette notification for the same.
- The AAP alleged that the LG had bypassed the tradition of nominating or appointing the senior-most councillor as the presiding officer and has also bypassed the elected government's recommendation.
- The LG also nominated 10 aldermen to the MCD who were persons who needed to have "special knowledge or experience in municipal administration".
- The AAP said that the aldermen had political links to the BJP and accused the LG of giving them voting rights in the mayoral polls, which is prohibited according to the Delhi Municipal Corporation Act, 1957.

## Orders on everything

- Mr. Kejriwal has accused Mr. Saxena of issuing orders on "practically every" subject directly to the Chief Secretary who gets them implemented, completely bypassing the elected government.
- In a letter to the LG, Mr. Kejriwal said that barring the three reserved subjects of police, public order and land, executive control over all other subjects (transferred subjects) lies with the elected government but the LG has been issuing orders on these subjects and having them implemented by the bureaucracy.





## LG and CM meetings

- The LG and the Chief Minister are supposed to have weekly meetings every Friday.
- However, since October, these meetings have not taken place with the LG accusing the Chief Minister of not being available as he was busy with election campaigns in other States.
- Mr. Kejriwal met the LG after a long gap on January 13 but the meeting ended in a stalemate.

## Advertisements Money

- Secretary, Information and Publicity, Delhi Government, has issued a notice to the Convenor of AAP to recover ₹164 crore spent on political advertisements of the Delhi Government that were published in the garb of government advertisements.
- Deputy Chief Minister Manish Sisodia said that the Central government was misusing its control over officers to target AAP and its leaders in false cases.

## Training Programme

- The LG also sent back a file from the government seeking permission to send teachers from Delhi government schools on an international teacher training programme to Finland, asking for a cost-benefit analysis.
- The Delhi Government saw this as a direct attack on its education model questioning why the LG was not approving a proposal that has been made by the elected government which had won a clear majority to fulfill the aspirations of the people of Delhi.

# Rule 14 in the new Electricity (Amendment) Rules, 2022



**Relevance: Prelims & Mains Paper II; Governance**

<b>Why in news?</b>	<b>Rule 14</b>	<b>Opposition by States</b>
<ul style="list-style-type: none"><li>- The <b>gazette notification on the Electricity (Amendment) Rules, 2022, came out on December 29.</b></li><li>- Few State governments had fiercely objected to Rule 14 which permits distribution companies (Discoms) to automatically recover from consumers, on a monthly basis, the expenses arising out of variations in fuel price and power purchase costs.</li></ul>	<ul style="list-style-type: none"><li>- The Centre introduced the Electricity (Amendment) Rules, 2022, to amend the Electricity Rules, 2005.</li><li>- <b>Rule 14 of the Rules requires the State electricity regulatory commission to specify a price adjustment formula for automatically passing on the costs through the consumer tariff on a monthly basis.</b></li><li>- <b>Fuel and power purchase adjustment surcharges shall be calculated and billed to consumers, automatically, without going through the regulatory approval process, on a monthly basis.</b></li></ul>	<ul style="list-style-type: none"><li>- State governments have argued that giving Discoms the freedom to automatically pass on the aforementioned costs through the electricity bill endangers consumer interests.</li><li>- The amendment spawns an “unstable pricing situation” in the power sector, akin to that of petrol and diesel prices.</li><li>- The petrol and diesel prices are adjusted as per changes in international crude oil prices.</li></ul>

# Padma Awards 2023 announced: Their History and selection process



**Relevance: Prelims & Mains Paper II; Governance**

## Why in news?

- The govt. announced one Padma Vibhushan and 25 Padma Shri awards on Republic Day's occasion.
- The Padma Vibhushan this year will be awarded posthumously in the field of Medicine (Pediatrics) to Dilip Mahalanabis, who came up with Oral Rehydration Solution (ORS).

## History

- The Padma Awards are India's highest civilian honours after the Bharat Ratna, seeking to "recognize achievements in all fields of activities or disciplines where an element of public service is involved".
- Both Bharat Ratna and Padma Vibhushan were first instituted in 1954 as India's highest civilian honours. The latter had three classes: Pahela Varg (1st Class), Dusra Varg (Second Class) and Tisra Varg (Third Class). In 1955, these were subsequently named as Padma Vibhushan, Padma Bhushan and Padma Shri respectively.
- While the Bharat Ratna is treated as an exceptional award with only 45 Bharat Ratnas being handed over till date, the Padma Awards are annually conferred to deserving civilians.
- Except for interruptions in 1978, 1979 and between 1993 and 1997, every year the names of the recipients are announced on Republic Day eve.

## Awardees

- Typically, **not more than 120 awards are given in a year**, but this does **not** include **posthumous** awards or awards given to **NRIs** and foreigners.
- While the award is normally not conferred posthumously, the Government **can consider posthumous felicitation in exceptional circumstances**.
- The Padma awardees do **not** get any **cash** reward but a **certificate signed by the President apart from a medallion** which they can wear at public and government functions.
- The awardees are expected to **not use award as prefix or suffix** to their names.

## Eligibility

- While a Padma awardee can be given a **higher award** (i.e. a Padma Shri awardee can receive a Padma Bhushan or Vibhushan), this can **only** happen **after five years** of the conferment of the previous award.
- **Govt. servants including those working with PSUs**, except doctors and scientists, are **not eligible** for Padma awards.
- Padma awards are given for “special services” and not just for “long service”. “It should not be merely excellence in a particular field, but the criteria have to be ‘excellence plus’.

## Selection Process

- Any **citizen of India can nominate** a potential recipient. One can even **nominate one's own self**.
- Though there is **no rigid criteria** for selection, the lifetime achievement of an individual is among the main considerations.
- All nominations received for Padma awards are placed before the **Padma Awards Committee**, which is **constituted by the Prime Minister every year**.

## Refusal & Annulment

- While explicit consent is not sought from the awardee, before the final list is announced, they receive a call from the MHA. If they do not seek to receive the award, they **can refuse** at that time and their names are removed. However, there have been public refusals as well in the past.
- While **extremely rare**, the President of India can annul/cancel someone's Padma award in case of any egregious misconduct committed by the recipient.
- Recently, this issue came up when medal-winning wrestler and Padma Shri awardee Sushil Kumar was implicated in a murder case.

# Supreme Court order simplifies passive euthanasia procedure



**Relevance: Prelims & Mains Paper II; Governance**

## Why in news?

- The Supreme Court has **significantly eased the procedure for passive euthanasia** in the country.
- This has been done by altering the existing guidelines for 'living wills', as laid down in its 2018 judgment in Common Cause vs. Union of India & Anr, which allowed passive euthanasia.

## What is euthanasia?

- Euthanasia refers to the **practice of an individual deliberately ending their life, oftentimes to get relief from an incurable condition, or intolerable pain and suffering.**
- Euthanasia, which can be administered only by a physician, can be either **'active' or 'passive'**.
- **Active euthanasia** involves an active intervention to **end a person's life with substances or external force**, such as administering a lethal injection.
- **Passive euthanasia** refers to **withdrawing life support or treatment** that is essential to keep a terminally ill person alive.

## Situation before 2018

- In **2011**, the **SC allowed passive euthanasia for Aruna Shanbaug**, a nurse who had been sexually assaulted in Mumbai in 1973 and had been in a vegetative state since then.
- The **court made a distinction between 'active' and 'passive'**, and allowed the latter in "certain situations".

## Legalised in 2018

- Passive euthanasia was legalised in India by the Supreme Court in 2018. It depends upon the person having a 'living will'.
- A 'living will' is a written document that specifies what actions should be taken if the person is unable to make their own medical decisions in the future.
- In case a person does not have a 'living will', members of his/her family can make a plea before the High Court to seek permission for passive euthanasia.

## Earlier Legal Procedure

- A living will was required to be signed by an executor (the individual seeking euthanasia) in the presence of two attesting witnesses, preferably independent, and to be further countersigned by a Judicial Magistrate of First Class (JMFC).
- The treating physician was required to constitute a board comprising three expert medical practitioners from specific but varied fields of medicine, with at least 20 years of experience, who would decide whether to carry out the living will or not.
- If the medical board granted permission, the will had to be forwarded to the District Collector for his approval.
- The Collector was to then form another medical board of three expert doctors, including the Chief District Medical Officer.
- Only if this second board agreed with the hospital board's findings would the decision be forwarded to the JMFC, who would then visit the patient and examine whether to accord approval.

## What will change now?



- The cumbersome process will now become easier. Instead of the hospital and Collector forming the two medical boards, both boards will now be formed by the hospital.
- The requirement of 20 years of experience for the doctors has been relaxed to five years.
- The requirement for the Magistrate's approval has been replaced by an intimation to the Magistrate.
- The medical board must communicate its decision within 48 hours; the earlier guidelines specified no time limit.
- Now, a notary or gazetted officer can sign the living will in the presence of two witnesses instead of the Magistrate's countersign.
- In case the medical boards set up by the hospital refuses permission, it will now be open to the kin to approach the High Court which will form a fresh medical team.
- These guidelines are regarding questions such as who would execute the living will, and the process by which approval could be granted by the medical board.



INTERNATIONAL  
ORGANISATIONS  
&  
BILATERAL  
RELATIONS

# India and Austria to sign migration and mobility agreement

Relevance: Prelims; Bilateral Relations



## Why in news?

- Close on the heels of similar mobility agreements with France, United Kingdom, Germany and Finland, India will sign a “Comprehensive Migration and Mobility Partnership Agreement” (MMPA) with Austria.

## Migration and Mobility agreement

- While Migration can be rudimentarily defined as movement of people across borders, Mobility broadens the discourse to include the relational dynamics between people, objects and ideas that are all mobile.
- The Migration and Mobility agreement (MMPA) facilitate working of Indian professionals in these countries.
- In addition, the agreement will regulate multiple entry visas for professionals and student exchange programmes, and will be reviewed regularly by a Joint Working Group (JWG).
- The European countries also see such agreements as a useful tool to curb illegal immigration from India. The agreement enables swift return of illegal migrants.

# India gets leadership of the Asian Pacific Postal Union

Relevance: Prelims; International Organisations



## Why in news?

- India will take over the leadership of the Asian Pacific Postal Union (APPU) having its Headquarters in Bangkok, Thailand.
- Following the successful elections held during the 13th APPU Congress, Dr. Vinaya Prakash Singh, erstwhile Member (Personnel), Postal Services Board will take over the charge of Secretary General of the Union for a tenure of 4 years.

## Secretary General

- Secretary General leads the activities of the Union and is also the Director of the Asian Pacific Postal College (APPC), based in Bangkok, which is the largest intergovernmental postal training institute in the region.

## Asian Pacific Postal Union

- Asian Pacific Postal Union (APPU) is an intergovernmental organization of 32-member countries of the Asian-Pacific region. APPU is the regional body of the Universal Postal Union (UPU), which is a specialized agency of the United Nations.
- The goal of APPU is to extend, facilitate and improve postal relations between member countries and to promote cooperation in the field of postal services.

# Legality of Israel's occupation?

Relevance: Prelims & Mains Paper II; International Relations



## Why in News?

- The **United Nations General Assembly (UNGA)** passed a **resolution** that asked the body's highest court, the **International Court of Justice (ICJ)**, to **render its opinion on the legal consequences of Israel's prolonged occupation of Palestinian land**.
- The resolution was passed with 87 member countries voting favourably, as opposed to 26 countries, including the U.S. and Israel, voting against it.
- **India** was one of the 53 countries that **abstained** from the vote.

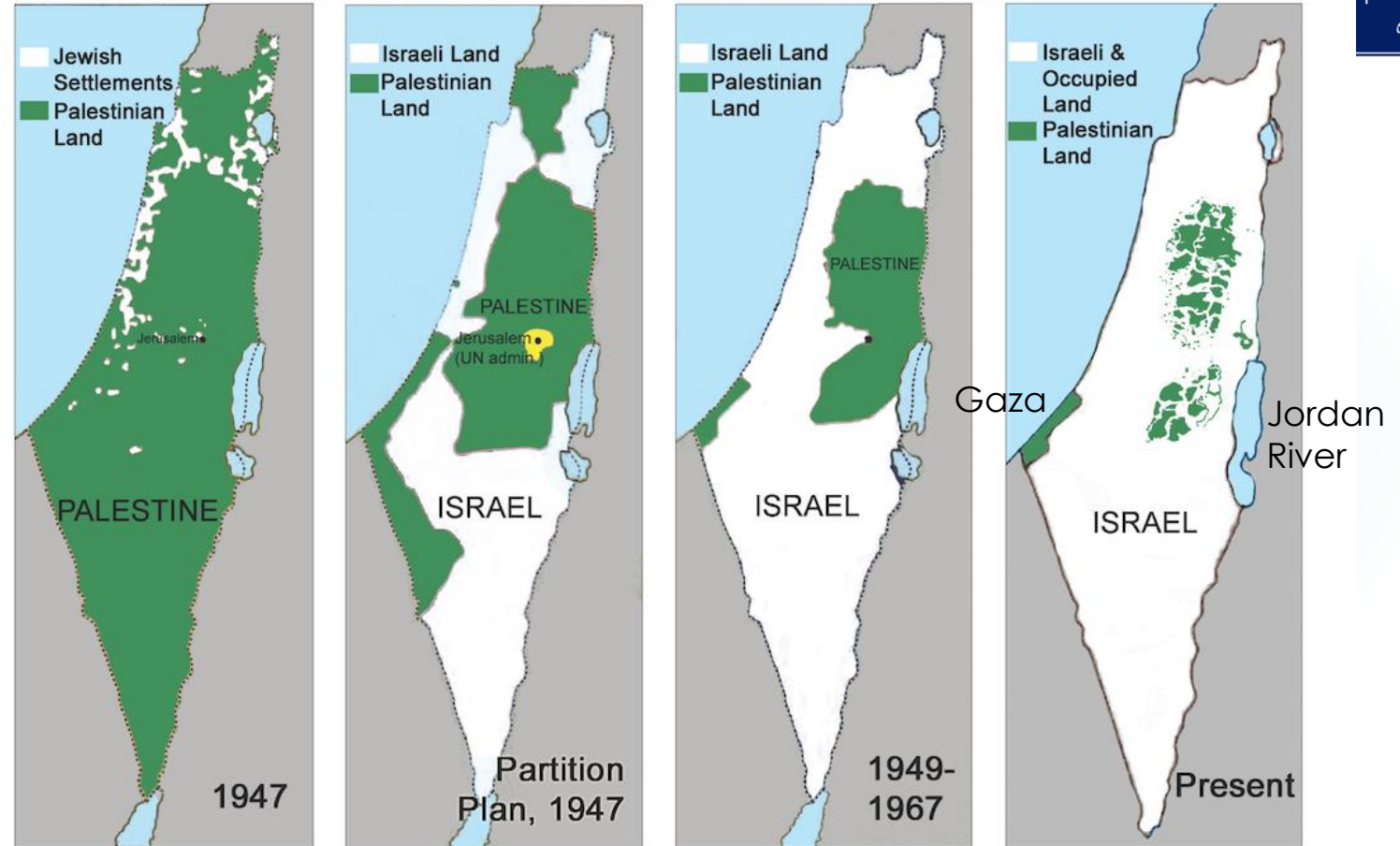
## Israel – Palestine conflict origin

- The Israel–Palestine conflict is the **ongoing struggle between Jews (now Israelis) and Arab Palestinians for homeland** from the end of the nineteenth century.
- **Arabs** are the **original inhabitants** of the land, presently called Israel. On the other hand, Jews adopted the policy of Zionism.
- **Zionism** was a movement of Jews across the world that arose in the late 19th century with the **aim of creating a Jewish state in Palestine**.
- Although the two groups have different religions (Palestinians are mainly Muslims and Israelis are Jews), religious differences are not the cause of the strife. The conflict began as a struggle over land.

## From Palestine to Israel

- From the **end of World War I until 1948**, the **area that both groups claimed was known internationally as Palestine**.
- **Following the war of 1948–1949**, this land was divided into three parts: the State of Israel, the West Bank (of the Jordan River) and the Gaza Strip.
- Presently, **Gaza strip and West Bank constitute Palestinian settlements**.
- Since then the Palestinian settlements have **shrunk** massively and Israelis have taken control over major chunk of the nation.

Palestinian Loss of Land 1947 to Present



# Escalation in Tawang region on the India-China border

Relevance: Prelims & Mains Paper II; Bilateral Relations



## Why in news?

- On **December 9, 2022**, Indian and Chinese troops **clashed in the Yangtse area in the Tawang region along the India-China border**.
- The confrontation in Tawang was the **most serious** skirmish between the two sides **since the Galwan Valley clash in 2020**.
- The Australian Strategic Policy Institute (ASPI) has found that the skirmish that took place in December was aided by **new road infrastructure on the Chinese side**, part of rapid infrastructure development by China along the border in this region allowing access to key locations on the Yangtse plateau more easily than a year ago.

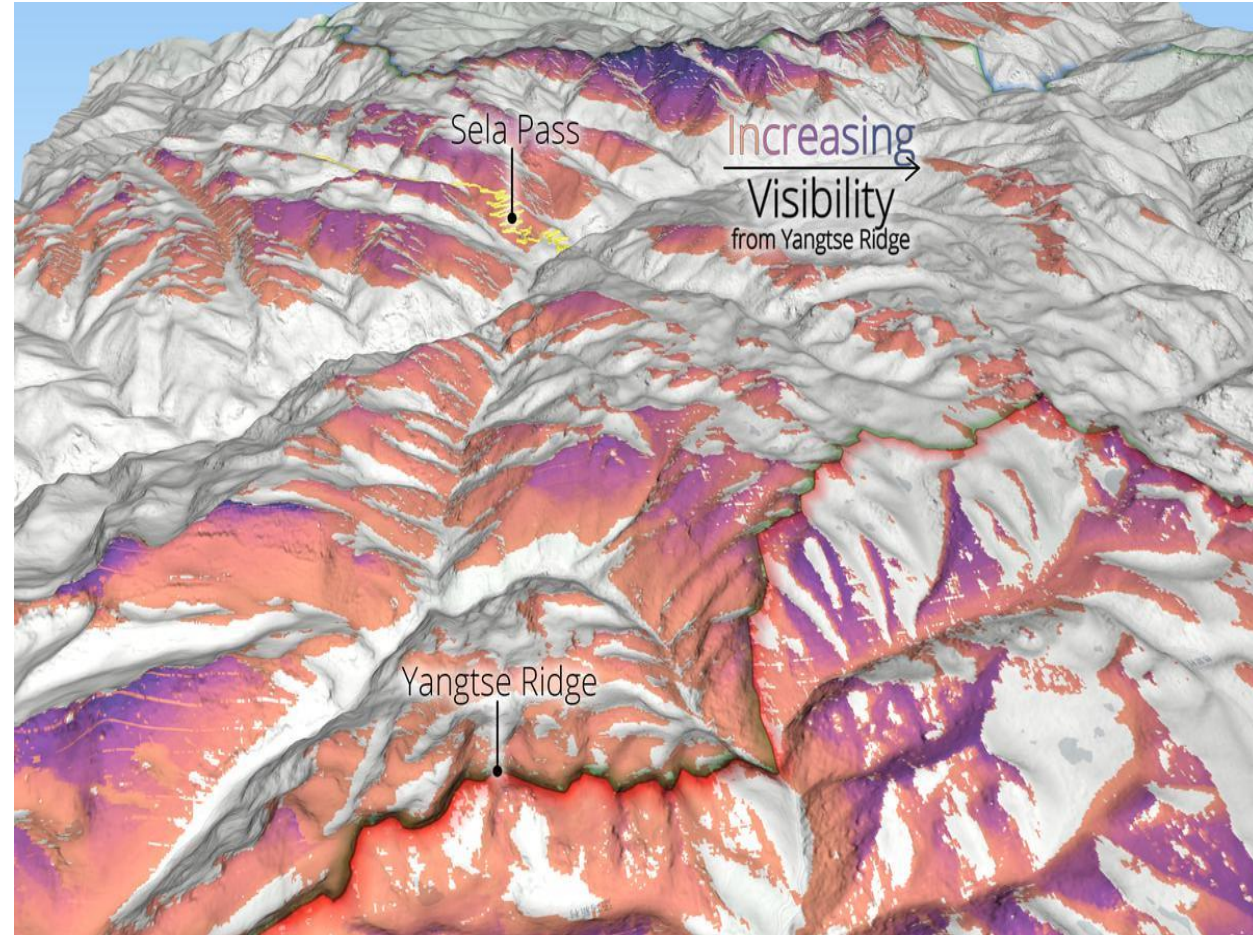
## Why Tawang?

- **Tawang is a strategically significant Indian territory wedged between China and Bhutan.**
- The region's border with China is a part of the de facto but **unsettled India-China border**, known as the **Line of Actual Control, or LAC**.



## Yangste Ridge

- Within Tawang, the Yangtse plateau is important for both the Indian and Chinese militaries.
- With its peak at over 5,700 metres above sea level, the plateau enables visibility of much of the region.
- Crucially, India's control of the ridgeline that makes up the LAC allows it to prevent Chinese overwatch of roads leading to the Sela Pass — a critical mountain pass that provides the only access in and out of Tawang.
- India is constructing an all-weather tunnel through the pass, due to be completed in 2023.
- However, all traffic in and out of the region along the road will still be visible from the Yangtse plateau.



## What led to December 9?



- Indian forces occupy a commanding position along the ridgeline. However, the access roads leading from the larger Indian bases are extremely steep dirt tracks.
- While China's positions are lower on the plateau, it has invested more heavily than the Indian military in building new roads and other infrastructure over the past year.
- It was the construction of a new road that enabled Chinese troops to surge upwards to Indian positions during the December 9 skirmish.



