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Polity & Governance

1. Cabinet approves PM-Surya Ghar: Muft Bijli Yojana for installing rooftop solar in One Crore households

PM-Surya Ghar: Muft Bijli Yojana
The Union Cabine has approved PM-Surya Ghar: Muft Bijli Yojana with a total outlay of Rs.75,021 crore for installing rooftop solar and providing free electricity up to 300 units every month for One Crore households. The Prime Minister had launched the scheme on 13th February, 2024.

The major highlights of the scheme include:

Central Financial Assistance (CFA) for Residential Rooftop Solar

i. The scheme provides a CFA of 60% of system cost for 2 kW systems and 40% of additional system cost for systems between 2 to 3 kW capacity. The CFA will be capped at 3 kW. At current benchmark prices, this will mean Rs 30,000 subsidy for 1 kW system, Rs 60,000 for 2 kW systems and Rs 78,000 for 3 kW systems or higher.

ii. The households will apply for subsidy through the National Portal and will be able to select a suitable vendor for installing rooftop solar. The National Portal will assist the households in their decision-making process by providing relevant information such as appropriate system sizes, benefits calculator, vendor rating etc.

iii. Households will be able to access collateral-free low-interest loan products of around 7% at present for installation of residential RTS systems up to 3 kW.

Other Features of the Scheme

i. A Model Solar Village will be developed in each district of the country to act as a role model for adoption of rooftop solar in rural areas,

ii. Urban Local Bodies and Panchayati Raj Institutions shall also benefit from incentives for promoting RTS installations in their areas.

iii. The scheme provides a component for payment security for renewable energy service company (RESCO) based models as well as a fund for innovative projects in RTS.

Outcome and Impact
Through this scheme, the households will be able to save electricity bills as well as earn additional income through sale of surplus power to DISCOMs. A 3 kW system will be able to generate more than 300 units a month on an average for a household.

The proposed scheme will result in addition of 30 GW of solar capacity through rooftop solar in the residential sector, generating 1000 Billion Units of electricity and resulting in reduction of 720 million tonnes of CO2 equivalent emissions over the 25-year lifetime of rooftop systems.

It is estimated that the scheme will create around 17 lakh direct jobs in manufacturing, logistics, supply chain, sales, installation, O&M and other services.

Relevance: GS Prelims & Mains Paper II; Governance
Source: PIB

2. Supreme Court overturned its 2018 decision, which set a time limit on courts' stay orders

Why in news?
"Sometimes, in the quest of justice we end up doing injustice. Asian Resurfacing is a clear example of the same," a five-judge Constitution bench of the Supreme Court said on Thursday (February 29), overruling its 2018 decision in Asian Resurfacing v. Central Bureau of Investigation.

Stay in Judicial Proceedings
In 2018, a three-judge bench were deciding a batch of cases involving the Prevention of Corruption Act. These batches of cases had one aspect in common – that the respective High Courts had granted a stay at some stage of trial. Stay orders are passed for a court to temporarily halt a judicial proceeding, to secure the rights of a citizen.

Grant of stay invariably delays the trial, irrespective of which side benefits from it. For example, if an HC in a case had to consider the challenge against an order framing charges (by the trial court), it would first grant a stay of trial and then grant a date for hearing arguments on framing charges.

With Courts bogged down with criminal cases that perhaps need more immediate attention, such as bail cases, the hearing against framing of charges gets delayed. In our three-tier system of courts, a trial court's decision can be challenged at every stage, not just at the final stage after a verdict is delivered. It is not uncommon to find trials pending for decades because a stay is in operation.

What the 2018 bench ruled in the Asian Resurfacing case
In Asian Resurfacing, the SC held that while a "High Court has jurisdiction in appropriate case to consider the challenge against an order framing charge and also to grant stay but how such power is to be exercised and when stay ought to be granted needs to be considered further."