# Indians abroad: Migration, spread, remittances

Relevance: Prelims & Mains Paper II; Indian Diaspora



## Why in news?

- Recently, Prime Minister Narendra Modi inaugurated the **17th Pravasi Bharatiya Divas** convention in Indore.
- The convention began under the **Atal Bihari Vajpayee** government in 2003 to commemorate the return of Mahatma Gandhi to India on January 9, 1915 from South Africa.

## Waves of Migration

- The **term diaspora** traces its roots to the Greek diaspeiro, which **means dispersion**.
- The Indian diaspora has grown manifold since the **first batch of Indians were taken to counties in the east pacific and the Caribbean islands as indentured labourers**.
- **Surinamese President Chandrikapersad Santokhi**, who addressed the convention as a **special guest**, referred to this migration, saying **2023 marks the 150th year of the first such journey of Indians to Surinam**.
- As part of the **second wave** of migration, nearly 20 lakh Indians went to **Singapore and Malaysia to work in farms**. The **third and fourth wave** saw professionals heading to western countries and workers going to the Gulf and west Asian countries in the wake of the oil boom.

## NRI, PIO and OCI

- Overseas Indians are **classified into three categories: Non-Resident Indians (NRI), Persons of Indian Origin (PIOs), Overseas Citizens of India (OCIs).**
- **NRI**s are Indians who are **residents of foreign countries.**
- The **PIO** category was **abolished in 2015** and merged with the **OCI** category.
- However, **existing PIO cards are valid till December 31, 2023**, by which the holders of these cards have to obtain **OCI** cards.
- According to the MEA, **PIO** refers to a foreign **citizen** (except a national of Pakistan, Afghanistan Bangladesh, China, Iran, Bhutan, Sri Lanka and Nepal) who at **any time held an Indian passport**, or who or either of their **parents/ grandparents/great grandparents was born and permanently resided in India as defined in Government of India Act, 1935**, or who is a spouse of a citizen of India or a **PIO**.

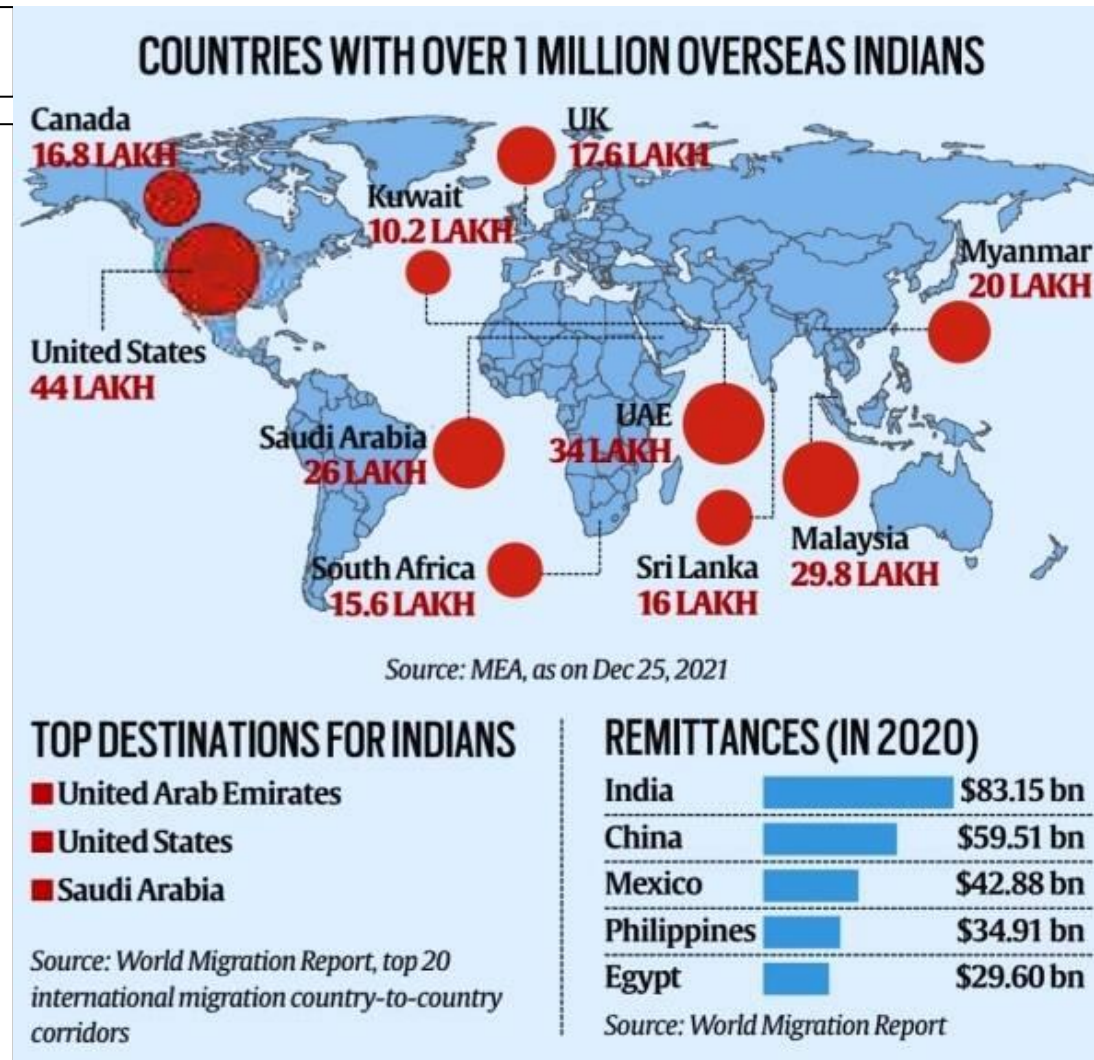
## NRI, PIO and OCI (Contd.)

- A **separate category of OCI** was carved out in **2006**.
- An **OCI** card was given to a foreign national who was eligible to be a citizen of India on January 26, 1950, was a citizen of India on or at any time after January 26, 1950, or belonged to a territory that became part of India after August 15, 1947.
- **Minor children of such individuals, except those who were a citizen of Pakistan or Bangladesh, were also eligible for OCI cards.**



## Numbers & geographical spread

- As on December 31, 2021, there were **4.7 crore Indians living overseas**. The number includes NRIs, PIOs, OCIs, and students.
- Excluding students, the number stands at 3.22 crore, including 1.87 crore PIOs and 1.35 crore NRIs.
- India has the **largest emigrant population in the world**, making it the top origin country globally, **followed by Mexico, Russian and China**.
- The countries with over 10 lakh overseas Indians include **United States of America (44 lakh)**, **United Arab Emirates (34 lakh)**, **Malaysia (29.8 lakh)**, **Saudi Arabia (26 lakh)**, **Myanmar (20 lakh)**, **United Kingdom (17.6 lakh)**, **Canada (16.8 lakh)**, **Sri Lanka (16 lakh)**, **South Africa (15.6 lakh)**, and **Kuwait (10.2 lakh)**.



## Remittances



- The latest World Bank Migration and Development Brief, released in November 2022, said, “For the first time a single country, India, is on track to receive more than \$100 billion in yearly remittances.”
- The World Migration Report notes that India, China, Mexico, the Philippines and Egypt are (in descending order) among the top five remittance recipient countries, “although India and China were well above the rest”.

# India's imports and Trade deficit with China reach record high in 2022



## Relevance: Prelims & Mains Paper II; Bilateral Relations

- **Two Way Trade:** India's bilateral trade with China reached a record **\$135.98 billion in 2022**.
- **Imports :** India's imports accounting for **\$118.5 billion in 2022**. The **imports in 2021 were \$97.5 billion**.
- In the past couple of years, India's **biggest imports from China included active pharmaceutical ingredients (APIs), chemicals, electrical and mechanical machinery, auto components, and medical supplies**.
- For India, trade last year has surpassed what was a record year in 2021, on account of a **recovery in demand in India, increasing imports of intermediate goods, and imports of new categories of goods such as medical supplies**.
- Analysts have seen India's growing imports from China as both a worry, reflecting continued dependence for a range of key goods, but also, to some extent, as a positive indicator of the Indian economy importing more intermediate goods. Intermediate goods are used in the production of final goods.

- **Exports :** India's **exports to China fell from \$28.1 billion in 2021 to \$17.48 billion in 2022**.
- **Trade Deficit :** Trade deficit is the difference between imports and goods. The trade deficit with China crossed the \$100 billion-mark for the first time. **The trade deficit reached \$101.02 billion (\$118.5 Billion - \$17.48 billion) in 2022, up by 45%, from \$69.4 billion in 2021.**

# World Economic Forum summit



## Relevance: Prelims & Mains Paper II; International Organisations

### Introduction

- The World Economic Forum, mostly known for its **annual summit** in **Davos, Switzerland**, is a **non-governmental lobbying organisation founded by economist Klaus Schwab**.
- Its annual summit is held every year in January in Davos, Switzerland.
- Klaus Schwab **founded the WEF in 1971** and has been its **chairperson** since then.
- The WEF was envisioned as a forum that would bring **Schwab's vision of capitalism** to life by engaging with foremost political and business leaders of the world.

### Stakeholder capitalism

- Klaus Schwab was born in Ravensburg, Germany in 1938. He has pioneered the concept of **"stakeholder capitalism."**
- According to Schwab, "it is a form of capitalism in which companies do **not only optimize short-term profits for shareholders, but seek long term value creation**, by taking into account the needs of all their stakeholders, and society at large."
- In his various books and papers on the topic, he says this form of economic organisation keeps society and the planet front and centre, moving beyond the narrow interests of a corporation.



## The WEF partners

- The WEF is largely **funded by its partnering corporations**. These are generally global enterprises with annual turnover greater than \$ 5 billion.
- For these corporations, the WEF provides a platform “to shape the future, accessing networks and experts to ensure strategic decision-making on the most pressing world issues.”
- Partners range from Apollo Tyres to Apple – they can be from any industry, as long as they wish to engage using WEF’s platforms.

## More than “just economics”

- Davos brings together **some 3,000 paying members and selected participants – among whom are investors, business leaders, political leaders, economists, celebrities and journalists – for up to five days** to discuss global issues across 500 sessions.
- However, its salience goes far beyond discussions on economic issues.
- In the past, it has been used as a location for pivotal international diplomacy as leaders are able to break tensions in the town.
- For instance, in 1988 Greece and Turkey avoided war, when the two signed the now famous Davos Declaration.

# China's population drops for the first time in 60 years



**Relevance: Prelims & Mains Paper II; International Events**

## Why in news?

- China saw its population fall by about 850,000 last year – its first drop in six decades.
- This drop brought the country's population to around 1.41 billion at the end of 2022.
- This is the worst drop in Population since 1961, Notably, 1961 was the last year of China's Great Famine.
- Because of the drop in China's population, India will become the world's most populous nation in 2023.
- The fall in population is not unique to China. Countries such as Japan and South Korea, as well as others in Europe, are seeing similar trends.

## Reasons behind Fall

- **One Child Policy:** A major cause behind the fall in China's population is the one-child policy imposed between 1980 and 2015. It limited the number of children; couples could have.
- However, this policy became a matter of concern as the proportion of those in the working-age population (people aged between 16 and 59) started reducing.
- Also, Men outnumbered women by 722 million to 689 million, reflecting the sex-selective births that were carried out because of the preference for the male child.
- **Low Fertility Rate:** Also, The replacement rate which is the number of children a woman is to have in order to at least replace the present generation in the future is highly crucial.
- In 2020, China's TFR was 1.3 births per woman, way below the replacement rate of 2.1.



# UNSC's Sanctions Committee Blacklist LeT's Makki



Relevance: Prelims & Mains Paper II; International Events

## Why in news?

- The **ISIL and Al Qaida Sanctions Committee** of the U.N. Security Council (UNSC) has placed **Abdul Rehman Makki** on its sanctions list.

## Why put on sanctions list?

- Makki acted as a **fundraiser and key planner** of the Pakistan-based terrorist outfit **Lashkar-e-Taiba (LeT)**.
- Abdul Rehman Makki has been also been involved in recruiting and radicalizing youth to violence and planning attacks in India, particularly in **Jammu and Kashmir (J&K)**.
- The **JuD or Jamaat-ul-Dawa** is the parent body of the LeT.

## Who is Abdul Rehman Makki?

■ Place of birth:  
**Bahawalpur**, Punjab Province, Pakistan

■ Nationality: **Pakistan**

■ He is the **deputy chief of Lashkar-e-Taiba (LeT)/ Jamaat-ud-Dawa (JuD)** and Head of Political Affairs Wing of JuD/LeT

■ He also served as **head of LeT's foreign relations**



**department** and member of Shura (governing body). He is the **brother-in-law of JuD/LeT chief Hafiz Muhammad Saeed**

Source: UN Security Council

## China's technical hold

- The **move was made possible after China withdrew the "technical hold"** that it had imposed last June, when the U.S. and India - then a non-permanent member at the UNSC - tried unsuccessfully to get Mr. Makki on the global terror blacklist.
- Since China is a permanent member of UNSC, it has **veto power** in UNSC decisions.

## Attempt to List terrorists

- During India's two-year tenure at the UNSC, **New Delhi put forth a total of five names for designation under the ISIL and Al Qaeda Sanctions Committee** including Abdul Rehman Makki (LeT), Abdul Rauf Asghar (Jaish-e-Mohammed), Sajid Mir (LeT), Shahid Mahmood (LeT), and Talha Saeed (LeT).
- **All five faced a "technical hold" from China**, while the other 14 members of the Security Council supported the listing.

### Block Pattern

Since 2009, China has put on hold India's UNSC listing proposals. Here's a brief timeline.



# 2 Provincial assemblies of Pakistan dissolved



**Relevance: Prelims & Mains Paper II; International Events**

## Why in news?

- The provincial assembly in **Pakistan's Khyber Pakhtunkhwa was dissolved** after the Governor, Haji Ghulam Ali, accepted the request for dissolution by Chief Minister Mahmood Khan, who is a leader of former Prime Minister Imran Khan's party, the Pakistan Tehreek-e-Insaf (PTI).
- The move came just days after the assembly in the country's most populous province, **Punjab, was dissolved** following an order by Imran. Like Khyber Pakhtunkhwa, Punjab too was ruled by the PTI.

## Reason for dissolution

- The dissolution of the two provincial assemblies is seen as a **bid by Imran to push for early national elections**.
- The former prime minister, Imran Khan, has been demanding immediate polls ever since he was removed from the top job in April 2022.
- Meanwhile, the **ruling Pakistan Muslim League (Nawaz) has criticised Khan** and accused him of deepening the political crisis in the country.

## What will happen now?

- Pakistan has usually had simultaneous federal and provincial elections. However, the country's Constitution allows for separate polls for provinces within 90 days of dissolution.
- Therefore, **Punjab and Khyber Pakhtunkhwa are bound to have assembly elections** regardless of whether the general elections happen or not.



# Leopard 2 tank



## Relevance: Prelims; International Events

### Why in news?

- Germany has **not yet decided whether to allow its Leopard 2 tanks to be sent to Ukraine.**
- Ukraine might get this tank from Germany.

### Leopard 2 tank

- The Leopard 2 is **one of the world's leading battle tanks**, used by the **German Army** for decades and by the **militaries of more than a dozen other European nations**, as well as by the armies of countries as far apart as Canada and Indonesia.
- The tank, which is powered by a diesel engine, features night-vision equipment and a laser range finder that can measure distance to an object, enabling it to better aim at a moving target while traveling over rough terrain.

### Superiority over others

- **Britain** has promised to supply Ukraine with 14 of its **Challenger 2 tanks**, and **U.S.** has planned to supply nearly **100 Stryker combat vehicles**, though it has not committed to sending American-made **M1 Abrams tanks**, which require constant upkeep and generally run on special fuel.
- Military experts said that the chief advantage of the Leopard 2 was the quantity that could be sent to Ukraine and the relative ease of repair and logistics.

# India issued notice to Pakistan on the Indus Waters Treaty



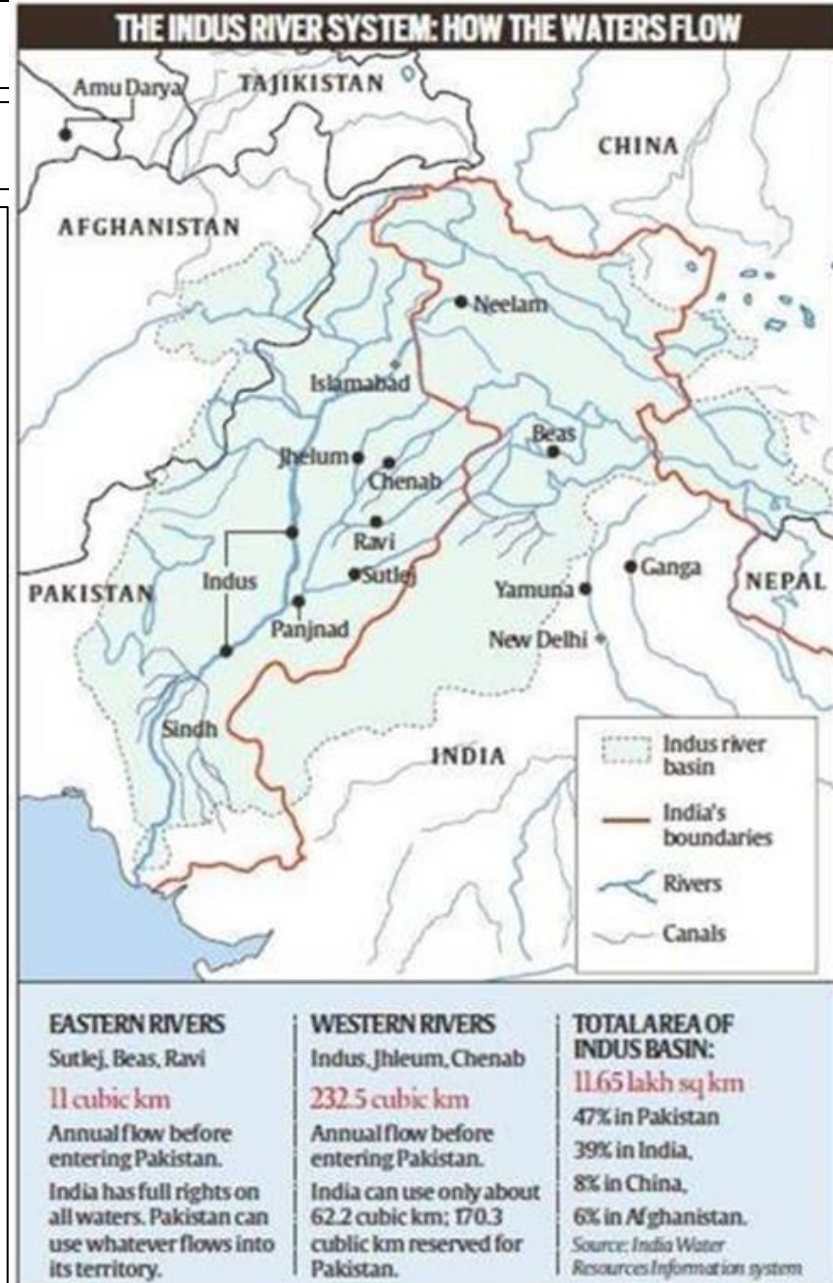
**Relevance: Prelims & Mains Paper II; Bilateral Relations**

## Why in news?

- **New Delhi has issued notice to Islamabad seeking modification of the more than six-decade-old Indus Waters Treaty (IWT) in view of Pakistan's "intransigence" in implementing it.**
- Despite periodic suggestions in India about scrapping the IWT given Pakistan's continued support to terrorism against India, the treaty has been a durable document that has survived three wars and decades of tensions.

## Indus Waters Treaty

- The IWT was signed on September 19, 1960, by Prime Minister Jawaharlal Nehru and Pakistan's President Mohammed Ayub Khan in Karachi after nine years of World Bank-brokered negotiations between India and Pakistan.
- The **treaty defines the water-sharing arrangement for six rivers of the Indus basin that flow through both India and Pakistan.** It has 12 Articles and 8 Annexures (from A to H).
- As per the treaty's provisions, **India can make "unrestricted use" of all the water of the "Eastern Rivers" — Sutlej, Beas, and Ravi — while Pakistan shall get water from the "Western Rivers", Indus, Jhelum, and Chenab.**



## Notice India has sent

- The **notice**, sent on January 25 through the Commissioner for Indus Waters, will **open the process of making changes to the treaty**.
- They said that the notice for modification was to provide Pakistan with an opportunity to enter into intergovernmental negotiations within 90 days to rectify the material breach of IWT.
- India has issued the notice to Pakistan under **Article XII (3) of the IWT**. According to this Article, 'The **provisions of this Treaty may from time to time be modified by a duly ratified treaty concluded for that purpose between the two Governments**'.

## Breach by Pakistan

- India is constructing **two hydroelectric power projects (HEPs) — the Kishenganga HEP on the Kishenganga, a tributary of the Jhelum — and the Ratle HEP on the Chenab**. Pakistan has objected to these projects.
- In 2015, **Pakistan** asked that a **Neutral Expert** should be appointed to examine its technical objections to the Kishenganga and Ratle HEPs. But the **following year**, Pakistan unilaterally **retracted this request**, and **proposed that a Court of Arbitration should adjudicate** on its objections.
- This **unilateral action by Pakistan is in contravention** of the graded mechanism of dispute settlement envisaged by Article IX of IWT. Accordingly, **India made a separate request** for the matter to be referred to a **Neutral Expert**.
- The initiation of **two simultaneous processes** on the same questions and the potential of their inconsistent or contradictory outcomes creates an unprecedented and legally untenable situation, which **risks endangering the IWT** itself.
- In **October, 2022**, the **World Bank** named **Michel Lino** as the **Neutral Expert** and **Prof Sean Murphy** as **Chairman** of the **Court of Arbitration**.

## Kishenganga Hydroelectric Project

- The **Kishenganga** project is located in **village Kralpora** on the **Kishenganga River** in **Bandipora district** of the **Union Territory of Jammu & Kashmir**.
- The project was **inaugurated** by Prime Minister Narendra Modi in **May 2018**.
- It is a **run-of-the-river scheme** that has **three generation units of 110MW each**, with a total capacity of 330 MW.

## Ratle Hydroelectric Project

- The project is **proposed** on the **river Chenab** in **Kishtwar district of Jammu & Kashmir**. It is also a **run-of-the-river project**.
- The project, with a **capacity of 850 MW**, will have five generation units — four units of 205 MW each and one unit of 30 MW.



# ECONOMICS

# Forex fell \$70 bn in 2022- Why?

Relevance: Prelims & Mains Paper III; Economics



## Why in news?

## Valuation Loss

- After three consecutive years of rise, **India's foreign exchange reserves declined by around \$ 70 billion in 2022.**
- From \$632.74 billion as of January 7, 2022, the reserves declined to \$562.851 billion as of December 30, 2022.

- Close to 55-60 per cent of the decline (in reserves) was because of the **valuation impact.**
- Foreign exchange reserves are maintained as a **multi-currency portfolio** comprising major currencies such as the US dollar, Euro, Pound sterling, and Japanese yen, among others, but are **valued in terms of US dollars.**
- When the dollar strengthens, the **valuation of other currencies vis-à-vis the US currency declines**, leading to notional fall in the overall reserves position.
- The RBI also keeps the **forex reserves in the dollar-denominated assets like the 10-year benchmark securities of the US and UK.**
- Since the **yields of these assets rose in 2022**, it led to **fall in the value of these securities** which impacted India's foreign exchange reserves.

## Foreign Investment Withdrawal

- In 2022, **foreign investors pulled out Rs 1.2 lakh crore** from the domestic equity market.
- FIIs sell their equity investment in the rupee, convert it into the dollar and take the money out.
- Higher FII outflows led to an over 10 per cent fall in the rupee – making it the worst-performing Asian currency in 2022.

## Sale of Dollars to reduce Depreciation of Rupee

- The forex reserves also declined as the **Reserve Bank sold dollars in the spot market to smoothen the sudden fluctuations in the rupee's movement (Depreciation) caused by outflows from foreign investors.**
- As per the latest data, the RBI remained net seller of the US dollar between January and October, 2022. It bought \$144.58 billion and sold \$199.02 billion in the spot market.
- On a net basis, the RBI sold \$54.44 billion in the spot market.

# Women break new ground in MGNREGS

Relevance: Prelims & Mains ; Economics



## Why in news?

- The **proportion of women workers participating in the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) has touched a ten-year high** in the ongoing financial year.
- According to the latest statistics available with the Union Ministry of Rural Development, **57.8%** of the workers who used the scheme this year were women, their highest level of participation since 2012-13.
- In **states like Kerala and Tamil Nadu**, women's share in the MGNREGA workforce has been hovering between **85-90%**.

## Reasons

- This phenomenon is the result of **two factors: market forces and welfare incentives for women MGNREGA workers**.
- The **gap between MGNREGA wages and market wages is high in the State, especially for male workers** who are paid far more than female workers in the open market. This makes MGNREGA work much less attractive for male workers.
- Additionally, the many States offer **incentives for women workers under MGNREGA**, such as a dedicated welfare fund which extends insurance against any injury during work, and financial assistance to women workers above the age of 60 years.

# Free foodgrain scheme

Relevance: Prelims & Mains ; Economics



## Why in news?

- In a Cabinet decision on December 23, the Centre decided to provide 5 kg of free foodgrains per month for the 81 crore beneficiaries of the National Food Security Act (NFSA) during 2023, rather than charging them a subsidised amount of ₹3 a kg of rice, ₹2 a kg of wheat and ₹1 a kg of coarse cereal as is currently done.

## End of PMGKAY

- This will **soften the blow of the end of the Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY)**.
- PMGKAY has provided an **additional 5 kg of free grains every month to NFSA beneficiaries** after being launched as an emergency measure in response to the **COVID-19 pandemic** in April 2020 and received multiple extensions since.

## Impact on food subsidy

- In a normal year, without COVID disruptions, the **Centre's food subsidy bill on account of the NFSA** amounted to around **₹2 lakh crore**. The **PMGKAY effectively doubled** that sum for the past two years.
- Now that the **Centre plans to give free foodgrains** under the NFSA for a year, it will **spend an additional ₹15,000 crore to ₹16,000 crore** on that.
- However, the **Centre will save around ₹2 lakh crore** by ending the **PMGKAY scheme**.

# Cryptocurrencies and online gaming awareness campaign

## Relevance: Prelims; Economics



### Why in news?

- The **Investor Education and Protection Fund (IEPF)** will launch an **outreach programme** soon to create **awareness of cryptocurrencies and online gaming**.
- The need for the outreach is based on the observation that both crypto-assets and online gaming (that extends to gambling and betting) are still being promoted in a risky manner despite the recent turmoil in the sector.

### About IEPF

- The **Investor Education and Protection Fund (IEPF)** is **managed by the IEPF Authority**, which was **set up in 2016 under the provisions of Section 125 of the Companies Act, 2013**.
- The Authority is entrusted with the responsibility of administration of the IEPF, which, besides **promoting awareness among investors**, makes refunds of shares, unclaimed dividends, matured deposits and debentures and so on to rightful claimants.

### Investor Education

- As for investment education, the idea is to reach out to household investors, housewives and professionals alike in rural and urban areas and teach them the basics.
- Until the end of October 2022, it had conducted more than 65,000 awareness programmes covering 30 lakh citizens.

## About cryptocurrency

- The crypto dilemma stems from concerns about the unregulated currency having a destabilising effect on the monetary and fiscal stability of a country.
- Also, Cryptocurrency value fluctuates a lot and thus, it is not suitable for investment by common people.
- Further, crypto exchanges in India are being investigated for their alleged involvement in unlawful practices such as drug trafficking, money laundering, violating foreign exchange legislation and evasion of GST.
- The Reserve Bank of India (RBI) has recommended framing legislation on the sector. It is of the view that cryptocurrencies should be prohibited.

## About online gaming

- The Ministry of Electronics and Information Technology (MeitY) has been appointed the nodal industry for online gaming in India; for e-sports, the nodal agency is the Department of Sports, under the Ministry of Youth Affairs and Sports.
- A proposed framework for Central regulation by MeitY is expected to address issues faced by the sector.
- For instance, there is confusion about the definitions of a 'game of chance' like fantasy games, and a 'game of skill', a term which has been used in the Public Gaming Act (1867).
- Rulings of the Courts have held 'Games of Skill' as legitimate business activities. These rulings have also emphasised a clear distinction between 'Games of Skill' and 'Games of Chance'.
- In a 'game of skill', while the element of chance cannot be entirely ruled out, it is the 'element of skill' (mental or physical skill of the user) that plays a dominant role in determining the outcome of the game rather than pure chance.

# Indian rupee fell by 10% against the US dollar in 2022

Relevance: Prelims & Mains ; Economics



## Why in news?

- The Indian rupee depreciated by around 10 per cent against the US dollar in 2022 on account of sharp appreciation of the greenback (meaning dollar).
- During the year, the rupee fell to a lifetime low of 83.2 against the dollar.
- According to forex analysts, although the outlook on the rupee remains weak in the near future, the depreciation in local currency may not continue for a longer period as India remains the fastest-growing economy.

## Reasons for depreciation of Rupee

- The US Fed aggressively raised interest rates by 425 basis point (bps) in 2022 in its fight against inflation.
- This led to a higher interest rate differential between the US and India, and investors pulled out money from the domestic market and started investing in the US market to take advantage of higher rates.
- In 2022, foreign portfolio investors (FPIs) pulled out Rs 1.34 lakh crore from the Indian markets – the highest-ever yearly net outflow.
- Also, Russian invasion of Ukraine increased the FPI withdrawals as investors looked for safe havens for their investment and the global economic slowdown made inflows tougher.



# 2023 is the International Year of Millets

Relevance: Prelims & Mains ; Economics



## Why in news?

- The United Nations has declared 2023 as the International Year of Millets.
- The declaration was made at the initiative of India, which also accounts for a fifth of the world's millets production.
- Millets include bajra (pearl millet), jowar (sorghum), ragi (finger millet), kodo (kodo millet), kutki (little millet), kakun (foxtail millet), sanwa (barnyard millet), cheena (proso millet), kuttu (buckwheat) and chaulai (amaranth).

## Nutrient comparison with Wheat and Rice

- Millets score over rice and wheat in terms of minerals, vitamins, and dietary fibre content, as well as proteins.
- Polished/ white rice, for instance, contains only 2-4 mg/ kg iron and 15-16 mg/ kg zinc. Wheat has more of both — iron (37-39 mg/ kg) and zinc (40-42 mg/ kg) — but its protein quality is poorer than even that of rice.
- Moreover, 80% of Wheat protein comprises glutes, known to trigger gastrointestinal and autoimmune disorders in many people.
- Bajra (pearl millet), on the other hand, has iron, zinc, and protein levels comparable to that of wheat, but it's gluten-free and has more fibre.
- The rotis from bajra makes one feel fuller for longer, as they take more time to digest and do not raise blood sugar levels too fast.

## Agriculture suitability

- Millets are **hardy and drought-resistant crops**.
- This has to do with their **short duration** (70-100 days, against 115-150 days for rice and wheat), **lower water requirement** (350-500 mm versus 600-1,250 mm) and ability to **grow even on poor soils and in hilly terrain**.

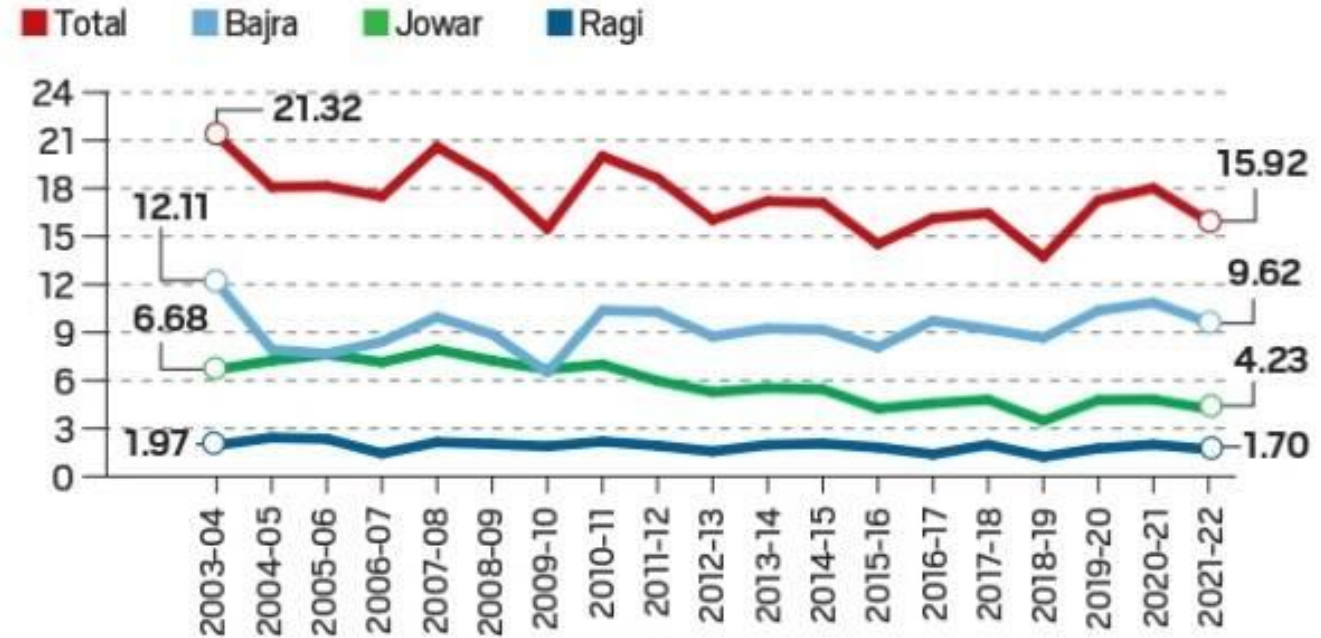
## Where millets lag

- However, millets **aren't the first choice either of consumers or of farmers**.
- Rice and Wheat production were given emphasis in **green revolution**. It is the rice and wheat which are mainly distributed under the **PDS system**.
- Moreover, **rolling rotis is easier** with wheat than millet flour. This is because the **gluten proteins make the wheat dough more cohesive and elastic**. The **resultant breads come out light and fluffy**, which isn't the case with bajra or jowar.
- For farmers, **low per-hectare yields** — the national average is roughly 1 tonne for jowar, 1.5 tonnes for bajra and 1.7 tonnes for ragi, as against 3.5 tonnes for wheat and 4 tonnes for paddy — are a disincentive.
- With access to **assured irrigation**, they would tend to switch to rice, wheat, sugarcane, or cotton.

## Production of Millets in India

- The chart shows how millets have been reduced to “orphan crops” over the years, **planted largely in marginal areas prone to water stress.**
- Between 2003-04 and 2021-22, India’s millet output has actually fallen from 21.32 million tonnes (mt) to 15.92 mt. Almost 98% of it is just three cereals — bajra (down from 12.11 mt to 9.62 mt), jowar (6.68 mt to 4.23 mt) and ragi (1.97 mt to 1.70 mt) — with small millets accounting for the rest (0.56 mt to 0.37 mt)..

## PRODUCTION OF MILLETS (in million tonnes)



# Supreme Court upholds legality of demonetisation

Relevance: Prelims & Mains ; Economics



## Why in news?

- In a surprise announcement on the evening of **November 8, 2016**, Prime Minister Narendra Modi said in a televised address to the nation that the two banknotes will be “just worthless piece of paper” with immediate effect, and went on to introduce new notes of Rs 2,000 and Rs 500 for public circulation.
- The **Supreme Court upheld the government’s decision to demonetise currency notes of Rs 500 and Rs 1,000 by a 4:1 majority.**
- Rather than the effect of the decision, the **court was to consider whether the recommendation for the policy came from the government or the RBI.**

## Legal Provision

- Section 26(2) of the RBI Act states that “**on recommendation of the [RBI] Central Board, the Central Government may, by notification in the Gazette of India, declare that, with effect from such date... any series of bank notes of any denomination shall cease to be legal tender** save at such office or agency of the Bank and to such extent as may be specified in the notification”.
- As per Section 26(2), the **proposal for demonetisation is to emanate from the central board of the RBI.**

## Argument by petitioners

- The **petitioners, referred to the Preamble of the Reserve Bank of India Act, 1934, which said the right to regulate the issue of banknotes is entirely with RBI.**
- It also generally operates the currency and the credit system. That is why anything to do with currency must have emanated from the Reserve Bank of India.
- The **petitioners also referred to Section 26(2) of the RBI act.** The government could have exercised the power to demonetise only on RBI's recommendation.

## Supreme Court's verdict

- In its majority 4:1 judgment, it was held that the Centre's notification dated November 8, 2016, was valid.
- The SC argued that the **central government's decision was after RBI board's approval** which shows in-built safeguard against centre's powers.

# Sovereign Green Bonds



**Relevance: Prelims & Mains Paper III; Economics**

## Why in news?

- The Reserve Bank of India (RBI) announced that it **will**, for the first-time, **issue Sovereign Green Bonds (SgrBs) worth Rs 16,000 crore**, in two tranches of Rs 8,000 crore each in the current financial year.
- The RBI said it will issue 5-year and 10-year green bonds of Rs 4,000 crore each on January 25 and February 9.

## Green Bonds

- Green bonds are bonds **issued by any sovereign entity, inter-governmental groups or alliances and corporates** with the aim that the **proceeds** of the bonds are utilised for projects classified as **environmentally sustainable**.

## Importance

- A lot of financing is needed to address Environment related challenges.
- The funds raised through Green bonds are exclusively used for Environment.

## Benefit to investors

- Green Bonds offer investors a **platform to engage in good practices** and also **influencing the business strategy of bond issuers**.
- Also, like in case of other bonds, the **return on green bonds is guaranteed** to the investors and is **not linked to success of the projects** for which the funds are used.

## Use of Proceeds

- The government will use the proceeds raised from SGrBs to finance or refinance expenditure (in parts or whole) for various **green projects**, including in renewable energy, clean transportation, energy efficiency, climate change adaptation, sustainable water and waste management, pollution prevention and control, and green buildings.
- In renewable energy, investments will be made in solar, wind, biomass and hydropower energy projects.



# RBI proposed a new approach towards loan loss provision by banks



**Relevance: Prelims & Mains Paper III; Economics**

## **Incurred Loss Approach**

- The **present approach for Loan loss recognition by banks is incurred loss approach**. The incurred loss approach requires banks to provide for losses after they have occurred or have been incurred.
- Thus, there is **delay in recognizing losses** in the sense that losses are recognised when they occur, and not when they are expected. The delays in recognizing loan losses overstated the income generated by the banks and impacted their capital base.

## **Expected loss-based approach**

- Under this practice, a **bank is required to estimate expected credit losses based on forward-looking estimations**, rather than wait for credit losses to be actually incurred before making corresponding loss provisions.
- The new proposed approach will further enhance the banking system's resilience in line with globally accepted standards.
- As per RBI, it is likely to result in excess provisions for expected defaults on loan payments as compared to a shortfall in provisions as seen in the incurred loss approach.



# New PPP Model adopted by Railways

Relevance: Prelims & Mains Paper III; Economics



## Why in news?

- The Indian Railways has adopted a **new Public-Private Partnership (PPP) Model**.
- It has partnered with global manufacturing giant **Siemens** to produce **1,200 (in number) high-horsepower electric locomotives**. This project will be of around Rs 26,000 crore.
- Railways has had adopted similar, but **slightly different models arrangements** with other global majors like **Alstom and General Electric** to procure locomotives from factories in Bihar's **Madhepura and Marhowra respectively**.

## Procurement cum Maintenance Agreement

- In the **Madhepura-Marhowra projects**, the Railways **gave land for the factory whereas the technology partners did everything else, including setting up the factory, supplying the manpower, procurement of materials and maintain locomotives over their lifetime**.
- This was called Procurement cum Maintenance Agreement.

## Manufacture cum Maintenance Agreement

- Siemens which will be the supplier in this project has no capital expenditure liability in this contract.
- This is because **all the locomotives will be manufactured in Railways' newly built factory in Dahod, Gujarat. The manpower in the factory will also be supplied by Railways**.
- **Siemens will bring in material procurement, supervision, and technology to make the 9,000 horsepower engines**.
- The contract is for 35 years, **including maintenance**, which is roughly the entire lifecycle of the engines.

## Advantages of these Models

- In both the models, there is a notable advantage.
- Both of these are based on an “assured offtake” model. Under it, all the 1,200 engines are pre-bought by the client, so there is zero risk.

## New Locomotives

- Indian Railways is calling these high horsepower (9000 HP) locomotives “future workhorse” for freight operation.
- These locomotives will improve the average speed of such trains to around 50-60 kmph over the existing 20-25 kmph.

## Diesel Engines

- The Indian govt. has decided to gradually electrify 100 per cent of its broad-gauge rail network of around 66,000 km.
- As a result, end-of-life diesel locomotives will be eventually retired. However, Railways will keep around 2,000 high-horsepower diesel locomotives for various needs.

# RBI's report on state govt Budgets

Relevance: Prelims & Mains Paper III; Economics



## Why in news?

- Much of the public discussion in India tends to focus on the Union government's budget.
- However, state governments account for a lion's share of general government spending (central government and states), with **capital expenditure by states exceeding that of the central government**.
- Recently, the **Reserve Bank of India released its report on state government budgets for 2022-23**.
- The report outlines how **state government finances**, which had come under severe stress in 2020-21 because of the slowdown in the economy due to the pandemic, have **improved in the years thereafter**.
- However, there are **three major areas of concern**.

## Debt-to-GDP

- The **state debt-to-GDP ratio** remains uncomfortably high.
- As per the report, the debt-to-GDP ratio has fallen from 31.1 per cent in 2020-21 – a year when states had struggled to manage the economic fallout of the pandemic — to **29.5 per cent in 2022-23**.
- To put this number in perspective, the Fiscal Responsibility and Budget Management review committee, headed by N K Singh, had **recommended a debt-to-GDP ratio of 20 per cent for states**.
- However, there is marked variation across states. **Punjab, Tamil Nadu, Haryana and West Bengal** have the highest interest payments to revenue receipts ratio.

## Contingent liabilities

- State governments have also seen a **significant expansion** in their contingent liabilities.
- Contingent liabilities here refer to the **obligations of a state government to repay the principal and interest payments in case a state-owned entity defaults on a loan.**
- As per the report, the guarantees issued by state governments have risen from Rs 3.12 lakh crore or 2 per cent of GDP in 2017 to Rs 7.4 lakh crore or 3.7 per cent of GDP.

## Old Pension Scheme

- Lastly, new risks have emerged with **some states now opting to return to the old pension scheme.**
- In the early 2000s, there was a growing realisation that financing the old pension scheme would prove to be challenging.
- Thus, a new pension framework was ushered in which would limit the financial burden of the state.
- While most states had then signed on to the new pension scheme, some states such as **Rajasthan, Punjab, Himachal Pradesh and Chhattisgarh** have now chosen to revert.