To address the big problem plaguing the criminal justice system, of undue delays in trials, the SC held that interim orders of stay at the High Court and Civil Court level will be only valid for six months. At the end of this period, they will automatically be rescinded or "vacated".

Supreme Court overturns Asian Resurfacing judgment; no automatic vacation of stay orders after six months

What was the impact of the 2018 ruling?

As anticipated, with the 2018 ruling, several trials on stay virtually rose from the dead without notice. Lawyers would cite the Asian Resurfacing ruling to alter the status quo.

For example, say a flimsy or frivolous FIR is filed and a trial court has issued summons. This would be challenged before the HC, but the HC would first stay the summons and grant a date for the hearing. But citing the Asian Resurfacing case meant that a trial court would issue non-bailable warrants suddenly for not appearing before the Court. All this, while the HC had not yet heard arguments for quashing the summons itself.

Key questions before SC

While this added the load on the HCs and burdened the average litigant, it also raises key questions of law. These questions were framed by another bench headed by CJI DY Chandrachud in December last year.

First, whether the SC, under Article 142 of the Constitution (which allows the Supreme Court to pass any order to secure "complete justice") can order automatic vacation of all interim

orders of the HC of staying proceedings of Civil and Criminal cases on the expiry of a certain period?

Second, whether the SC, under Article 142 of the Constitution, can direct the HCs to decide pending cases in which interim orders of stay of proceedings have been granted on a day-to-day basis and within a fixed period?

On what grounds has the 2018 ruling been undone?
The five-judge bench held that constitutional courts should refrain from laying down precise timelines for deciding cases, highlighting the discretion that should be afforded to lower courts which are more aware of "grassroots issues". The SC also pointed out that courts often have different patterns when it comes to their pending caseload, and so the concerned court is best placed to decide which cases to prioritise.

The court also held that the bench in Asian Resurfacing did not have the power to set a six-month time limit for vacating stay orders. The bench in Asian Resurfacing had invoked Article 142.

Relevance: GS Prelims & Mains Paper II; Governance
Source: Indian Express

3. Why have two northeast States opposed the scrapping of the Free Movement Regime with Myanmar?

Why in News?
The Mizoram Assembly on February 28 and the Nagaland Assembly on March 1 adopted a resolution to oppose the Centre's decision to fence the 1,643 km long porous India-Myanmar border and scrap the Free Movement Regime (FMR) agreement that allows cross-border movement up to 16 km without travel documents.

What led to the resolutions?
At an official event in Guwahati on January 20, Home Minister Amit Shah said the Centre has decided to fence the India-Myanmar border and scrap the FMR implemented in 2018 as part of India's Act East policy for cultural, business, and terrestrial connectivity to Southeast Asia and beyond.

The Centre decided to suspend the FMR ostensibly to thwart illegal migration of people, the smuggling of drugs, arms and ammunition, and the cross-border movement of extremists. The decision was influenced by the Manipur government's push — after the ethnic violence between the Meiteis and the Kuki-Zo people began on May 3, 2023 — for fencing the border to stop Myanmar nationals from settling in the State illegally.

Arunachal Pradesh and Manipur welcomed the Centre's decision but Mizoram and Nagaland, the other two States bordering Myanmar, opposed it because of the ethnic composition along the border "imposed by the British rulers" and their age-old social, cultural, and trade links.

Why is the India-Myanmar border in focus?
India has had an on-off diplomatic relationship with Myanmar since 1948 when the latter attained independence from the British. India's border districts absorbed waves of refugees following military coups and pro-democracy movements in Myanmar in the 1960s, 1980s, and after February 2021.

The areas of Myanmar bordering India are controlled by ethnic militias and extremist groups such as the Arakan Army, Chin National Front, and the National Socialist Council of Nagaland (Khaplang), some of which have sheltered northeast-based outfits such as the United Liberation Front of Asom. These outfits have carried out hit-and-run operations in India. Although the Myanmar border is guarded by the paramilitary Assam Rifles, the terrain and lack of fencing are said to have made it difficult to check the movement of extremists and the trafficking of drugs, arms, and other contraband items.