# Additional Tier-1 bonds, and the case against Yes Bank



Relevance: Prelims; Economics

## Why in news?

- The **Bombay High Court Friday** quashed the write-off of **Additional Tier-1 (AT1) bonds** worth Rs 8,400 crore issued by **Yes Bank Ltd**, bringing relief to investors.

## What are AT1 bonds?

- AT1 bonds are **unsecured bonds that have perpetual tenor**. In other words, these bonds, issued by banks, have **no maturity date**.
- They have a **call option**, which can be used by the banks to buy these bonds back from investors.
- These bonds are typically **used by banks to bolster their core or tier-1 capital**.
- AT1 bonds are **subordinate to all other debt and only senior to common equity**. Mutual funds (MFs) were among the largest investors in perpetual debt instruments.

## What led to Write-off?

- Yes Bank, which was on the verge of collapse, was placed under a moratorium by the Reserve Bank of India in March 2020 and a new management and board were appointed as part of a rescue plan worked out by the RBI.
- The **central bank allowed a write-off of Rs 8,400 crore on AT1 bonds issued by Yes Bank** after it was rescued by the State Bank of India.

## What did Yes Bank do?

- A Sebi probe found that the bank facilitated the **selling of AT1 bonds from institutional investors to individual investors.**
- It found that during the process of selling the AT1 bonds, **individual investors were not informed about all the risks involved in the subscription of these bonds.**
- The Sebi investigation also found that Yes Bank **represented these bonds as a 'Super FD' and 'as safe as FD' to the investors.**

# SEBI's ban on agri commodities trade

Relevance: Prelims; Economics



## Why in news?

- The farmer's union - Shetkari Sanghatana has launched an agitation outside the office of the Securities and Exchange Board of India (SEBI) in Mumbai.
- This has been done against the continued suspension of derivatives trading in 7 agri-commodities.

## About this ban

- SEBI suspended futures trading in the 7 commodities in Dec. 2021.
- **SEBI has put an end to any new futures contract in these commodities.**
- **These include wheat, paddy (non-basmati), moong, chana, soyabean and its derivatives, mustard seed and its derivatives, and palm oil and its derivatives.**

## Derivatives in Commodities

- Agricultural commodities are traded on the National Commodities and Derivatives Exchange (NCDEX) and the Multi Commodity Exchange (MCX).
- **In a futures contract, a supplier pledges to sell a certain quantity at a price agreed with buyer at a future date.**

## Intention behind ban

- The ban on the launch of futures contracts was **aimed at stopping speculative trade** in these commodities.
- It is **part of the govt's effort to control the rising food inflation.**

## Farmers protest against the ban

- The futures trends provided by the exchange are an important indicator for farmers. Physical markets or mandis often follow the trend, and farmers sell the food stocks they are withholding on its basis.
- **As per Shetkari Sanghatana , price discovery is better in stock exchanges than in physical markets.** Price discovery is a process by which market prices are determined, largely by interactions between buyers and sellers.



# T+1 settlement cycle



**Relevance: Prelims & Mains Paper III; Economics**

## Why in news?

- A new settlement cycle called **T+1** has come into effect in the top-listed securities on January 27, 2023.
- After China, India will become the 2nd country in the world to start this cycle.
- However, the U.S., U.K. and Eurozone markets are yet to move to this system.

## What is the T+1 cycle?

- (T+1) or 'trade-plus-one' settlement cycle means that trade-related settlements must be done within a day or 24 hours of the completion of a transaction.
- For example, under T+1, if a customer bought shares on Wednesday, they would be credited to the customer's demat account on Thursday. This is different from T+2, where they will be settled on Friday.
- As many as **256 large-cap and top mid-cap stocks**, including Nifty and Sensex stocks, have come under the T+1 settlement from Friday.

## Past Settlement Cycles

- Until 2001, stock markets had a weekly settlement system. The markets then moved to a rolling settlement system of T+3, and then to T+2 in 2003.

## Its benefits

- In the T+1 format, if an investor sells a share, she will get the money within a day, and the buyer will also get the shares in her demat account within a day.
- As per financial experts, the shorter trade settlement cycle will be **beneficial from a liquidity perspective.**

## Safety of Markets

- The narrower the settlement cycle, the **narrower is the time window for a counterparty insolvency/bankruptcy to impact the settlement of a trade.**
- Further, **the capital blocked in the system to cover the risk of trades will get proportionately reduced** with the number of outstanding unsettled trades at any point in time.

## Opposition of Foreign Investors

- T+1 has been implemented despite opposition from foreign investors. They had already written to the regulator and the Finance Ministry about the operational issues faced by them, as they operate from different geographies.
- Among the issues raised by them were **time zone difference, information flow process, and foreign exchange problems.**

# What is short selling?



**Relevance: Prelims & Mains Paper III; Economics**

<b>Why in news?</b>	<b>Long Position</b>	<b>Short Selling</b>
<ul style="list-style-type: none"><li>- Short seller <b>Hindenburg Research</b> on January 25 <b>disclosed short positions</b> in <b>Adani Group</b>, <b>alleging stock manipulation and accounting fraud</b> in its latest investigative report.</li></ul>	<ul style="list-style-type: none"><li>- “<b>Buy low, sell high</b>” is the <b>traditional investment strategy</b> in which one buys a stock or security at a particular price and then sells it when the price is higher, thereby booking a profit.</li><li>- This is referred to as a “<b>long position</b>”, and is based on the view that the price of the stock or security will appreciate with time.</li></ul>	<ul style="list-style-type: none"><li>- Short selling, or shorting, is a <b>trading strategy based on the expectation that the price of the security will fall.</b></li><li>- In short selling, the <b>trader usually does not own the securities he sells, but merely borrows them.</b></li><li>- In the stock market, traders usually short stocks by selling shares they have borrowed from others through brokerages.</li><li>- When the <b>price of the shares falls to the expected levels, the trader would purchase the shares at the lower price and return them to the owner, booking a profit in the process.</b></li><li>- If, however, the price of the shares appreciates instead of falling, the trader will be forced to buy shares at a higher price to return to the owner, thereby booking a loss.</li></ul>

ENVIRONMENT  
&  
BIODIVERSITY

# Green Hydrogen Mission

Relevance: Prelims & Mains Paper III; Environment



## Why in News?

- The government has formally approved the National Green Hydrogen Mission with a stated aim of **making India a global hub for the production of green hydrogen**.
- The outlay of Rs **19,744 crore** has been approved by the Union Cabinet for the mission.
- The mission is aimed at **decarbonisation of the energy sector** and **use in mobility applications** in a bid to lower the dependence on imported fossil fuels.
- The ultimate aim is to fuel key sectors of the economy using hydrogen that is **made by splitting water through an electrical process called electrolysis, using a device called electrolyser that is powered entirely by renewable energy**.

## Hydrogen as a fuel

- Hydrogen, the most common element in nature, exists only in combination with other elements, and has to be **extracted from naturally occurring compounds like water** (which is a combination of two hydrogen atoms and one oxygen atom).
- Hydrogen is a **clean molecule**, but the process of extracting it is energy intensive.
- It was in 1970s that the possibility of hydrogen replacing fossil fuels came to be considered seriously.
- **Three carmakers — Japan's Honda and Toyota, and South Korea's Hyundai — having since moved decisively to commercialise the technology, albeit on a limited scale.**

## Sources of Hydrogen

- The sources and processes by which hydrogen is derived are categorised by **colour tabs**.
- Hydrogen produced from **fossil fuels** is called **grey hydrogen**, which constitutes the **bulk of the hydrogen generated today**.
- Hydrogen generated from fossil fuels with **carbon capture and storage options** is called **blue hydrogen**, while hydrogen **generated using electrolyzers powered by renewable power sources** is called **green hydrogen**.

## Importance

- Green hydrogen has specific **advantages**.
- One, it is a **clean burning molecule that can decarbonise a range of sectors** including iron and steel, chemicals, and transportation.
- Two, **renewable energy that cannot be stored or used by the grid can be channeled to produce hydrogen**.

## Commercial Viability

- Green hydrogen is **not commercially viable** at present.
- The current cost in India is **around Rs 350-400 per kg**; it is likely to become **viable only at a production cost of under Rs 100/ kg**.
- With implicit subsidy support and a government-backed R&D push, the plan is to bring down the costs of electrolyzers to make the production of green hydrogen cost-competitive.

## Implementation of Mission

## Use Cases in India



- The **Ministry of New and Renewable Energy** is in the process of formulating guidelines for the scheme that seeks to promote the development of green hydrogen production capacity of at least 5 million metric tonnes (MMT) per annum with an associated renewable energy capacity addition of about 125 gigawatts (GW) by 2030.
- A **major part** of this is a proposed **Strategic Interventions for Green Hydrogen Transition Programme (SIGHT)**, under which **two financial incentive mechanisms** — targeting domestic manufacturing of **electrolysers** and the **production of green hydrogen** will be promoted.
- The draft Mission document is also likely to propose **major push** for hydrogen in the **auto sector** — R&D for fuel cell development and pilot projects for fuel cell vehicles.

- Besides automobiles, there is a concerted attempt to **leverage green hydrogen in sectors such as petroleum refining and steel**.
- In **April 2022**, state-owned **Oil India Limited** commissioned India's first 99.99 per cent pure green hydrogen plant in **Jorhat, Assam**.
- In the proposed Mission, the steel sector has been made a stakeholder, and it has been proposed to set up pilot plants with part funding from the government to **explore the feasibility of using green hydrogen in Direct Reduced Iron (DRI) production** by partly replacing natural gas with hydrogen in gas-based DRI plants.

# Fuel Cells and Automobiles



- Hydrogen fuel must be transformed into electricity by a device called a **fuel cell stack** before it can be used to power a car or truck.
- A fuel **cell converts chemical energy into electrical energy** using oxidising agents through an oxidation-reduction reaction.
- Fuel cell-based vehicles most commonly **combine hydrogen and oxygen to produce electricity to power the electric motor on board**. Since fuel cell vehicles use electricity to run, they are considered **electric vehicles (EVs)**.
- Inside each fuel cell, **hydrogen is drawn from an onboard pressurised tank** and made to react with a **catalyst**, usually made from **platinum**.
- As the **hydrogen passes through the catalyst**, it is **stripped of its electrons**, which are **forced to move along an external circuit**, producing an electrical current. This current is used by the electric motor to power the vehicle, with the **only by-product being water vapour**.
- Hydrogen fuel cell cars have a **near-zero carbon footprint**. Hydrogen is about **2-3 times as efficient** as burning petrol, because an electric chemical reaction is much more efficient than combustion.
- The **Toyota Mirai and the Honda Clarity** cars are powered by fuel cells.



# Europe turns to LNG instead of Russia gas- Climate impacts

Relevance: Prelims & Mains Paper III; Environment



## Why in news?

- The EU is **weaning itself off piped Russian gas by rapidly expanding imports of liquified natural gas**, much of it fracked in the US.
- As liquified natural gas tankers carrying fracked US gas start to land in northern Germany, climate activists are calling it a major setback in the effort to limit global heating.

## What is liquified natural gas?

- **LNG** is natural gas reduced to a **liquid state** (liquefaction) through **intense cooling** to around -161 degrees Celsius (-259 Fahrenheit).
- This liquid gas is **600 times smaller** than the **original volume** and is **half the weight of water**.
- The compressed fossil fuel, which is **constituted almost wholly of methane— a potent greenhouse gas** —, can be **transported around the world by ship**.
- After arriving at its destination, the **cargo is regasified in a floating terminal** and **redistributed through pipelines**.
- But despite LNG's export potential, the **high cost of liquefaction and producing LNG** has limited its market.
- The **cooling, liquefying and transport processes, as well as the post-transport regasification procedures, also require a lot of energy**.

## Climate impact



- A **lot of energy** is required to extract natural gas from a reservoir, to transport from the gas field to the LNG facility for processing, to chill gas to such low temperatures, and to hold it at that temperature before it is warmed and regasified following a long sea or train journey.
- **Methane loss across the supply chain** risks also contributes to LNG's high emissions.
- With **LNG creating almost 10 times more emissions than piped gas by one estimate**, its rapid expansion will likely compromise climate targets.
- Though touted as a short-term fix, many fear the gas is here for the long haul as the EU becomes the biggest LNG importer in the world.
- Meanwhile, **LNG emits 14 times as much carbon as solar power** when producing the equivalent amount of energy, and **50 times as much carbon as wind power**.

# Ozone hole filling up

Relevance: Prelims & Mains Paper III; Environment



## Why in news?

- The **ozone 'hole'**, once considered to be the gravest danger to planetary life, is **now expected to be completely repaired**, a UN-backed scientific panel has reported.
- The **recovery of the ozone layer has been made possible by the successful elimination of some harmful industrial chemicals, together referred to as Ozone Depleting Substances or ODSs, through the implementation of the 1989 Montreal Protocol.**

## Ozone Hole Emergence

- The depletion of the ozone layer, **first noticed in the early 1980s**, used to be the biggest environmental threat before climate change came along.
- **Ozone** (chemically, a molecule having three Oxygen atoms, or **O<sub>3</sub>**) is **found mainly in** the upper atmosphere, an area called **stratosphere**, between 10 and 50 km from the Earth's surface.
- It is critical for planetary life, since it **absorbs ultraviolet rays** coming from the Sun.
- UV rays are known to **cause skin cancer and many other diseases and deformities in plants and animals.**
- Though the problem is commonly **referred to as the emergence of a 'hole' in the ozone layer**, it is **actually just a reduction in concentration of the ozone molecules.** Even in the normal state, ozone is present in extremely low concentrations in the stratosphere.

## Causes

- In the 1980s, scientists began to notice a sharp drop in the concentration of ozone. This drop was much more pronounced over the South Pole.
- By the middle of 1980s, scientists had figured out that the **chief cause of ozone depletion was the use of a class of industrial chemicals that contained chlorine, bromine or fluorine.**
- The **most common** of these were the **chlorofluorocarbons**, or CFCs, that were **used extensively in the airconditioning, refrigeration, paints, and furniture industries.**

## Situation Improvement

- The **ozone hole has been steadily improving since 2000**, thanks to the effective implementation of the Montreal Protocol.
- The assessment has reported that **nearly 99 per cent of the substances banned by the Montreal Protocol have now been eliminated from use**, resulting in a slow but definite recovery of the ozone layer.
- The latest scientific assessment has said that if current policies continued to be implemented, the **ozone layer was expected to recover to 1980 values by 2066 over Antarctica, by 2045 over the Arctic, and by 2040 for the rest of the world.**



## Impact on Climate Change



- The elimination of ozone-depleting substances has an **important climate change co-benefit** as well.
- These **substances also happen to be powerful greenhouse gases**, several of them **hundreds or even thousands of times more dangerous** than carbon dioxide, the most abundant greenhouse gas and the main driver of global warming.
- The report said that global compliance to the Montreal Protocol would ensure the **avoidance of 0.5 to 1 degree Celsius of warming by 2050.**
- This means that if the use of CFCs and other similar chemicals had continued to grow the way it did before they were banned, the world would have been 0.5 to 1 degree Celsius warmer than it already is.

# Liquefied Natural Gas (LNG) and its impacts the climate



Relevance: Prelims & Mains Paper III; Environment

## Why in news?

- The EU has been decreasing its dependence on piped Russian gas by rapidly expanding imports of liquefied natural gas (LNG).
- Much of it is fracked in the U.S.
- Fracking is a method of getting oil or gas from the rock below the ground surface by making large cracks in it.

## Liquefied natural gas (LNG)

- LNG is natural gas reduced to a liquid state (liquefaction) through intense cooling to around -161 degrees Celsius (-259 Fahrenheit).
- This liquid gas is 600 times smaller than the original volume and is half the weight of water.
- The compressed fossil fuel, which is constituted almost wholly of methane — a potent greenhouse gas — can be transported around the world by ship.
- After arriving at its destination, the cargo is regasified in a floating terminal and redistributed through pipelines.

## Expensive

- But despite LNG's export potential, the high cost of liquefaction and producing LNG has limited its market.
- In Germany, the estimated cost of building floating LNG terminals for imports to substitute Russian gas has doubled, due in part to higher operating and infrastructure costs.

## Climate impact of LNG

- First of all, the compressed fossil fuel is constituted almost wholly of **methane — a potent greenhouse gas**.
- The **emissions intensity** of piped gas from Norway in particular is almost **10 times less than average LNG emissions**.
- Also, LNG emits 14 times as much carbon as solar power when producing the equivalent amount of energy, and 50 times as much carbon as wind power.
- Secondly, a **lot of energy is required to extract natural gas from a reservoir**, to **transport** from the gas field to the LNG facility for processing, to **chill gas** to such low temperatures, and to **hold it at that temperature** before it is warmed and regasified following a long sea or train journey.
- Thus, the cooling, liquefying and transport processes, as well as the post-transport regasification procedures, also require a lot of energy. Between **10-25% of the energy of the gas is being lost during the liquefaction process**.

SCIENCE  
&  
TECHNOLOGY



# Generative AI

**Relevance: Prelims & Mains Paper III; Science & Technology**



## Generative AI

- Generative AI is a **type of artificial intelligence that involves creating new, original content or data using machine learning algorithms.**
- It can be used to **generate text, images, music, or other types of media.**
- Generative AI **works by training a model on a large dataset** and then using that model to generate new, previously unseen content that is similar to the training data.
- This can be done through techniques such as neural machine translation, image generation, and music generation.

## Uses of Generative AI

- Generative AI has the potential to revolutionize many industries by automating the creation of content and enabling the generation of new ideas and concepts.
- Generative AI can **craft sales, marketing, and brand messaging.** Agencies can generate personalised social media posts, blogs, and marketing text and video copies by providing a text prompt to a Generative AI service, like **ChatGPT.**
- Similarly, the prompt “futuristic athletic sneaker, digital art, 3d render on a yellow background with paint splashing in the air” in **Microsoft Bing Image Create**, generated the image as shown along.



## Uses (Contd.)



- GitHub, Copilot6 and ChatGPT1 can **generate code** and help with developer productivity. It can suggest entire functions, snippets, and even fully functioning modules and generate code in real-time right in your editor.
- Furthermore, generative artificial intelligence can **sift through numerous legal research materials** and produce a pertinent, specific, and actionable summary.
- Generative AI can also help **create and simulate complex engineering, design, and architecture**. It can help speed up the iterative development and testing of novel designs.
- It can also help health professionals with their **medical diagnosis**. AI can generate potential and alternative treatments personalised to patients' symptoms and medical history. For instance, DeepMind AlphaFold can predict the shape of protein.
- However, it also **raises ethical concerns** about the potential for **biased or inaccurate content** to be generated and disseminated.
- It is important for developers and users of generative AI to consider the potential impacts and ensure that the technology is used ethically and responsibly.

# Deepfakes

Relevance: Prelims & Mains ; S&T



## Meaning

- Deepfakes are **digital media** - video, audio, and images edited and **manipulated using Artificial Intelligence**. This **synthetic media content** is referred to as deepfakes.
- It is basically **hyper-realistic digital falsification**.

## Applications

- Artificial Intelligence (AI)-Generated Synthetic media or deepfakes have clear benefits in certain areas, such as **accessibility, education, film production, criminal forensics, and artistic expression**.
- However, as access to synthetic media technology increases, so does the **risk of exploitation**.
- Deepfakes can be used to **damage reputation, fabricate evidence, defraud the public, and undermine trust in democratic institutions**.
- All this can be achieved with **fewer resources**, with **scale and speed**, and **even micro-targeted to galvanise support**.

## Misuse

- According to one estimate, 96% of deepfakes are pornographic videos. **Deepfake pornography** exclusively targets women.
- Deepfake can **depict a person as indulging in antisocial behaviors** and saying vile things that they never did.
- Deepfake could act as a powerful tool by a malicious nation-state to **undermine public safety** and create uncertainty and chaos in the target country.
- Deepfakes can **undermine trust in institutions and diplomacy**.
- Deepfakes can be **used by non-state actors, such as insurgent groups and terrorist organisations**, to show their adversaries as making inflammatory speeches or engaging in provocative actions to stir anti-state sentiments among people.

# New coronavirus variant - XBB.1.5

Relevance: Prelims; Science & Technology



## Why in news?

- India's **first case of the XBB.1.5 subvariant of Omicron** was confirmed in Gujarat by the national genome sequencing consortium on December 31.
- XBB.1.5 has been **driving COVID-19 cases in the U.S.**
- Studies of the strain indicate that it is **highly transmissible and evades pre-existing immunity**. Yet it **doesn't seem to cause severe disease**.

## How did the variant begin?

- XBB.1.5 is a **recombinant**, which means its **genome is the product of the genomes of two different strains spliced (interweaving) together**.
- This can happen **when two strains infect a person at the same time**; a recombinant variant is produced as they replicate together.
- Recombinant strains also arise when existing recombinant strains **mutate**.
- Previous recombinants include **XD (Delta + Omicron)**, XE (BA.1 + BA.2), and XBB (BA.2.10.1 + BA.2.75). The **XBB strain is descended from BA.2.10.1.1 and BA.2.75.3.1.1.1**.
- It **mutated further and became XBB.1.5**. XBB.1, which also descended from XBB, accounted for 14% of new cases in India around mid-December 2022.

# How bad is the problem of antibiotic resistance?



**Relevance: Prelims & Mains Paper III; S&T**

<b>Why in news?</b>	<b>Seriousness of Issue</b>	<b>Antibiotic resistance</b>
<ul style="list-style-type: none"><li>- Since antibiotics were introduced to the world in the mid-20th century, deaths attributable to infections dropped from over 50% to 10-15%.</li><li>- Experts have been warning for decades that the <b>threat of antibiotic resistance could take us back in time to when even simple infections were deadly.</b></li></ul>	<ul style="list-style-type: none"><li>- A study in 2019 found more than 1 million people a year died from infections linked to microbes that are resistant to antibiotics — more than those who died due to malaria or with HIV/AIDS.</li><li>- Experts describe antibiotic resistance as one of the greatest challenges facing humanity. They predict that if the problem remains unsolved, 10 million people could die as a result by 2050.</li></ul>	<ul style="list-style-type: none"><li>- <b>Antibiotic resistance occurs when bacteria evolve to evade antibiotics.</b></li><li>- <b>Overuse and misuse of antibiotics</b> are the biggest drivers of resistance.</li><li>- That means that the more we use antibiotics, the worse the problem of antibiotic resistance becomes.</li></ul>

## Process of Resistance

- Antibiotics work by binding to a specific target protein on a bacteria, then entering to kill it from the inside. Penicillin, for example, weakens the bacterial cell wall, causing the cell to disintegrate.
- The most common ways bacteria evade antibiotics come from mutations that allow them to stop drugs from binding to bacteria.
- It's like the bacteria changed the locks so the antibiotic key no longer opens the cell door.
- But worst of all is when bacteria evolve many of these mechanisms in backup, so even if you overcome one, other resistances might fill the gap.

## Solving the Problem

- The Antibiotic resistance will always keep on developing.
- It's the nature of evolution by natural selection that means bacteria will always find ways to evade antibiotics.
- But experts are optimistic we can find ways to limit antibiotic resistance in the next decades, at least enough to stop the issue from spiraling into a bigger crisis.
- Unfortunately, it isn't as simple as developing a drug that will permanently overcome antibiotic resistance.
- It's incredibly complex science, even more so than finding a vaccine for a virus such as COVID-19.
- For one, there's huge diversity among bacteria — not all drugs work on a given organism, and not all organisms are killed by a given drug.



## Options

- Scientists have been working on the issue from many different angles.
- **Option 1: Modify existing antibiotics**
- One approach is to modify old antibiotics so they overcome resistance. However, there is a limitation to which the existing antibiotics can be modified.
- **Option 2: Develop new antibiotics**
- Another strategy is to make brand-new drugs.
- But central to the issue is that antibiotic resistance develops quickly whereas antimicrobials — the basis of antibiotic drugs — are developed slowly.

## Global fight against antibiotic resistance lacking

- As with the race for COVID-19 vaccines, overcoming antibiotic resistance will require tremendous international effort dedicated to the problem. But that's exactly what's missing.
- In the short term, some experts want more regulation of antibiotics so their use is limited to situations when they are strictly necessary.
- The hope is this will buy us some time to slow down antibiotic resistance while drug discovery catches up.
- Antibiotics are not well regulated in many parts of the world. For example, antibiotics were “flying off the shelves” during the COVID-19 pandemic in India, where people can buy them over the counter in pharmacies.
- **Limiting the use of antibiotics in agriculture would also have a major impact**, experts say.
- **The EU and US have banned the use of antibiotics for livestock growth**, and in 2022, the EU brought in legislation to prohibit all forms of routine antibiotic use in farming.



# Immune imprinting might be making bivalent boosters less effective



## Relevance: Prelims; Science & Technology

### Why in news?

- Since last September, countries like the UK and the US have rolled out variant-specific or **bivalent boosters**, in the hope that they would provide better protection against infection in comparison to the original vaccine.
- The **bivalent COVID-19 vaccines include a component of the original virus strain to provide broad protection against COVID-19 and a component of the omicron variant to provide better protection against COVID-19 caused by the omicron variant.**
- However, a slew of recent studies has shown that a phenomenon in our bodies, called **immune imprinting**, might be **making these new boosters far less effective than expected.**

### What is immune imprinting?

- Immune imprinting is a **tendency of the body to repeat its immune response based on the first variant it encountered** — through infection or vaccination — when it comes across a newer or slightly different variant of the same pathogen.
- The phenomenon was first observed in 1947 during the treatment of flu. Over the years, scientists have realised that imprinting acts as a database for the immune system, helping it put up a better response to repeat infections.
- After our body is exposed to a virus for the first time, it produces memory B cells that circulate in the bloodstream and quickly produce antibodies whenever the same strain of the virus infects again.

## Issue with bivalent boosters

- The problem occurs when a similar, not identical, variant of the virus is encountered by the body. In such cases, the immune system, rather than generating new B cells, activates memory B cells, which in turn produce “antibodies that bind to features found in both the old and new strains, known as **cross-reactive antibodies**”.
- Although these cross-reactive antibodies do offer some protection against the new strain, they aren't as effective as the ones produced by the B cells when the body first came across the original virus.

## Findings of the recent studies

- As per two latest researches done in the U.S., bivalent boosters made to counter both the Omicron strains and the original coronavirus strain don't generate significantly greater antibody responses than an additional dose of the original mRNA vaccines.
- Scientists of both studies concluded that this might be due to immune imprinting.

# India draws up plan to eradicate measles, rubella



## Relevance: Prelims; Science & Technology

Why in news?	Why is this target crucial?	Efforts
<ul style="list-style-type: none"><li>- India has set up a crucial target to eliminate measles and rubella (MR) by 2023.</li><li>- It has already missed the two earlier deadlines in 2015 and 2020.</li></ul>	<ul style="list-style-type: none"><li>- The measles virus is one of the world's most contagious human viruses that kills over 1,00,000 children every year across the world.</li><li>- Meanwhile, rubella is a leading cause of birth defects. While measles has a high fatality rate, rubella infection in a pregnant woman has an impact on the foetus, resulting in birth defects.</li><li>- Both these diseases whose symptoms are rashes and fever, can be prevented by just two vaccine doses. For instance, over the past two decades, the measles vaccine has prevented over 30 million global deaths.</li></ul>	<ul style="list-style-type: none"><li>- In 2014, Mission Indradhanush was launched to speed up the vaccination of the unvaccinated population. Measles vaccination is covered under Mission Indradhanush.</li><li>- India also adopted a rubella-containing vaccine (RCV) into its routine immunization programme during 2017–2021.</li><li>- As per experts India can eliminate measles and rubella by achieving a 95% immunization rate.</li></ul>

# INS Vagir commissioned into the Indian Navy



Relevance: Prelims; Science & Technology

## Why in news?

- The Indian Navy has commissioned the **fifth diesel-electric Kalvari-class submarine Vagir**.
- It is **among the six submarines being built by the Mazagon Dock Shipbuilders Limited (MDL), Mumbai**, in collaboration with the French M/s Naval Group under **Project 75**.
- **Four of these submarines have already been commissioned** into the Navy and a sixth will be commissioned next year.

## Name derivation

- **Vagir's name comes from a submarine of the same name which served the Navy between 1973 and 2001.**
- The new Vagir which is **also known as Sand Shark** can undertake missions such as **anti-surface warfare, anti-submarine warfare, intelligence gathering and surveillance missions**.

## About background

- Vagir is a **Kalvari-class submarine**. They are **primarily attack submarines or 'hunter-killer' types** which means they are designed to target and sink adversary naval vessels.
- Kalvari-class submarines are around 220 feet long and have a height of 40 feet. They can reach the **highest speeds of 11 knots (20 km/h) when surfaced and 20 knots (37 km/h) when submerged**.
- The Kalvari-class also includes other vessels, such as the **INS Kalvari, INS Khanderi, INS Karanj, INS Vela and INS Vagsheer**. **Vagsheer is expected to be inducted next year.**

## Indian Naval Terminology

- In the Indian Navy and Coast Guard, the ships belonging to a particular class are named in a specific manner.
- The **class is generally named after the first vessel in the category**. In some cases, a particular class of vessels take their names from an earlier class of vessels which are now decommissioned.

## Submarines' Class with India

- India currently operates **one submarine in the nuclear-powered class of Chakra** and **two other nuclear-powered vessels in Arihant** in addition to submarines belonging to **three classes of Diesel Electric category** — Kalvari, Shishumar and Sindhughosh, some of which are ageing.
- Presently, **India has a less-than-ideal number of submarines**, with many new ones being under-construction.

# India launches its own mobile operating system BharOS



Relevance: Prelims; S&T

## Why in news?

- An **indigenous mobile operating system named BharOS** has been launched in India.
- **Developed by an IIT Madras-incubated startup**, BharOS is being pitched as India's answer to the Google-owned Android and Apple's iOS.

## Details

- BharOS, which is not very distinct from Android and iOS, appears to be less of an alternative and more of a **fork version of Android**.
- Introducing a completely new operating system and forking Android are two different things.

## What is forking?

- In forking, a **developer can copy the source code** of a programme, app, or even operating system and create a new project without violating copyright laws.
- Google's Android has been an open-source project ever since it debuted in 2008. Anyone can use its source code, and create their own fork or alternate version.
- **Amazon's Fire OS** is also essentially a **fork version** of Android.
- A forked version loses access to the Google Play Store, the primary way most Android users download millions of apps on their devices and Google services. Fire OS, for instance, has Amazon's own App Store.
- A forked version will likely have more bugs and will be more susceptible to hacking since it won't have Google Play Protect, the software that prevents malware from infiltrating Android devices.

# SOCIAL ISSUES

# Can an underage Muslim girl marry after attaining puberty?



Relevance: Prelims & Mains Paper I; Social Issues

## Why in news?

- The Supreme Court agreed to examine a decision of the Punjab and Haryana High Court holding that a Muslim girl can marry a person of her choice after attaining puberty.
- Before Punjab & Haryana High Court, Several High Courts have ruled differently on this issue.

## Punjab and Haryana HC ruling

- In October last year, the **Punjab and Haryana High Court ruled that a Muslim girl is free to marry a person of her choice after attaining puberty.**
- A 26-year-old Muslim man who had married a 16-and-a-half-year-old girl had moved the High Court seeking custody of his spouse.
- The Punjab police had taken custody of the girl since she was a minor.
- Under these circumstances, the HC allowed the marriage of the girl as per her free will, especially since under Muslim law, a girl can be married after attaining puberty.



## Muslim law on age of marriage

- The HC ruling quoted the Principles of Mohammedan Law by Sir Dinshah Fardunji Mulla, on the capacity for marriage. It states:
- **Capacity for marriage:**
  1. Every Mahomedan of **sound mind**, who has **attained puberty**, may **enter into a contract of marriage**.
  2. **Lunatics and minors who have not attained puberty** may be **validly contracted in marriage by their respective guardians**.
  3. A **marriage of a Mahomedan who is of sound mind and has attained puberty**, is **void**, if it is brought about without his **consent**.
- **Explanation.** **Puberty** is presumed, in the **absence of evidence**, on completion of the age of **fifteen years**.

## What is the challenge?

- The **National Commission for Protection of Child Rights** had **moved the Supreme Court** against the HC ruling.
- The Solicitor appearing for the child rights' body argued that the High Court's ruling essentially allowed a child marriage, and this was in **violation of the Prohibition of Child Marriage Act, 2006**.
- The plea argued that the **Child Marriage Act is a secular legislation and would apply to all religions**, overriding their personal law.

## Law on child marriage

- Under the Prohibition of Child Marriage Act, 2006, **any marriage below the prescribed age of 18 years for women and 21 for men is illegal**, and the **perpetrators of a forced child marriage can be punished**.
- However, **child marriages are illegal but not void**. It is **voidable at the option of the minor party**. This means, the marriage can be declared void by a court only if the minor party petitions the court.
- The NCPDR also argued that since the **Protection of Children from Sexual Offences Act, 2012 does not recognise consent for sexual activity by minors**, marriages on attaining puberty cannot be allowed.

## Proposed law by Centre

- In 2021, the **Centre introduced a Bill to increase the age of marriage for women**, and **ensure harmony in the age limit across religions**.
- The bill seeks to amend the Prohibition of Child Marriage Act, 2006.
- The Bill was subsequently referred to a Parliamentary Standing Committee.
- However, it is also **argued that the Bill is unconstitutional and is violative of Article 25** of the Constitution, which guarantees the freedom of conscience and free profession, practice and propagation of religion.

# Cancer in India: A status report



**Relevance: Prelims & Mains Paper I; Social Issues**

## Why in news?

- Deaths due to cancer have declined by 33% in the United States since 1991.
- The success has been attributed to early detection, lower rates of smoking, and improvements in cancer treatment.
- This trend is yet to be reflected in India. Even with improvements in treatment, both the incidence of cancer and mortality continue to rise in the country.
- Doctors confirmed that the rates of cervical and smoking-related cancers have gone down in India as well; however, the incidence of lung and breast cancers has increased.


## Cancer Data of India

- An estimated 14.6 lakh new cancer cases were detected in 2022, up from 14.2 lakh in 2021 and 13.9 lakh in 2020, as per data from the National Cancer Registry of the Indian Council of Medical Research (ICMR).
- Deaths due to cancer increased to an estimated 8.08 lakh in 2022 from 7.9 lakh in 2021 and 7.7 lakh in 2020.
- The incidence of all cancers is estimated to increase to 15.7 lakh by 2025, according to the data.

## Gender wise Data

- One in nine Indians will develop cancer during their lifetime, according to an ICMR study using data from population-based cancer registries.
- One in 68 men will develop lung cancer and one in 29 women will develop breast cancer, according to the study.
- The incidence of cancer is higher among women — 103.6 per 100,000 in 2020 compared to 94.1 among men.
- Among men, the most common cancers were of the lung, mouth, prostate, tongue, and stomach; for women, they were breast, cervix, ovary, uterus, lung.

### RISING BURDEN OF CANCER IN INDIA

	Incidence	Mortality
2020	13.92 lakh 	7,70,230
2021	14.26 lakh 	7,89,202
2022	14.61 lakh 	8,08,558
2025*	15.69 lakh 	

Source: National Cancer Registry data presented in Parliament, ICMR National Centre for Disease Informatics and Research study; \*Estimated



### ESTIMATED INCIDENCE

IN 2020 (PER 100,000)



Male Female

### COMMON SITES

-  ● Lung, mouth, prostate, tongue, and stomach (36% of all cancers)
-  ● Breast, cervix, ovary, uterus, lung (53% of all cancers)

# Annual Status of Education Report 2022

Relevance: Prelims & Mains Paper I; Social Issues



## What is ASER?

- ASER stands for **Annual Status of Education Report**.
- This is an **annual survey** that aims to provide reliable annual **estimates of children's schooling status** and **basic learning levels for each state and rural districts in India**.
- ASER has been **conducted every year since 2005** in **almost all rural districts** of India.
- ASER is the **largest citizen-led survey** in India.
- It is also the **only annual source of information on children's learning outcomes available in India today**.

## Who is surveyed?

- Unlike most other large-scale learning assessments, ASER is a **household-based rather than school-based survey**.
- This design **enables all children to be included** – those who have never been to school or have dropped out, as well as those who are in government schools, private schools, religious schools or anywhere else.
- In **each rural district, 30 villages are sampled**. In each village, **20 randomly selected households** are surveyed. This process generates a total of 600 households per district, or about 300,000 households for the country as a whole.
- Approximately 600,000 children in the age group 3-16 who are resident in these households are surveyed.

## Who conducts the survey?

- ASER tools and procedures are designed by ASER Centre, the research and assessment arm of Pratham.
- The survey itself is coordinated by ASER Centre and facilitated by the Pratham network.
- It is conducted by close to 30,000 volunteers from partner organizations in each district.
- All kinds of institutions partner with ASER: colleges, universities, NGOs, youth groups, women's organizations, self help groups and others.

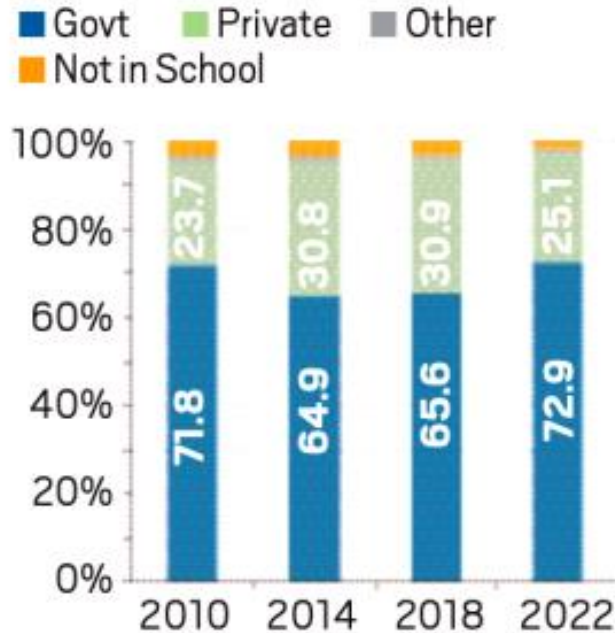
## About Pratham

- Pratham is one of the largest non-governmental organisations in India.
- It works towards the provision of quality education to the underprivileged children in India.
- It was established in Mumbai in 1994 to provide pre-school education to children in slums.
- Presently, it has presence across 23 states and union territories of India.

## ASER 2022 Report Findings

- Since 2005, ASERs survey children in the age group of 6 to 14 to record trends in school enrollment, attendance, and reading and arithmetic abilities.
- This year, nearly 7 lakh children across 616 districts were surveyed. The findings of the survey are:
- **Increase in school enrollment:** Enrollment has gone up **even in a period when schools were shut during pandemic.**
- The voice of 7 lakh children and their families is that it is good to be back in school.
- The Enrollment has **particularly increased in government schools.**
- **Increase in private tuition :** The reason private tuition went up is probably that it is more flexible. Parents felt that schools are closed, we are not sure when they will open, but we need to get some extra help.

### ALMOST ALL RURAL CHILDREN OF AGES 6-14 ENROLLED IN SCHOOL



### PROPORTION OF KIDS TAKING PAID TUITION HAS INCREASED SINCE 2018

*Except in Gujarat, Karnataka, TN, Kerala, Tripura*

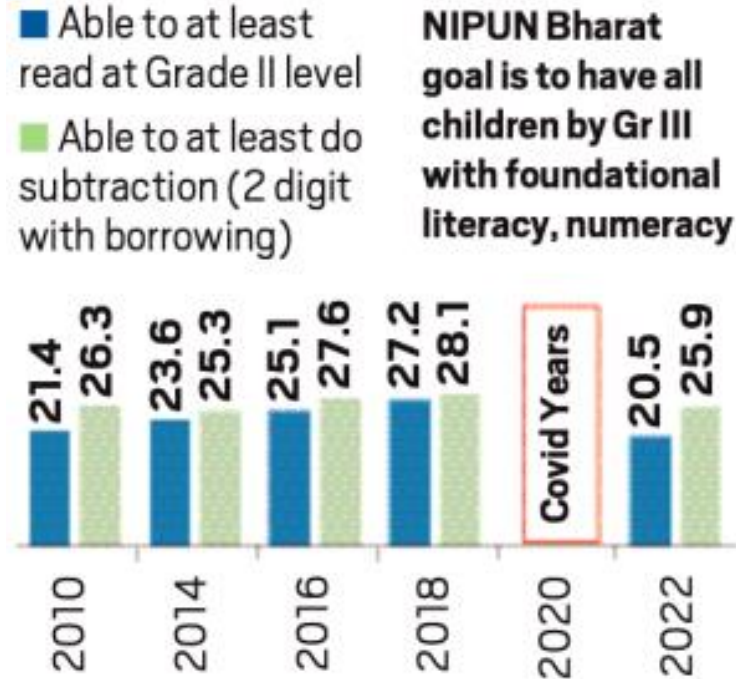
#### CHANGE > 5 PERCENTAGE POINTS

State	2018	2022	Change
Bihar	62.2%	71.7%	9.6%
Nagaland	25.4%	34.9%	9.4%
Jharkhand	36.9%	45.3%	8.4%
Manipur	45.1%	53.4%	8.3%
UP	15.9%	23.7%	7.9%
Assam	18.8%	25.3%	6.5%
All India	26.4%	30.5%	4.2%

## ASER 2022 Report Findings (Contd.)

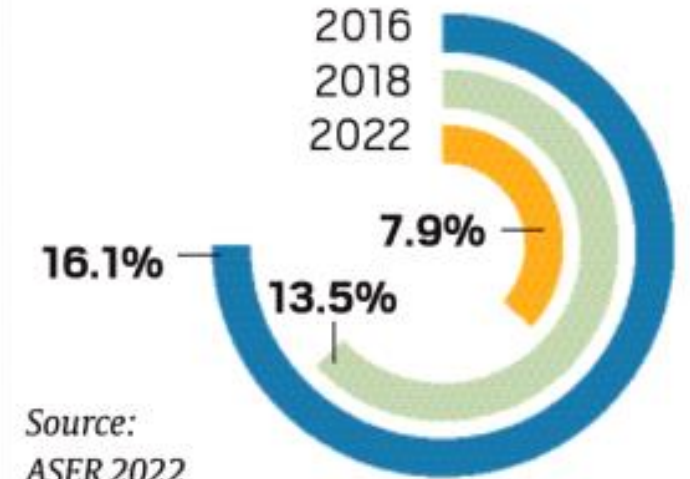
- **Trend on foundational skills** : We have schemes like **National Initiative for Proficiency in Reading with Understanding and Numeracy (NIPUN) Bharat**.
- NIPUN Bharat's **goals are that every child by Class three is at grade level**, which means they can read or can do basic arithmetic.
- The number of such children **before Covid** was around **30 per cent**, and **now** is somewhere for **reading around 20 per cent** and for **math around 25-26 per cent**.