What do the resolutions say?

Much of India's present-day northeast was temporarily under Burmese occupation until the British pushed them out in the 1800s. The victors and the vanquished signed the Treaty of Yandaboo in 1826, leading to the current alignment of the boundary between India and Burma, later renamed Myanmar.

The border divided people of the same ethnicity and culture —specifically the Nagas of Nagaland and Manipur and the Kuki-Chin-Mizo communities of Manipur and Mizoram — without their consent. Asserting the right of the Mizo-Chin people to live together, Mizoram's Home Minister K. Sapdanga, moving the resolution, said a fence would divide their ancestral land and alienate people with blood ties.

Nagaland's Deputy Chief Minister, Y. Patton, said while moving the resolution in the State Assembly that the Centre's move would disrupt the age-old ties of the Naga people living on both sides of the international border.

Mr. Sapdanga belongs to the Zoram People's Movement, a party said to have been backed by the BJP. Mr. Patton is a key leader of the BJP, a minor partner in the coalition headed by the Nationalist Democratic Progressive Party.

What impact will the resolutions have?
In March 2021, the Supreme Court said there was no harm in State Legislative Assemblies adopting resolutions against central laws like the Citizenship (Amendment) Act. It said that such resolutions are merely "opinions" of the majority members of an Assembly and do not have the force of law. Some of the northeast States have adopted several resolutions over the decades but these have had little impact apart from reflecting the sentiments of the people.

Relevance: GS Prelims & Mains Paper II; Governance
Source: The Hindu

4. Is the Drugs and Magic Remedies (Objectionable Advertisements) Act, 1954 ineffective to stop misleading advertising campaigns on medicines? What has the court ruled? How harmful are the 'miracle cures' being offered by the company for diseases such as diabetes?

Why in News?
On February 27, the Supreme Court restrained Patanjali Ayurved from discrediting allopathy in its campaigns, and from advertising products that claim to cure chronic conditions. Patanjali's ads present its products to people as a 'permanent relief', which is "misleading" and "a violation of the law", the Bench remarked, citing provisions of the Drugs and Magic Remedies (Objectionable Advertisements) Act, 1954 (DMR&OA) and its Rules. The Bench also issued a contempt notice against Patanjali Ayurved (co-founded by yoga guru Baba Ramdev) and Managing Director Acharya Balkrishna for failing to adhere to directions passed last November.

What is the case?

The Indian Medical Association (IMA) in 2022 filed a petition in response to a Patanjali advert titled: "Save yourself and the country from the misconceptions spread by pharma and medical industry." The petition presented two grievances — that the company is denigrating allopathy through a "continuous, systematic, and unabated spread of misinformation", while making exaggerated claims about its drugs which are purportedly based on "scientific, evidence-based medicines". In December 2022, Nepal's drug regulator blacklisted Patanjali's Divya Pharmacy for failing to comply with WHO's drug manufacturing standards.

Such statements violate both the DMR&OA and the Consumer Protection Act, 2019 (CPA), the IMA has said.

Last Year SC Reprimand

A Supreme Court Bench on November 21 last year warned Patanjali from advertising a permanent cure and threatened to impose a penalty of ₹1 crore for every product which promises a 'permanent' treatment.

Patanjali assured the court against future violations, "especially relating to advertising or branding of products", adding "that no casual statements claiming medicinal efficacy or

against any system of medicine will be released to the media in any form". The company failed on both counts.

What does the law say?

The DMR&OA regulates false medical advertisements in India. People or entities can be sentenced up to six months imprisonment, and/or a fine for the first offence. The CPA also penalises misleading advertisements and carries a sentence that can extend to two years.

Section 3 of the DMR&OA prohibits ads for the "diagnosis, cure, mitigation, treatment or prevention of any disease, disorder or condition specified in the Schedule". The Schedule includes "diabetes", "heart diseases", "glaucoma" and 51 other diseases. In his regular programme, the yoga guru claimed, "Modern medical science says cataract and glaucoma can't be fixed. I had done it 30 years ago. Glaucoma gets better 100%." Researchers agree there is no effective, proven and permanent treatment for glaucoma, but "Patanjali claims you can just put some drops and cure these conditions."

In addition, Section 4 prohibits any "misleading advertisement", which "directly or indirectly gives a false impression regarding the true character of the drug", "makes a false claim for the drug", or "is otherwise false or misleading in any material particular."

The IMA had filed cases against Patanjali and Mr. Ramdev before in different States for making spurious statements about the efficacy of oxygen cylinders and for stoking vaccine hesitancy.

Are there limitations in the law?

The DMR & OA is an imperfect law, suggest medical practitioners and experts. These limitations allow companies like Patanjali to go unscathed despite repeated offences.

However, the ads are not only unlawful, but also pose a risk to public health, argue experts. In 2022, Patanjali claimed to have developed an 'effective' treatment for insulin-dependent diabetics, who could now 'stop taking insulin'. The medical community criticised the company for peddling a false 'miracle cure'. The Supreme Court has placed a temporary ban on all advertisements of medicinal products, refusing to even permit ads "without adjectives". The case will be heard next on March 19.

Relevance: GS Prelims & Mains Paper II; Governance
Source: The Hindu

5. JMM bribes for votes ruling: How Supreme Court interpreted privilege for lawmakers

Why in News?

A seven-judge Constitution Bench of the Supreme Court, headed by Chief Justice of India DY Chandrachud, ruled that lawmakers facing bribery charges in connection with their speech and votes in the House cannot be immune from criminal prosecution. In doing so, the Court held

that claims to parliamentary privilege by lawmakers can be subject to judicial review, and only Parliament cannot have the last word on the issue.

Taking away privilege
A look at the observations made by the seven-judge Bench of the Supreme Court in its unanimous verdict:

- The JMM bribery case judgment of 1998, granting lawmakers immunity from prosecution for bribery, had wide ramifications on public interest, probity in public life and parliamentary democracy

- A claim of immunity should fulfil the twofold test that it is tethered to the collective functioning of the House and that it is necessary for the discharge of the essential duties of a legislator

- The offence of bribery is complete at the point when the legislator accepts the bribe

What the law says, what court had to decide
Article 105(2) of the Constitution states: "No member of Parliament shall be liable to any proceedings in any court in respect of anything said or any vote given by him in the Parliament or any committee thereof, and no person shall be so liable in respect of the publication by or under the authority of a House of Parliament of any report, paper, votes or proceedings."

Article 194(2) provides identical protections to members of state Assemblies.
Before the seven-judge Bench was essentially the interpretation of this provision. This provision was previously interpreted in the 1998 JMM Bribery ruling, so the correctness of that ruling had to be tested.

Interpreting the law on privileges
Tracing the history of parliamentary privileges in India, the SC said that unlike the House of Commons in the UK, India does not have 'ancient and undoubted' rights vested after a struggle between Parliament and the King. These rights in India, even during colonial times, have flown from a statute, which after independence transitioned to a constitutional privilege. This the court cited as reason to interpret privilege in a way that fits with the larger ideals of the Constitution.

There are two components of parliamentary privilege. One is what the House exercises collectively — which would include the power to punish for its contempt, the power to conduct its own affairs, among others. The second is for individual rights — say exercise of free speech by each member. This, the court said, has to pass a test.

The ruling cited the "necessity test", which means that for a member to exercise a privilege, the privilege must be such that without it "they could not discharge their functions." Naturally, accepting bribes cannot be said to be necessary to discharge one's functions as a lawmaker, unlike, for example, having the right to free speech.