### IN PANDEMIC YEARS, BASIC READING WAS HIT HARDER THAN MATHS



### PROPORTION OF GIRLS AGED 15-16 WHO ARE NOT IN SCHOOL HAS DROPPED SINCE 2018

Halved in most states that had more than 20% girls out of school in 2006



Source:  
ASER 2022



# Women get command roles in the Indian Army



Relevance: Prelims & Mains Paper I; Social Issues

## Why in news?

- A total of 244 women officers are being considered for promotion against the vacancies — from the **batch of 1992 to 2006** — in arms and services including Engineers, Signals, Army Air Defence, Intelligence Corps, Army Service Corps, Army Ordnance Corps and Electrical and Mechanical Engineers.
- Many of them have been cleared for the **rank of Colonel from Lieutenant Colonel** by the Special Selection Board.
- This will **make them eligible to command units and troops in their respective arms and services for the first time.**

## Position so far

- It is not that women officers did not reach the rank of Colonel or beyond in the past, but they were **only in two branches** — the Judge Advocate General (JAG) branch and the Army Education Corps — where they were **granted permanent commission in 2008.**
- However, **these were staff appointments** — which are more administrative in nature — and **not purely command appointments in which an officer commands troops on ground.**

## Permanent Commission

- In **2019, the Army changed its rules allowing SSC women officers to opt for permanent commission** who would have **otherwise retired after 14 years of service.**
- However, this was **not retrospective**, and applied only to the batches of women officers starting their career in the Army in 2020.

## SC order in 2020

- With the landmark Supreme Court judgment of February 2020, permanent commission was granted to women officers with **retrospective effect**.
- The Supreme Court's order to grant permanent commission to women Army officers in February 2020 **opened the doors for promotion to women officers across all streams of the Army, except pure combat arms**.

## Commanding a unit

- **Once promoted to a Colonel, an officer is eligible to command troops directly in the Army**, which is an acknowledgment of the leadership qualities of the officer.
- It is considered a coveted appointment because in no other rank — including higher ranks like Brigadier or Major General — does an officer interact directly with troops on the ground.

## Position in Navy

- Women officers have been inducted into all branches of the Navy, and they will be **eligible for permanent commission in the future**.
- Women officers can **command shore-based units** and, **as they join the service and become eligible for permanent commission, they would be able to command ships and air squadrons**.

## Position in Air Force

- The IAF has **opened all branches for women officers, including the fighter stream and the new weapon systems branch.**
- As they are granted **permanent commission** based on eligibility and vacancies, they **will be eligible to command units in the future.**

## Women Strength

- The Army, being the largest of the three services, has the largest number of women officers at 1,705, followed by 1,640 women officers in the IAF, and 559 in the Navy.

## Other armies which allow women to command units

- All major countries including the United States, United Kingdom, Russia, and Israel, allow women in command positions of their national armed forces.

# INTERNAL SECURITY

# Vibrant Village Programme - Development of border villages

Relevance: Prelims & Mains Paper III; Internal Security



Why in news?	Vibrant Village Programme	Criticism
<ul style="list-style-type: none"><li>- The Government of India is paying special attention to the development of border villages, especially from a security perspective.</li><li>- Borders could be permanently secured only when border villages are populated by patriotic citizens who are concerned for the country.</li></ul>	<ul style="list-style-type: none"><li>- The scheme is for funding development of “border villages with sparse population, limited connectivity and infrastructure (that) often get left out from the development gains.</li><li>- The government has said VVP would cover construction of village infrastructure, housing, tourist centres, road connectivity, provisioning of decentralised renewable energy, direct-to-home access for Doordarshan and educational channels, and support for livelihood generation.</li><li>- It was announced by the Centre in Budget 2022.</li></ul>	<ul style="list-style-type: none"><li>- The existing Border Area Development Plan of the MHA covers development of all border regions, and it is unclear how VVP will be different from that.</li><li>- One year after it was announced, there is little clarity on the details of VVP.</li></ul>

# MISCELLANEOUS

# Yo-Yo test and Dexa scan

Relevance: Prelims

## Why in news?

- The BCCI has recently announced the (re)introduction of the Yo-Yo Test and the introduction of Dexa scans for the purposes of selection to the team.

## What is the Yo-Yo test?

- The Yo-Yo test was first introduced to the Indian cricket team during Virat Kohli's fitness-focused captaincy reign.
- It is a “maximal aerobic endurance fitness test, involving running between markers placed 20 metres apart, at increasing speeds, until exhaustion.”
- The most commonly used version involves running between two markers 20 metres apart, following audio cues which dictate the running speed required.
- At regular intervals, the required running speed increases. The test continues until the participants are no longer able to keep up with the required pace.
- Players are given scores on the basis of how many levels they are able to clear. Previously, the minimum score set by the BCCI to pass the test was 17 (increased from 16.1).



## What are DEXA scans?

- A **DEXA (dual x-ray absorptiometry)** scan is an **imaging test that measures bone density (strength)**.
- DEXA scan results can **provide helpful details about risk for osteoporosis (bone loss) and fractures (bone breaks)**.
- This test can **also measure body composition, such as body fat and muscle mass**.
- The DEXA scan will be used to provide a more **accurate picture of the players' fitness and physical condition**, allowing the team to customise plans for players.
- It will also allow **better insight into players' recoveries**, ensuring that players are not rushed back too early.



# Mahadayi water sharing row between Goa and Karnataka

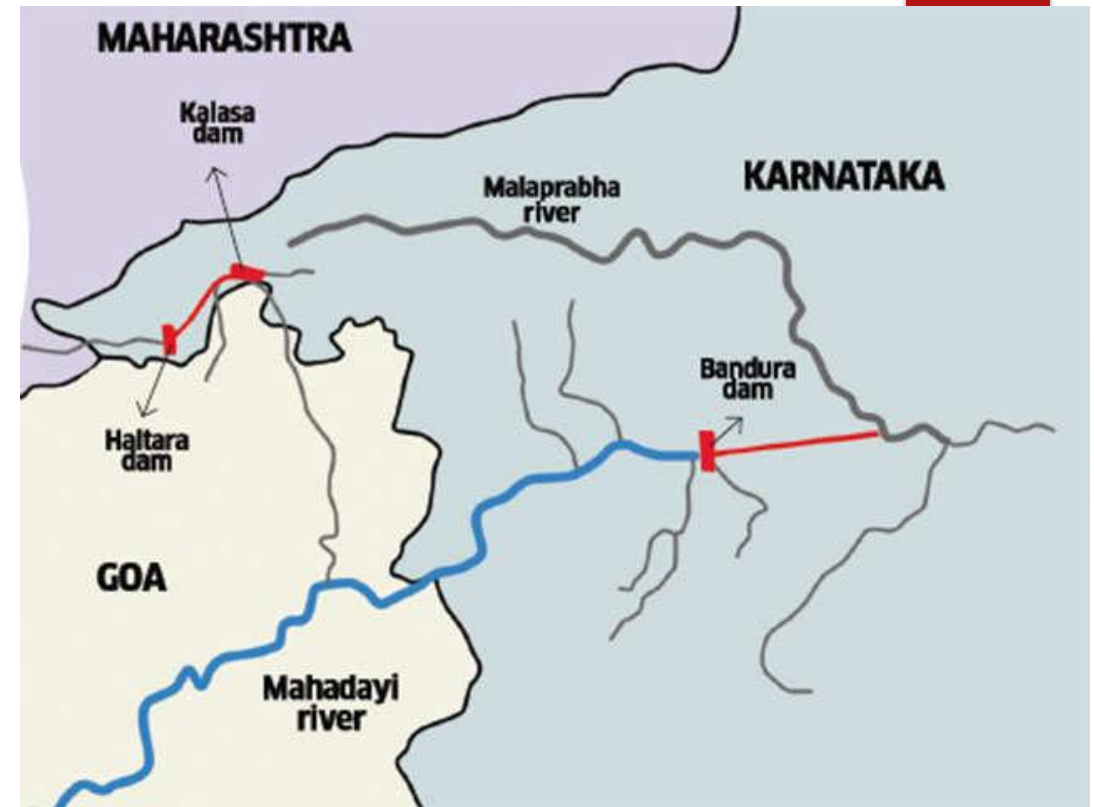
## Relevance: Prelims

### Why in news?

- Karnataka's decision to go ahead with a water diversion project on river Mahadayi has escalated its long-standing dispute on the issue with neighbouring Goa.
- The Karnataka government plans to build Kalasa-Banduri Nala on the Mahadayi.

### Kalasa-Banduri Nala project

- The Kalasa Banduri Nala project aims to divert water from Mahadayi to satisfy the drinking water needs of districts in North Karnataka.
- Though the project was first proposed in the early 1980s, it has remained on paper owing to a dispute between Karnataka, Goa and Maharashtra.
- A Tribunal was finally set up by the UPA government in November 2010 to decide the dispute.



## Tribunal award

- The Tribunal in 2018 awarded 13.42 TMC water from Mahadayi river basin to Karnataka, 1.33 TMC to Maharashtra and 24 TMC to Goa. In Karnataka's share, 5.5 TMC was to meet drinking water needs and 8.02 TMC was for hydro-electricity generation.
- Of the 5.5 TMC, 3.8 TMC was to be diverted to Malaprabha basin through Kalasa and Banduri Nalas (canals). This was notified by the Central government in February 2020.
- After the Tribunal award, Goa challenged the quantum of allocation in the Supreme Court.

## Karnataka Govt.

- The project has been a long-standing demand of Karnataka residents set to benefit from it.
- With Assembly elections due this year, the state government, despite the petitions pending in the SC, has decided to go ahead with the project.

# Jain community protests over two holy sites

Relevance: Prelims



## Why in news?

- Members of the Jain community in Gujarat recently staged protests in various cities over their demands related to **two holy sites** — **Shetrunjay hill in Palitana of Gujarat** and **Sammed Shikhar on Parasnath hill in Jharkhand**.

## Shetrunjay hill issue

- An accused vandalized a marble carving representing the feet of **Lord Adinath, the first of the 24 Tirthankars of Jainism**
- The Jains are demanding that their holy site and the area around it should be protected.

## Sammed Shikhar issue

- In the Jharkhand case, the Jains are seeking the roll-back of a state government decision to develop Sammed Shikhar, located on the Parasnath hill in the Giridih district, as an eco tourist spot.
- **Sammed Shikhar** is considered to be **among the most important Jain pilgrimage sites, where 20 of the 24 Jain Tirthankars are believed to have attained moksh or salvation.**

# Sunni Dam Hydro Electric Project in Himachal Pradesh



## Relevance: Prelims

### Why in news?

- The Cabinet Committee on Economic Affairs has approved the investment for **382 MW Sunni Dam Hydro Electric Project in Himachal Pradesh**.
- It will be in form of **Run of River project**.
- It will be executed on **Satluj river in Shimla and Mandi districts of Himachal Pradesh**.

### Run of River Project

- Run-of-river hydroelectricity (ROR) or run-of-the-river hydroelectricity is a type of hydroelectric generation plant whereby **little or no water storage is provided**.
- Run-of-the-river power plants may have no water storage at all or a limited amount of storage.
- The storage reservoir is referred to as pondage.
- A plant without pondage is subject to seasonal river flows, thus the plant will operate as an intermittent energy source.

# Indian Science Congress

## Relevance: Prelims



### Why in news?

- Indian Science Congress is holding its **108th edition** in Nagpur.
- It is being held from January 3 to 7 in 2023.

### About Indian Science Congress

- The Science Congress is an **annual five-day event**.
- It is the **largest gathering of scientists, science researchers, teachers and professors** in the country.
- It is also a **platform for their interaction with the students and the general public** on matters related to science.
- It is **customary for Prime Minister to inaugurate the event**.
- The **first edition** of Indian Science Congress was held in **1914**.
- The event is **organized by the Indian Science Congress Association (ISCA)**, an independent body functioning with the support of the Department of Science and Technology (DST) in the central government.

# 50 ASI-protected monuments disappear

## Relevance: Prelims



### Monuments & Sites

- The **Ancient Monuments and Archaeological Sites and Remains Act (AMASR Act)** regulates the **preservation of monuments and archaeological sites of national importance**.
- The Act protects monuments and sites that are **more than 100 years old**.

### Archaeological Survey of India

- The **Archaeological Survey of India (ASI)**, which is under the aegis of the **Union Ministry of Culture**, functions under **AMASR Act**.
- ASI is **responsible for various conservation and preservation operations**.
- ASI officials are supposed to regularly **inspect** the monuments to assess their condition.
- ASI officials can also **file police complaints**, issue **show cause notices** for the **removal of encroachments**, and **communicate to the local administration** the need for demolition of encroachments.

## Reason for missing monuments

- The ASI was **founded in 1861 by Alexander Cunningham.**
- In the decades after independence, the focus of successive governments was on health, education and infrastructure, rather than protecting heritage.
- Even within the scope of heritage, the aim was to uncover more monuments and sites, instead of conservation.
- So in due course, many monuments and sites were **lost to activities like urbanisation, construction of dams and reservoirs, and even encroachments.**
- Fifty of India's 3,693 centrally protected monuments including sites have gone missing, the Ministry of Culture has told Parliament.

# New Covid Symptoms - Myalgia

## Relevance: Prelims



### Initial Symptoms

- Loss of smell and taste, high fever and breathlessness were regarded as the 'classic' symptoms when COVID was first discovered.
- But with Omicron emerging and vaccination coverage increasing, the symptoms related to the infection changed.
- The symptoms that were widely reported include sore throat, runny nose, headache and fatigue.

### Myalgia

- Now, it seems, COVID-related symptoms have changed again, with many now reporting sharp pain in shoulders and legs, widely known as myalgia.
- Myalgia, also known as muscle aches, is said to arise from the effects of inflammatory molecules released by immune cells in response to the virus.
- COVID-related muscle pain often impacts the shoulders or legs, leaving people in distress.
- Myalgia that occurs due to COVID is said to linger on for an average of two to three days but can also take longer to go away.

### LT effects

- Experts are of the opinion that even though the symptoms related to the infection are comparatively milder now, its long-term effects are still a concern.
- Also, COVID can affect all your organs including your heart and nervous system, causing severe diseases.



# World's longest river cruise – Ganga Vilas

Relevance: Prelims

## Why in news?

- Prime Minister Narendra Modi is all set to flag off the world's longest river cruise — 'Ganga Vilas' — from Varanasi to Dibrugarh via Bangladesh on January 13.
- Ganga Vilas — with a capacity of 80 passengers — is a luxury river cruise vessel with 18 suites and all other associated facilities.



## Length and Duration

- Covering a journey of **3200 km in 50 days** and passing through **27 river systems in India and Bangladesh**, the cruise ship will give tourists a chance to visit over **50 architecturally important places, including world heritage sites.**

## Special Experience

- This cruise will also pass **through national parks and sanctuaries**, including the **Sundarbans Delta and the Kaziranga National Park.**
- To make the experience on the cruise enjoyable, there will be facilities like music, cultural programs, a gym, a spa, an open-air observation deck, personalised butler service, etc.



# 'Naatu Naatu' song won Golden Globe Award

Relevance: Prelims



## Why in news?

- **Naatu Naatu**, the spellbinding dance number from SS Rajamouli's epic **RRR**, won the Best Original Song in the **80th Golden Globe Awards**.
- The song, **composed by MM Keeravani**, features the film's two protagonists, Jr NTR and Ram Charan.
- Notably, the two actors use their suspenders as a prop while dancing – playing around with the accessory in creative ways.
- **Suspenders** were a crucial part of menswear back in the day, before waist-belts caught up.
- Also known as braces or galluses, they kept pants up and were hidden under the coats or jackets worn by men at the time.

## Golden Globe Awards

- Golden Globe Awards are presented **annually** by the **Hollywood Foreign Press Association (HFPA)** in recognition of **outstanding achievement in motion pictures and television during the previous year**.
- The awards **started in January 1944**, recognizing excellence in both American and international motion pictures and television industry.
- The annual ceremony at which the awards are presented is **normally held every January**.
- Within the entertainment industry, the Golden Globes are considered **second in importance both to the Academy Awards (for film) and to the Emmy Awards (for television)**.



# VSHORAD missile system

## Relevance: Prelims



### Why in news?

- The **Defence Acquisition Council (DAC)** accorded **priority** to procure the **Very Short Range Air Defence System or VSHORAD** (IR Homing) missile system at a total cost of Rs4,276 crore.
- The development comes amid the ongoing military standoff with China at the LAC in eastern Ladakh and reports of air violations by China along the LAC last year.

### What is the missile system?

- Meant to **kill low altitude aerial threats at short ranges**, VSHORADS is a **man portable Air Defence System (MANPAD)**.
- It has been **designed and developed indigenously by DRDO's Research Centre Imarat (RCI), Hyderabad**, in collaboration with other DRDO laboratories and Indian Industry Partners.



# Hockey World Cup – Odisha & Blue turf



## Relevance: Prelims

### Odisha to Host

- **Odisha** is set to host the FIH (Federation of International Hockey) **Hockey World Cup** from January 13 to January 29.
- The 15th edition of the tournament will be held in **Bhubaneswar's Kalinga Stadium and Rourkela's brand-new Birsa Munda International Hockey Stadium.**

### Blue Turf

- The 16-team tournament will be played on the distinctive **blue turf.**
- First introduced in the **2012 London Olympics**, the blue turf has since become the standard playing surface at the highest levels of hockey.
- In 2012, the blue turf was introduced alongside a **fluorescent yellow ball** for the London Olympics.
- The purpose of this move was to **stir up fan interest** by providing field hockey with one of the most unique playing surfaces in sports.
- There is also a more functional reason behind the move. Hockey is an extremely fast game played with a relatively small ball (approximately the same size as a cricket ball).
- The blue surface provides outstanding contrast against the yellow ball. This not only helps players spot and control the ball better, but is also a **boon for broadcasters.**

## Artificial pitches and the decline of Indian hockey



- The Indian hockey team was arguably the most dominant team in all of sports for a long time.
- From 1928 to 1964, the team won seven Olympic gold medals and one silver medal.
- However, since then, the returns have been waning. One reason popularly cited for the decline of Indian hockey is the introduction of artificial turf.
- As astroturf replaced grass as the playing surface of choice for top-level hockey, the Indian team's traditional strengths, dexterous stickwork and close control, were mitigated.
- Instead, astroturf allowed for a faster-paced game that valued strength, stamina and speed over other things.
- Furthermore, for a long time, India did not have the infrastructure and equipment to develop players for the modern game.

# Centre to end discretionary Haj quota – How Haj Quota Works?



## Relevance: Prelims

### Why in news?

- Union Minister for Minority Affairs Smriti Irani said that the Centre has **done away with the discretionary Haj quota for pilgrims**.
- The minister added that a new, exhaustive Haj policy has been formulated and will be announced soon. Notably, the previous Haj policy was set for the duration between 2018 and 2022, and has now expired.

### The Haj pilgrimage: a massive logistical operation

- The Haj is an **annual Islamic pilgrimage to Mecca, Saudi Arabia**, the holiest city for Muslims.
- It is considered to be a **mandatory religious duty for all adult Muslims physically and financially capable of doing so**.
- The rites of pilgrimage are **performed over five to six days**, in **Dhu al-Hijjah**, the **last month of the Islamic calendar**.
- However, for the Kingdom of Saudi Arabia, it poses a massive logistical challenge. Housing, feeding and facilitating safe pilgrimages for millions of pilgrims who descend upon Mecca from across the world during a brief period of time is difficult, to say the least.
- Thus, Saudi Arabia **allots country-wise quotas** which determine the total number of pilgrims who can make a journey from a particular country.

## India's distribution of Haj slots

- On January 9, the Indian consulate in Jeddah, Saudi Arabia tweeted that India signed the **Haj 2023 bilateral agreement** with Saudi Arabia.
- According to the agreement, a total of **1,75,025 Indian Haj pilgrims** will be able to perform Haj, reportedly the highest in history.
- The quota allotted to India (by Saudi Arabia) is then further **distributed by the Ministry of Minority Affairs and the Haj Committee of India (HCoI)** to various stakeholders.
- Out of the total number of slots with the HCoI, **500** are held under the "**Government discretionary quota**" whereas the **rest are distributed to different states** on the basis of their Muslim population.
- A draw of lots is conducted in each state to determine who makes the journey in case the number of applicants exceed the number of slots available.

## Hajj discretionary quotas

- The "Government discretionary quota" is further divided in two, 200 seats are with the Haj Committee itself and 300 are with people holding important offices at the Centre.
- This **quota has now been abolished** with these seats being added back to the general pool.





## Ongoing debate about the 'VIP quota'



- This is not the first time this issue has come up. In 2011, the Supreme Court called the VIP quota for Haj pilgrims a “bad religious practice”.
- In 2012, the apex court reduced the Government quota from over 5000 to 500, split into 300 for the Government and 200 for the HCol.
- In the same judgement, the apex court had also directed the government to phase out the Haj subsidy within a period of 10 years, saying the sum can instead be used for the social and educational development of the Muslim community.

# Europe's largest rare earth elements deposit found in Sweden



## Relevance: Prelims

### Why in news?

- **Sweden** has discovered more than one million tonnes of rare earth oxides in the **northern area** of the country. This is the **largest known deposit in Europe**.
- Currently, **no rare earths are mined in Europe** and it mostly imports them from other regions. **98 per cent of rare earths used by the European Union were sent by China**.
- The discovery can also prove to be a significant turning point not just for the EU but also for other western countries as they have been trying to reduce their reliance on China for the import of these rare earth elements and other key industrial supplies.

### What are rare earths?

- Rare earth elements or rare earth metals are a **set of 17 chemical elements in the periodic table** — the **15 lanthanides, plus scandium and yttrium**, which tend to occur in the same ore deposits as the lanthanides, and have similar chemical properties.
- The 17 rare earths are cerium (Ce), dysprosium (Dy), erbium (Er), europium (Eu), gadolinium (Gd), holmium (Ho), lanthanum (La), lutetium (Lu), neodymium (Nd), praseodymium (Pr), promethium (Pm), samarium (Sm), scandium (Sc), terbium (Tb), thulium (Tm), ytterbium (Yb), and yttrium (Y).