The court also said that the Constitution envisions probity in public life. "Corruption and bribery of members of the legislature erode the foundation of Indian Parliamentary democracy. It is destructive of the aspirational and deliberative ideals of the Constitution and creates a polity which deprives citizens of a responsible, responsive and representative democracy," the ruling stated.

Graft-vote or vote of conscience
The court also had to decide if a lawmaker gets immunity if he accepts a bribe but votes as per his conscience or party line and not as per the request of the bribe-giver. Essentially, without a quid pro quo, can accepting money still be equated to graft?

The Court analysed Section 7 of the Prevention of Corruption Act, which deals with 'offence relating to public servant being bribed'.

"The mere "obtaining", "accepting" or "attempting" to obtain an undue advantage with the intention to act or forbear from acting in a certain way is sufficient to complete the offence. It is not necessary that the act for which the bribe is given be actually performed," the court said. This means that accepting a bribe is an offence as is, and it does not depend on whether the public servant acted differently.

The Court also said that it would be a violation of the right to equality under Article 14 of the Constitution to create "an illegitimate class of public servants which is afforded extraordinary protection." Such a classification, the court said, would be manifestly arbitrary.

Court's power
Since Parliament also has the power to punish its members for contempt — the punishment here could be suspension from the House and even sentencing to jail term — the SC had to decide whether this meant courts had no role to play.

The SC held that both the court and Parliament can exercise jurisdiction on the actions of lawmakers in parallel. This is because the purpose of punishment by the House is different from the purpose of a criminal trial.

"The issue of bribery is not one of exclusivity of jurisdiction by the House over its bribe-taking members. The purpose of a House acting against a contempt by a member for receiving a bribe serves a purpose distinct from a criminal prosecution," the court said.

6. SC upholds Rajasthan rule barring those with more than 2 kids from police force

Why in News?
The Supreme Court has affirmed the Rajasthan government's decision to bar candidates with more than two children from applying for a police constable post. The Supreme Court bench ruled that Rule 24(4) of the Rajasthan Police Subordinate Service Rules, 1989, which stipulates a maximum limit of two children per candidate, is non-discriminatory and constitutional.

What do the 1989 Rules say?
The Rajasthan Police Subordinate Service Rules, 1989, apply to the entire police establishment in the state of Rajasthan. Broadly, Rule 24 deals with "Disqualification for Appointment." Apart from those with over two children on or after June 1, 2002, it also disqualifies male candidates with more than one living wife, unless the government is satisfied there exist special grounds for it. Similarly, female candidates married to those who already have a living wife are disqualified unless the government is satisfied there are special grounds for it. Candidates accepting dowry at the time of marriage have also been disqualified.

While accepting or demanding a dowry is illegal, having more than a certain number of children has not been declared a crime in the statute books. However, both the Centre and the state governments have made multiple attempts to push the population towards the two-child policy.

Image credit: istockphoto.com/raclro

What was the case?
The court was acting on an ex-serviceman's plea. After retiring from defence services on January 31, 2017, he applied for the post of constable in the Rajasthan Police on May 25, 2018, but his candidature was rejected as he had more than two children after June 1, 2002.

Subsequently, he approached the Rajasthan HC, where a two-judge Bench on October 12, 2022, turned down his claim. This led the ex-serviceman to approach the top court.

What did the SC rule?
In its February 20 order, the Supreme Court dismissed the ex-serviceman's challenge to the Rajasthan HC order.

Recalling that a "somewhat similar provision" was introduced as an eligibility condition to contest panchayat elections and was upheld by the SC in its 2003 ruling in "Javed vs. State of Haryana", the court upheld Rule 24 (2).

What is the 2003 Javed vs Haryana ruling the SC relied on?
In Javed vs. the State of Haryana, a three-judge Bench of the top court upheld the Haryana Municipal (Second Amendment) Act, 1994, and consequently affirmed the two child-policy for holding the offices of sarpanch or up-sarpanch in the state.