## What are rare earths used for?

- These elements are important in technologies of consumer electronics, computers and networks, communications, clean energy, advanced transportation, healthcare, environmental mitigation, and national defence, among others.
- Scandium is used in televisions and fluorescent lamps, and yttrium is used in drugs to treat rheumatoid arthritis and cancer.
- Rare earth elements are used in space shuttle components, jet engine turbines, and drones. Cerium, the most abundant rare earth element, is essential to NASA's Space Shuttle Programme.
- Elements like neodymium and dysprosium, which are used in wind turbine motors, are sought-after more than ever as wind mills across the world continue to grow.
- Moreover, the push for switching from internal combustion cars to electric vehicles has also led to a rise in demand for rare earth magnets — made from neodymium, boron, and iron — and batteries.

# Hockey terminology

## Relevance: Prelims



### Why in news?

- Hockey World Cup is going on in state-of-art stadiums in Bhubaneswar and Rourkela.
- Some of the commonly used terms related to sport of Hockey are follows:

### Gameplay

- Field hockey is a team sport played between two teams of **11 players each**.
- Each team has one **goalkeeper**, who is **permitted to use his hands and feet to prevent goals**, defenders, midfielders and attackers, who are only allowed to use their sticks to control the ball.
- The aim of the game is to score in the opposing team's goal. To score a goal, the scorer has to enter the opposition D – the D-shaped box 16 yards in front of the goal. A **shot from outside the D is not counted**.
- The playing area is a rectangle, marked with white lines on the **blue astroturf** on which the game is played.

## Offences

- During the game, players can commit various offences which are then penalised.
- Some common fouls entail the **ball touching your feet, tackling from behind, third party interference** (two players are not allowed to tackle an attacking player at the same time), **obstruction** (when a player or a stick comes in between the ball and the other player) and **dangerous play**.
- Dangerous play can be called when the **stick is raised above one's waist** or when the **umpire deems that a player endangers the opponent in any way while attacking or defending the ball**.
- **Hitting the ball in the air is also not allowed**, though this is often a subjective call made by referees.

## Penalties

- Fouls are **penalised** in different ways.
  - **Free hits** are awarded to the team against which a foul has been committed. Players are allowed to pass or carry the ball (**upto three yards**) during a free hit.
  - **Penalty Corners** are awarded to the attacking team for an offence or foul committed by the defensive team in their own D.

The ball will be placed on the baseline, and then passed to the teammates at the top of the attacking D for a shot on goal.
  - **Penalty strokes** are awarded for intentional fouls on an attacker who has possession of or opportunity to play the ball in the circle or for fouls in the penalty circle that prevent a "certain goal."

# Plane crash in Pokhara

Relevance: Prelims



## Why in news?

- At least 68 people died on January 15, after a **Yeti Airlines passenger plane crashed in Nepal's Pokhara.**
- According to Reuters, the plane was carrying 72 people, including five Indians.
- This is Nepal's worst crash since March 2018, when a US-Bangla flight from Dhaka crashed on landing in Kathmandu.

## History

- Nepal has a long and **unfortunate history of plane crashes.**
- More than 20 plane crashes have taken place in the last decade.
- In 2013, the **European Union banned all Nepal-based airlines from flying in its airspace**, citing safety concerns. This blacklisting continues in present day.

## Reason behind accidents

- The **rugged mountainous terrain, dearth of investment in new planes and infrastructure and poor regulation** have contributed to these crashes.
- Further, the **airstrips are located in mountainous areas**, amid **weather conditions** that are known for their **sudden turns.**
- The **terrain** is particularly challenging here as it is located in a **narrow oval-shaped valley** and **surrounded by tall, jagged mountains**, which means that **planes have less room to manoeuvre in.**
- The **steeper and narrower landing strips** higher in the Himalayas are also difficult to navigate. **Smaller planes** containing turboprop engines **can arrive here** and not the larger jetliners. However, these smaller planes are **more affected by strong weather conditions in Nepal.**

# UPI Lite and UPI123PAY

Relevance: Prelims



## About UPI

- UPI is a 24\*7 instant payment system that allows you to transfer money in real time between two bank accounts. It is developed by National Payments Corporation of India (NPCI).
- At present, the upper limit per UPI transaction is Rs 2 lakh. Moreover, UPI apps also allow you to request a payment from another user.

## UPI Lite

- The Reserve Bank of India (RBI) launched UPI Lite in September, 2022. It is an 'on-device wallet' feature that will allow users to make real-time small-value payments without using a UPI PIN.
- **Working:** First, you have to add funds to or load money into the wallet on the app, from your bank account. Then, you can use those pre-loaded funds to pay from the wallet via UPI Lite.
- **Use:** UPI Lite feature has been enabled on the BHIM app. At present, customers of eight banks can use UPI Lite via the BHIM app.
- **Transaction limit:** Do note that UPI Lite has been designed for low-value transactions. So, the upper limit for UPI Lite transactions is Rs 200. Users don't need a UPI PIN for payments below Rs 200 via UPI Lite.
- The total limit of UPI Lite balance for an on-device wallet will be Rs 2,000 at any point in time.



## UPI Lite (Contd.)

- **Need of internet:** In phase one, UPI Lite will process transactions in near **offline mode**, i.e., debit (payments) can be made without an Internet connection, and credits into the account will be done online, NPCI said earlier.
- **Credit to bank account:** At present, only debit from your wallet is permitted and all credits to UPI Lite including refunds will **directly go to your bank account**.

## UPI123Pay

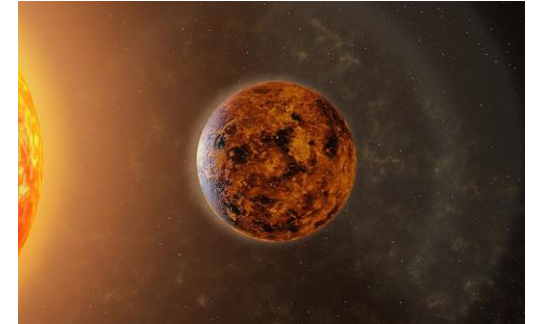
- To decrease cash-based transactions in India, the RBI introduced UPI. For a sizable percentage of the **population who lacked smartphones**, UPI was unavailable.
- The RBI introduced UPI123Pay to solve this issue. Customers will be able to use their **feature phones** for almost all transactions using UPI123Pay, with the exception of scan and pay.
- **How it UPI123Pay works?**
- Step 1: **Link his bank account with UPI123Pay.**
- Step 2: **Create a UPI pin using their debit/credit card.**
- Step 3: **Call the Interactive Voice Response (IVR) number**, and **choose the service**, such as money transfer, LPG bill, or electricity bill.
- Step 4: The **user must first choose the service before adding the recipient's phone number in order to send money. The sum and PIN will then be confirmed.**
- Step 5: The user has **two options to pay a merchant**. The first is to **use the app**, and the second is to **pay via a missed phone call**.



# ISRO likely to push Venus mission 'Shukrayaan I' to 2031



## Relevance: Prelims



About Shukrayaan I	Expected Launch	Launch Window
<ul style="list-style-type: none"><li>- Shukrayaan I will be an <b>orbiter mission</b>.</li><li>- Its scientific payloads currently include a high-resolution synthetic aperture radar and a ground-penetrating radar.</li><li>- The mission is expected to study Venus's geological and volcanic activity, emissions on the ground, wind speed, cloud cover, and other planetary characteristics from an elliptical orbit.</li></ul>	<ul style="list-style-type: none"><li>- ISRO's Venus mission, Shukrayaan I, was expected to be launched in December 2024.</li><li>- However, Indian Space Research Organisation (ISRO) has said that the organisation was yet to receive approval from the Union government for the Venus mission and that the mission could as a result be <b>postponed to 2031</b>.</li></ul>	<ul style="list-style-type: none"><li>- Optimal launch windows from earth to Venus <b>occur once around every 19 months</b>.</li><li>- This is why ISRO has <b>"back-up" launch dates in 2026 and 2028</b>, should it miss the 2024 opportunity.</li><li>- But <b>even more optimal windows</b>, which further reduce the amount of fuel required at lift-off, <b>come around every eight years (Next in 2031)</b>.</li><li>- Launch Missions of other nations: The <b>U.S.</b> and the <b>European space agencies</b> also have <b>Venus missions planned for 2031</b> — referring to <b>VERITAS and EnVision, respectively</b>.</li></ul>

# What the rules say on unruly passengers



## Relevance: Prelims

### Why in News?

- Air India has **banned Shankar Mishra from flying for four months.**
- Mishra is currently under arrest for urinating on a fellow co-passenger while inebriated onboard an Air India flight between New York and Delhi.

### Who is an unruly/disruptive passenger?

- According to Air India's official security regulations, a disruptive passenger is one "who fails to respect the rules of conduct at an airport or on board an aircraft or to follow the instructions of the airport staff or crew members and thereby disturbs the good order and discipline at an airport or on board the aircraft."
- **Rule 23 of Aircraft Rules 1937** states that "**No person shall, on board an aircraft (shall) assault, intimidate or threaten, whether physically or verbally, any person... consume alcoholic beverages or drugs ... which is likely to endanger the safety of the aircraft or of any person or jeopardises the good order and discipline on board the aircraft.**"
- Shankar Mishra's conduct falls under this definition: regardless of intention, his act of urinating on a co-passenger can be said to be "disrupting good order" on board the aircraft.

## Responsibility of Crew

- Each airline is supposed to maintain a **SOP (Standard Operating Procedure)** through which it will address any untoward behaviour, according to a 2017 notice regarding “handling of unruly/disruptive passengers”.
- Crew members, including pilots, receive training about how to deal with such situations.
- Importantly, the crew must try and diffuse the situation to the best of their abilities while in air, while informing the passenger concerned about their indiscretions.
- A major flashpoint in the Shankar Mishra case was the crew’s reported inaction during the flight.
- However, once the aircraft lands, a more thorough process gets underway.

## Internal Committee

- According to the previously mentioned notice, an airline is supposed to constitute an **Internal Committee** upon receiving any complaint.
- This committee consists of,
  - Retired District & Sessions Judge as Chairman
  - A representative from a different scheduled Airline as Member
  - Representative from a passengers’ association or consumer association or retired officer of Consumer Dispute Redressal Forum as Member
- This committee shall **decide the Level of Offence** made by the passenger.
- Based on the level of offence, the Internal Committee can **ban persons from flying for various periods of time, even upto complete life.**
- Crucially, such punishments are in addition to any action that may be taken against him under the appropriate law.
- Prior to the committee’s decision, an airline can ban a passenger for no more than 30 days.

# US hits the debt ceiling

Relevance: Prelims



## What is the debt ceiling?

- The United States hit its **debt ceiling of \$31.4 trillion** on January 19.
- The debt ceiling, which was **introduced in 1917** during World War I, is the maximum amount that the US federal government can borrow to fulfill its financial obligations.
- As the government spends more than it earns through taxes and other revenues, it needs to borrow money in order to pay for expenses, such as social security and Medicare benefits, and the salaries of US military service members.
- In 2021, this borrowing limit was raised to \$31.4 trillion.

## Decision on Debt Ceiling

- The Debt ceiling has been **decided by the Congress** (Legislature of the USA).
- This debt ceiling can also be enhanced by the Congress.
- Basically, the debt ceiling has been kept to ensure fiscal prudence on part of government.
- The US government has never breached the debt ceiling.

# 'Shadow banning' of social media posts



## Relevance: Prelims

### Why in news?

- Chances are that your social media posts may not be getting any engagement. This could be the direct consequence of you being “shadow banned”!

### Shadow banning

- The term ‘shadow banning’ **refers to the belief that social media companies are taking concealed actions to limit a post’s visibility.**
- This term traces to 2012 when Reddit users accused the platform’s administrators of banning a link to a Gawker article while publicly championing transparency.
- The meaning of the term has evolved over time. Now, users often use it to describe general discontent about not getting the attention they believe they deserve on social media, even if they don’t necessarily think a platform has engaged in any covert moderation.

### Legality

- Private companies are **allowed to make their own rules** about content moderation.
- However, for advertisers, users and free speech champions, true shadow bans are problematic because they enforce unarticulated rules secretly.

## What is special about them?

- A typical moidam at Charaideo contains chambers in which the dead king would be buried along with items he needed for the “afterlife” as well as servants, horses, livestock and even their wives.
- Since these burial rites are quite like the ones of the ancient Egyptians, Charaideo moidams have been nicknamed “**Pyramids of Assam.**”

## About Ahoms

- The Ahoms were one of India’s longest-reigning ruling dynasties.
- At their peak, their **kingdom stretched from modern-day Bangladesh to deep inside Burma.** Known to be able administrators and valiant warriors, the Ahom dynasty continues to have cultural appeal in Assam.
- They represented a time when the “Assamese race was united and able to fight outside invaders.
- Notably, last November, the **Union govt. celebrated Ahom general and folk hero Lachit Borphukan’s 400th birth anniversary at a large scale.**

# Emergency powers used to block the BBC documentary on PM Modi



## Relevance: Prelims

### Why in news?

- The Ministry of Information and Broadcasting has ordered the blocking of the first episode of the BBC Documentary 'India: The Modi Question' on YouTube.
- Twitter too was asked to block over 50 tweets containing links to the video on YouTube. Both platforms have complied with the directions.
- The govt. issued these directions using emergency powers under the IT Rules, 2021.
- As per the I&B Ministry, this documentary is a "propaganda piece" that lacks objectivity and reflects a colonial mindset.
- It attempts to defame the Supreme Court of India, undermines India's sovereignty and integrity of India and can adversely impact India's friendly relations with other countries.

### Emergency powers

- Rule 16 of the IT Rules, 2021 — formally known as the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021 describes the government's power with regard to "Blocking of information in case of emergency".
- As per this rule, "In case of emergency nature, the Secretary, Ministry of Information and Broadcasting may pass orders for blocking for public access of any information or part thereof through any computer resource."
- Such orders may be passed on certain specified grounds including national security and public order.

# Charaideo Moidams - India's latest nominee to UNESCO's World Heritage Sites

## Relevance: Prelims

### Why in news?

- The Central government has forwarded a proposal to UNESCO for nominating Charaideo moidams of the Ahom kingdom as a World Heritage Site.
- If selected, it will be the only cultural heritage site in the North East to get this coveted status.

### What are Charaideo moidams?

- A moidam is a tumulus – a mound of earth raised over a grave – of Ahom royalty and aristocracy. Charaideo whose name translates to “a shining town situated on a hilltop” was Ahom's first capital city.
- It was established in 1253 AD by the Ahom king Sukaphaa. Throughout Ahom rule, it remained a power centre.
- Thus, the Charaideo moidams (approximately 90 in number) are royal burial sites of the Ahom dynasty which ruled over much of Assam and the North East from 1228 to 1826 AD.
- Located near Sivasagar town in eastern Assam, Charaideo moidams are considered sacred by many locals. They are major tourist attractions in the present day.





# Modi names 21 Andaman Islands after Param Vir Chakra recipients



## Relevance: Prelims

### Why in news?

- Prime Minister Narendra Modi has **named the 21 largest unnamed islands of Andaman & Nicobar Islands after India's 21 Param Vir Chakra awardees**. This announcement was made on the occasion of Parakram Diwas, Netaji Subhas Chandra Bose's birth anniversary.
- Notably, **in 2018, the govt. had renamed Ross Island as Netaji Subhash Chandra Bose Dweep, Neil Island as Shaheed Dweep and Havelock Island as Swaraj Dweep** in the same region.

### About all the Param Vir Chakra recipients

- **Major Somnath Sharma:** Leading the solitary company of 4th Battalion, Kumaon Regiment, he tried to defend the Srinagar airport against Pakistani raiders in the Battle of Badgam in 1947. Losing his life in this objective, Sharma became the first-ever recipient of the PVC.
- **Subedar and Hon. Captain (then Lance Naik) Karam Singh:** He hampered the Pakistani army's efforts to occupy the Tithwal sector in J&K during the first Indo-Pakistani war in 1948. Despite being injured, not only he fought valiantly but also freed two Indian jawans from captivity.
- **Second Lieutenant Rama Raghoba Rane:** He played a key role in helping Indian forces occupy Rajouri, Jammu and Kashmir in 1948 during the war with Pakistan.

- • **Naik Jadunath Singh:** He fought bravely but lost his life in J&K's Naushera sector in 1948, during the battle with the Pakistani army.
- • **Company Havildar Major Piru Singh:** Part of a company tasked to capture a Pakistani post at Tithwal in Jammu and Kashmir, Singh died while carrying out the operation in the 1948 conflict. He managed to destroy the enemy position before breathing his last.
- • **Captain GS Salaria:** He successfully defended the UN Headquarters at Elizabethville (now known as Lubumbashi) in the Democratic Republic of Congo in 1961. He and his men fought courageously and managed to kill around 40 of the enemy troops.
- • **Lieutenant Colonel (then Major) Dhan Singh Thapa:** Commander of a forward post in Ladakh during the 1962 Sino-Indian war, Thapa and his men resisted two efforts by the Chinese forces to overrun the Indian posts. Thapa eventually lost his life doing so.

- • **Subedar Joginder Singh:** He died while defending his post in Bumla, Arunachal Pradesh, against the Chinese military in the 1962 war.
- • **Major Shaitan Singh:** During the 1962 war with China, he put up a brave fight at Rezang La in J&K. Even being seriously injured, he fought till the end.
- • **Company Quartermaster Havildar Abdul Hamid:** He famously destroyed eight Pakistani tanks during the Indo-Pak war of 1965.
- • **Lieutenant Colonel Ardeshir Burzorji Tarapore:** Leading his regiment in the Sialkot Sector during the 1965 war with Pakistan, he inspired troops in destroying 60 enemy tanks.
- • **Lance Naik Albert Ekka:** He died while playing a key part in the advancement of the Indian troops during battle of Gangasagar in the 1971 war with Pakistan.

- • **Major Hoshiar Singh:** He led his troops in capturing the enemy locality of Jarpal during the 1971 war. It proved crucial in India's victory.
- • **Second Lt Arun Khetarpal:** He along with his troops destroyed ten Pakistani tanks in Punjab's Shakargarh sector during the 1971 war. Khetarpal died during this battle.
- • **Flying Officer Nirmal Jit Singh Sekhon:** He played a decisive role in guarding Srinagar Air Base against a Pakistan air raid during the 1971 war. Till date, he remains the **only PVC awardee from the Indian Air Force.**
- • **Major Ramaswamy Parameswaran:** He died during India's peacekeeping operations in Sri Lanka in 1987. His bravery helped eliminate five militants and retrieve a big cache of weapons and ammunition.
- • **Naib Subedar Bana Singh:** In 1987, he and his team killed Pakistani intruders in the Siachen Glacier to reclaim a key army post.

- • **Captain Vikram Batra:** Led his men from the front during the 1999 Kargil War, Batra succeeded in capturing Point 4875 in Ladakh. Though he died during this operation, catchphrase "Yeh Dil Maange More" has become an enduring symbol of the courage of the Indian Army.
- • **Lt Manoj Kumar Pandey:** During the Kargil War, he killed four enemy troops and destroyed two bunkers. He laid down his life during this conflict.
- • **Subedar Major (then Rifleman) Sanjay Kumar:** His bravery helped Indian Army in capturing the previously occupied Flat Top point in J&K.
- • **Subedar Major and Hon. Captain Yogendra Singh Yadav (retired):** He played a major role in capturing bunkers on the top of the Tiger Hill during the Kargil War.

# Norovirus cases detected in Kerala



## Relevance: Prelims

### Why in news?

- The Kerala Health Department has confirmed **two cases of the gastrointestinal infection norovirus** in class 1 students in Ernakulam district.
- The two samples were tested after 62 persons — students and their parents — developed symptoms such as diarrhoea, abdominal pain, vomiting, nausea, a high temperature, headache, and body aches.

### About Norovirus

- Norovirus is **not new**; it has been **circulating among humans for over 50 years** and is thought to be **one of the primary causes of gastroenteritis** (inflammation of the stomach and intestines, typically resulting from bacterial toxins or viral infection and causing vomiting and diarrhoea).
- The virus is **estimated to kill 200,000 persons globally every year**, with most deaths occurring among **those below the age of five years and those over the age of 65 years**.
- The virus is **capable of surviving low temperatures**, and outbreaks tend to be **more common during the winter and in colder countries** — that is why it is sometimes referred to as “**winter vomiting disease**”.

### Symptoms

- Norovirus leads to **diarrhoea, vomiting, nausea, and abdominal pain**.
- Being a diarrhoeal disease, it **can lead to dehydration**, so drinking plenty of fluids is recommended.

## Spread and Prevention

- The infection can be **transmitted through foods contaminated with the virus, touching surfaces that are contaminated with the virus and then touching the mouth**, and being in **direct contact with someone with the infection** like taking care of them and sharing foods and utensils with them.
- Doctors recommend **washing hands** with soap and water for 20 seconds. Hand sanitisers are thought to not work too well against norovirus that can survive temperatures as high as 60 degrees Celsius.

## Primarily found in the West

- A 2022 study says that norovirus infections are **more frequently detected in high-income countries**.
- Though **not as common in India**, this infection has been reported in previous years as well, mainly from Southern India, especially from Kerala.
- As per experts, it is **unlikely that India will face a large-scale norovirus outbreak**. The cases so far have been sporadic and found in small clusters in schools or hostels where people consume the same foods. It is an individual problem, not a public health one.

# Republic Day tableaux

Relevance: Prelims



## Why in news?

- 17 states and union territories displayed their tableaux in 2023 Republic Day parade.
- Besides them, six of the ministries and departments did so.

## About selection process

- The Defence Ministry is responsible for the Republic Day parade and the celebrations.
- Every year, around September, it initiates this process by asking all the states, the UTs, the Central govt. depts, and a few constitutional authorities to send their tableau proposals.
- Then a committee of “distinguished persons” from fields like art, culture, painting, sculpture, music, architecture, choreography, etc, help in shortlisting the tableaux from the proposals.
- In making the final selection the committee looks at a combination of factors, looking at the visual appeal, impact on the masses, idea/ theme of the tableaux, degree of detail involved, and accompanying music, among other factors.

## Guidelines

- The participants have to showcase elements relevant to their state/ UT/ department, within the overarching theme.
- The themes given to participants this year were around 75 years of India's Independence, the International Year of Millets and 'Nari Shakti'.
- The tableaux of two different states/ UTs must not be too similar, as the tableaux, together, should showcase the diversity of the country.

## A particular size

- The Defence Ministry provides each participant with one tractor and one trailer, and the tableau should fit on that.
- The tableaux should not be more than 45 feet long, 14 feet wide and 16 feet high from the ground.

# Foreign contingent in Republic Day parade



## Relevance: Prelims

### Why in news?

- This year's Republic Day parade saw various marching contingents from the Indian armed forces and paramilitary regiments. However, there was also one **foreign contingent, from Egypt** whose **president Abdeh Fattah El-Sisi** was this year's chief guest for the parade.
- 144 soldiers of the Egyptian armed forces participated in India's 74th Republic Day parade. It was only the 4th foreign marching contingent in the history of India's Republic Day parades.

### Other Foreign Contingents

- The first-ever foreign marching contingent that participated in India's R-Day parade was from **France in 2016**. That year, **French President Francois Hollande** was the chief guest at the parade.
- In **2017**, the **UAE Presidential Guards** accompanied **Abu Dhabi Crown Prince Mohammed bin Zayed Al Nahyan**, the chief guest of the Republic Day parade.
- In **2021**, a marching **contingent from Bangladesh** participated in the parade. Marking the **50th anniversary of Bangladesh's Liberation War**, they accompanied a band which played the song of "Shono Ekti Mujibur-er theke lokkho Mujibur" (From one Mujibur there rose lakhs of Mujibur – referring to Bangladesh's founding father, Mujibur Rahman).
- Notably, **2021 did not have a chief guest due to Covid-19 pandemic-related restrictions**.



# VEER GUARDIAN

Relevance: Prelims



## Why in news?

- The **inaugural edition** of the **bilateral air exercise** 'Veer Guardian 2023' between the **Indian Air Force (IAF) and Japan Air Self Defence Force (JASDF)** took place in **Japan** and concluded on 26 January 2023.

## Veer Guardian

- Exercise 'Veer Guardian 2023' provided the two Air Forces with an opportunity to enhance mutual understanding.
- The exercise also witnessed numerous ground interactions between IAF and JASDF personnel wherein various aspects were discussed by both sides.
- This enabled the participating contingents to obtain an invaluable insight into each other's best practices and learn from each other's unique capabilities.

# Rashtrapati Bhavan's Mughal Gardens renamed 'Amrit Udyan'



## Relevance: Prelims

### Why in news?

- The iconic Mughal Gardens at the Rashtrapati Bhavan (President's House) in Delhi have been renamed.
- They will now be called 'Amrit Udyan' and will open to the public on January 31.

### Making of Mughal Gardens

- In 1911, the British decided to shift the Indian capital from Calcutta to Delhi. A whole new city – New Delhi was built as the British Crown's seat of power in India.
- About 4,000 acres of land was acquired to construct the Viceroy's House with Sir Edwin Lutyens being given the task of designing the Rashtrapati Bhawan on Raisina Hill.
- It was decided to create a Mughal-style garden within the premises of Rashtrapati Bhawan. Over 250 different varieties of hybrid roses from every corner of the world were gathered for this purpose.
- While roses remain these gardens' star attraction, residents of the Rashtrapati Bhavan have all added their own personal touch to the garden.

### Mughal Gardens

- The Mughals were known to appreciate gardens. Their favourite gardens were known to be of Persian charbagh style (literally, four gardens).



# Fossilised eggs belonging to dinosaurs found in Central India



## Relevance: Prelims

### Why in news?

- Researchers from Delhi University have found 92 nests and 256 fossilised eggs belonging to titanosaurs, the largest dinosaurs to have ever lived, in central India.
- This study has focused on the newly found nesting sites in Dhar, Madhya Pradesh. Together with the previously found dinosaur nests in eastern MP's Jabalpur, and Gujarat's Balasinor, the region constitutes one of the largest dinosaur hatcheries in the world.
- One of the reasons why fossils of titanosaurs, a herbivorous dinosaur, are commonly found in India is because they inhabited the Gondwanaland — a supercontinent that consisted of India, South America, Madagascar, Australia and Antarctica.

### Research Findings

- The detailed examination of the discovered eggs and nests has revealed details about the number of titanosaurs's species and their reproductive systems.
- During their research, the scientists identified six different "oospecies," or egg species, that suggest a "possible high diversity in titanosaur taxa in the Indian subcontinent."
- The team also found a pathologic ovum-in-ovo egg or a multi-shelled egg. It is the first time that such an egg has been found in the nests of titanosaurs. Usually, pathologic eggs are seen in birds only. Therefore, the discovery is a step forward in establishing similarities between the reproductive systems of reptiles and birds.



## India, 'a major hotspot'

- Dinosaur fossils are being found in India for many decades. The **first-time dinosaur bones were found was in 1822** by Capt William H Sleeman of the East India Company army.
- These bones were discovered **near Jabalpur** and belonged to a titanosaur.
- Since then, evidence of several other kinds of dinosaurs has been found in states such as Rajasthan, Gujarat, Andhra Pradesh, Maharashtra, Telangana, Karnataka and Tamil Nadu.

## Different Species Found

- **Around 17 different kinds of dinosaurs were present in the region**, which is now known as India.
- One of the most famous ones among them is **Rajasaurus**. The fossils of this **carnivorous dinosaur from the Cretaceous period** were **first found by Geological Survey of India in the 1980s**.
- Rajasaurus's discovery is also important because it is believed to be **closely related to Majungatholus**, a dinosaur from **Madagascar**.
- The **similarity between the two dinosaurs suggests that there was a terrestrial connection between India and Madagascar around 67 million years ago**.

# Panels for complaints against online platforms



## Relevance: Prelims

Why in news?	Composition	Functioning
<ul style="list-style-type: none"><li>- The Centre has notified the formation of three grievance appellate committees (GACs) that will address users' complaints against social media and other internet-based platforms.</li></ul>	<ul style="list-style-type: none"><li>- Each of the three GACs will have a chairperson, two whole-time members from different government entities, and retired senior executives from the industry for a term of three years from the date of assumption of office.</li><li>- The GACs will adopt an "online dispute resolution mechanism" where the entire appeal process, from its filing to the final decision, will be done online.</li><li>- Social media companies will also have to compile every order passed by the GACs and report them on their respective websites.</li></ul>	<ul style="list-style-type: none"><li>- The grievance appellate committees will hear appeals against the grievances which have not been settled at the level of Grievance officers of social media companies.</li><li>- These committees will also have the power to oversee and revoke content moderation-related decisions taken by these platforms.</li><li>- Any person aggrieved by a decision of the grievance officer of a social media intermediary will be allowed to file an appeal to the GAC within a period of 30 days. The GAC will have to deal with the appeal and resolve it within a month of the receipt of the appeal.</li><li>- The GACs' online platform will be operational from March 1, 2023.</li></ul>

# GEOGRAPHY

# Cold Wave

**Relevance: Prelims; Geography**



## Why in news?

- Delhi and other parts of northwest India have been reeling under a cold wave spell that set in last week.
- In Delhi, the lowest minimum temperature recorded this month was 1.9 degrees Celsius on January 8, the second-lowest minimum temperature in January in 15 years.

## What is a cold wave?

- The Indian Meteorological Department (IMD) marks a cold wave in terms of minimum temperatures – when the **minimum temperature in the plains is 4 degrees or less or when the minimum temperature is less than 10 degrees and 4.5 to 6.4 degrees below the normal.**

## Primary Reason

- One of the major factors contributing to colder than normal temperatures over north India this month is the **large-scale fog cover.**
- Fog has been lasting for longer durations, **preventing sunlight from reaching the surface** and affecting the radiation balance.
- There is no heating in the day time, and then there is the impact of the night.
- **Light winds and high moisture near the land surface** have been contributing to the **formation of a blanket of fog over** large swathes of the Indo-Gangetic plains in the morning.

# James Webb telescope discovers its first Earth-sized exoplanet



## Relevance: Prelims; Geography

### Why in news?

- Located 41 light-years away, the planet orbits very close to a red dwarf star and completes a full orbit in just two days.
- Researchers hope that in the coming years, owing to the Webb telescope's advanced capabilities, they will be able to detect more Earth-sized planets.
- So far, most of the discovered exoplanets are similar to Jupiter as Earth-sized planets are much smaller in size and harder to discover with older telescopes.

### What are exoplanets?

- Exoplanets are planets that orbit other stars and are beyond our solar system.
- According to NASA, to date, more than 5,000 exoplanets have been discovered.
- Scientists believe that there are more planets than stars as each star has at least one planet orbiting it.
- Exoplanets come in a host of different sizes. They can be gas giants bigger than Jupiter or as small and rocky as Earth. They are also known to have different kinds of temperatures — boiling hot to freezing cold.

### Importance

- Studying exoplanets not only broadens our understanding of other solar systems but also helps us piece together information about our own planetary system and origin.
- However, the most compelling reason to learn about them is to find the answer to one of the most thought-provoking questions of humankind — are we alone in this universe?



## Goldilocks Zone

- Important element of the study of an exoplanet is finding out the **distance between an exoplanet and its host star**.
- This helps scientists determine if a discovered world is habitable or not. If an exoplanet is too close to the star, it might be too hot to sustain liquid water. If it's too far, it might only have frozen water.
- When a planet is at a distance that enables it to have liquid water, it is said to be in the **"Goldilocks zone"**.

## Finding Exoplanets

- Discovering exoplanets is quite tough as **they are small and hard to spot around their bright host stars**.
- Scientists rely on **indirect methods**, such as the transit method, which is **"measuring the dimming of a star that happens to have a planet pass in front of it"**.

## Red Dwarf Stars

- As mentioned before, the newly discovered exoplanet orbits around a red dwarf star.
- Such types of stars are the **most common and smallest in the universe**.
- As they **don't radiate much light**, it's very **tough to detect them with the naked eye from Earth**.
- However, **as red dwarfs are dimmer** than other stars, it is **easier to find exoplanets that surround them**. Therefore, red dwarfs are a popular target for planet hunting.

# 'Green comet' approaches Earth after 50,000 years



## Relevance: Prelims; Geography

### Why in news?

- A green comet is coming close to the earth. It is approaching us after nearly 50,000 years.
- Officially termed the C/2022 E3 (ZTF), comet was named to refer to those who first spotted it.
- This comet which will come closest to Earth around February 2. As per NASA, this green comet will be at a distance of 2.5 light minutes from Earth, i.e. 27 million miles.

### Coming from

- This comet's orbit indicates that it has **come from the Oort cloud**.
- It is a big, spherical region of outer space enveloping our solar system, consisting of innumerable small objects, such as comets and asteroids.
- NASA terms it "the most distant region of our solar system" and "Home of the Comets".

### What are Comets?

- Comets are **frozen rocky or gas-filled objects that are remnants of the formation of the solar system**. Due to their composition, characteristics and the path they move in, they tend to leave a light behind them (often called the tail of the comet).
- Comets get a **green glow due to the presence of diatomic carbon** – pairs of carbon atoms that are bound together – in the head of the comet.
- The **molecule emits green light when excited by the ultraviolet rays in solar radiation**. Some comets also give out blue or whiteish light.

# What ails the Ken-Betwa river link project?



## Relevance: Prelims; Geography

### Why in news?

- The Steering Committee of the **Ken-Betwa Link Project (KBLP)** recently held its third meeting.
- As per the central govt. this “flagship” project is critical for the water security and socio-economic development of the Bundelkhand region.
- The **Union Cabinet approved KBLP in 2021** at a **total cost of Rs 44,605 crore**. Under it, the national and the Madhya Pradesh governments will **link the Ken River with the Betwa river so that the latter can water the Bundelkhand region in Uttar Pradesh**.

### Project Details

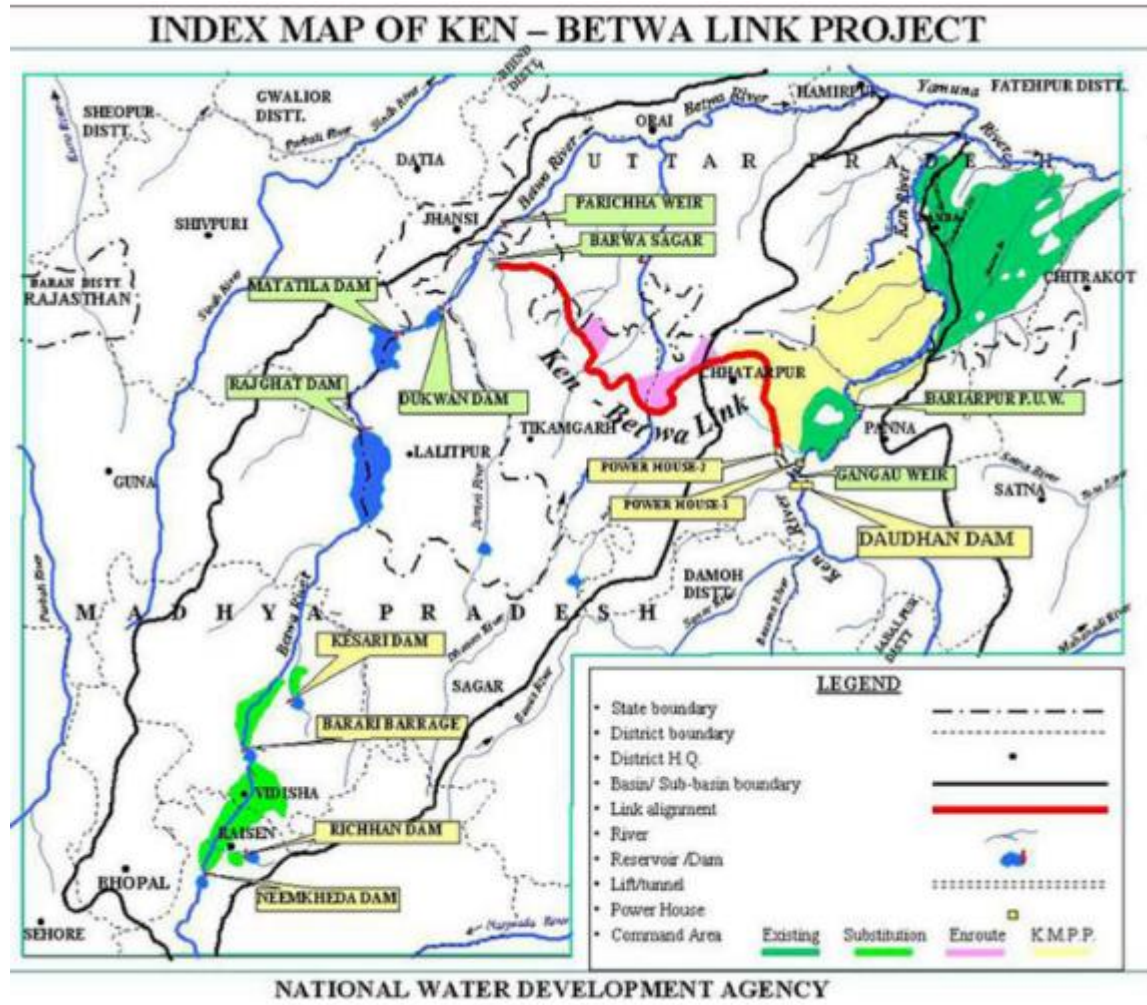
- The Ken-Betwa link will be in the **form of a canal** that will be **fed by the new Daudhan Dam on the Ken**, to be **built within Panna Tiger Reserve**.
- This dam will **generate 103 MW of hydroelectric power**. The linking canal will flow through Chhatarpur, Tikamgarh and Jhansi districts, with the project expected to irrigate 6.3 lakh hectares of land every year.

### Ecologists raise concerns

- Hydrological and ecological experts are also concerned that the project will endanger the **water security of Panna tiger reserve**.
- The destructive impact of the project on the downstream **Ken gharial sanctuary** has also not been considered.
- The Panna tiger reserve lost all its tigers by 2009. It required a decade-long effort to reintroduce them.
- Panna is exceptional tiger habitat because of its deep gorges, which will be drowned if the new dam is built.
- Notably, in 2022, Madhya Pradesh lost more tigers compared to Karnataka, its nearest rival for ‘tiger State’ tag.

# Legal Problems too!

- As per the Central Empowered Committee (CEC) of the Supreme Court, the wildlife approval given by the Standing Committee of the National Board for Wildlife (NBWL) for this project in 2016 was beyond its authority.
- A challenge to its environmental approval is also pending before the National Green Tribunal.
- Notably, KBLP may also intensify water conflicts between Madhya Pradesh and Uttar Pradesh.



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# DISASTER MANAGEMENT

# Joshimath Crisis - Reasons

Relevance: Prelims & Mains Paper I; Geography



## Why in news?

- Almost a week after cracks appeared in many roads and hundreds of houses of **Joshimath in Chamoli district in Uttarakhand**, authorities declared it a **landslide and subsidence-hit zone**.
- The **possibility** of such an incident happening in the region was **first highlighted around 50 years ago**.

## What is land subsidence?

- According to the National Oceanic and Atmospheric Administration (NOAA), **subsidence is the “sinking of the ground because of underground material movement”**.
- It can happen for a host of reasons, man-made or natural, such as the removal of water, oil, or natural resources, along with mining activities. Earthquakes, soil erosion, and soil compaction are also some of the well-known causes of subsidence.
- This phenomenon can happen over very large areas like whole states or provinces, or very small areas.



## Reasons behind Joshimath's subsidence



- The **exact reason** behind Joshimath land subsidence is **still unknown**. However, there are **multiple possible reasons**.
- According to experts, Joshimath city has been **built on an ancient landslide material** — meaning it **rests on a deposit of sand and stone, not rock**, which doesn't have high load-bearing capacity.
- Moreover, the **lack of a proper drainage system** might have also contributed to the sinking of the area. Experts say that unplanned and unauthorised construction has led to the blocking of the natural flow of water, which eventually results in frequent landslides.
- As per the reports, residents have also blamed NTPC's Tapovan Vishnugad **Hydro Power Project** for the incident. They allege that the tunnel had water seepage "from a punctured aquifer, leading to the drying of water sources in Joshimath."
- Apart from the aforementioned possible reasons, subsidence in Joshimath might have been triggered by the **reactivation of a geographic fault** — defined as a **fracture or zone of fractures between two blocks of rock** — where the Indian Plate has pushed under the Eurasian Plate along the Himalayas.

# Events leading to Joshimath Land Subsidence



Relevance: Prelims & Mains Paper III; Disaster Management

## Overlooked Mishra Committee report

- It is now clear that all warnings in the **Mishra Committee report almost 50 years back** went unheeded in the race to develop Joshimath by successive governments since 2001.
- It was clearly pointed out that Joshimath township is situated on debris of earlier landslides and would slip someday.
- All elements of a disaster were primed and only a trigger was needed to initiate the crisis. The triggers were provided by the following events.

## Underground Aquifer Leakage

- In the case of Joshimath, **evidences strongly suggest underground erosion** which **lead to subsidence of land**.
- One such incident which could have caused this underground erosion was **puncturing of an underground aquifer during a tunnel boring close to Auli**, discharging substantial amounts of water in **December 2009**.

## Landslides falling in river

- The second major incident which could have caused underground erosion is the February 2021 event.
- In **February 2021**, a **large amount of rock and glacier ice mass descended into Rishiganga and Dhauliganga valleys and flowed into Alaknanda river at Joshimath**.
- The strong and violent flow eroded the base of hill slopes in Alaknanda valley in Joshimath.



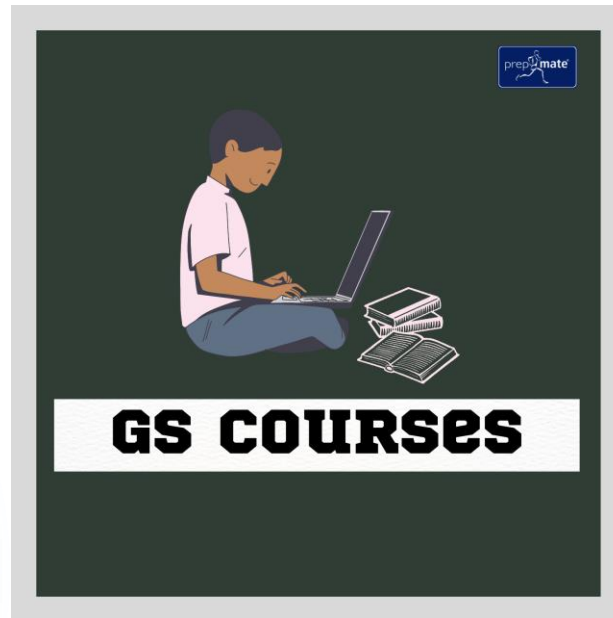
## Land subsidence

- In a recent study, scientists from the Indian Institute of Remote Sensing, Dehradun, observed that Joshimath and the surrounding areas have been **sinking at a rate of 6.5 cm (2.5 inches) per year** based on satellite data from July 2020 to March 2022.
- Land subsidence (sinking of land) along slopes **happens due to displacement of underground material.**

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