A Bench led by then Justice RC Lahoti held that the classification which disqualifies candidates for having more than two living children was "non-discriminatory" and "intra-vires the Constitution" since the objective behind the provision was to promote family planning.

Are there such policies in other states?
"Population control and family planning" is a subject on the concurrent list, which contains matters both the Centre and the states can legislate on.

Thus, several states have included a small family as a criterion to qualify for various positions. The Rajasthan Panchayati Raj Act 1994 disqualifies those with over two children from contesting elections as a panch or a member.

The Odisha Zilla Parishad Act, 1991, bars those with more than two children from contesting. The Gujarat Local Authorities Laws (Amendment) Act, 1962, disqualifies those with more than two children from contesting elections for bodies of local self-governance, like panchayats, municipalities, and municipal corporations.

While similar laws exist for local body elections in states like Maharashtra, Assam, Telangana, and Andhra Pradesh, some of these states have gone a step further, bringing such two-child policies into the realm of public employment.

For instance, the Maharashtra Civil Services (Declaration of Small Family) Rules came into force in 2005 and mandated the filing of a "small family declaration" while applying for a government job.

Relevance: GS Prelims & Mains Paper II; Governance
Source: The Indian Express

7. Ladakh, Article 371, and the Sixth Schedule of the Constitution

Why in News?

In a meeting with representatives from Ladakh, which has been witnessing protests recently, Union Home Minister Amit Shah offered to extend Article 371-like protections to the region. Shah is learnt to have told the Leh Apex Body (ABL) and the Kargil Democratic Alliance (KDA) that their concerns related to jobs, land, and culture would be taken care of, but the government would not go as far as to include Ladakh in the Sixth Schedule of the Constitution.

What is the Sixth Schedule of the Constitution?
Following the repeal of Article 370 in August 2019 and the subsequent enactment of the Jammu and Kashmir Reorganisation Act, 2019, Ladakh has been recognised as a separate Union Territory "without legislature". UTs like New Delhi and Pondicherry have their own Legislative Assemblies.

Ever since the separation, organisations like the ABL and the KDA have demanded that Ladakh be included under the Sixth Schedule. This Schedule contains provisions regarding the administration of tribal areas in the states of Assam, Meghalaya, Tripura and Mizoram.

Inclusion under this Schedule would allow Ladakh to create Autonomous District and Regional Councils (ADCs and ARCs) — elected bodies with the power to administrate tribal areas. This would include the power to make laws on subjects such as forest management, agriculture, administration of villages and towns, inheritance, marriage, divorce and social customs. A majority of the population in Ladakh belongs to Scheduled Tribes.

The ADCs and ARCs may also constitute village councils or courts to decide disputes between parties from Scheduled Tribes, and appoint officers to oversee the administration of the laws they enact. In cases where the offences are punishable with death or more than five years of imprisonment, the Governor of the state can confer upon the ADCs and ARCs the power to try them under the country's criminal and civil laws.

The Schedule also gives ARCs and ADCs the power to collect land revenue, impose taxes, regulate money lending and trading, collect royalties from licences or leases for the extraction of minerals in their areas, and establish public facilities such as schools, markets, and roads.

What protections are offered under Article 371?
Articles 371 and 371-A through J provide "special provisions" for specific states, often to give representation to certain religious and social groups and to allow these groups to exercise autonomy over their affairs without interference from the state and central governments.

Special provisions under Article 371 would allow protections to be extended to the local population of Ladakh, while stopping short of the widespread autonomy that is provided to ADCs and ARCs under the Sixth Schedule.

When the Constitution first came into force, Article 371 stood alone, requiring the creation of "development boards" in Maharashtra and Gujarat for certain regions in order to assess their overall development and the need for government expenditure. As new states were created, more special provisions were introduced.

Under Article 371-A, which contains provisions related to Nagaland, Parliament cannot enact laws that affect the social, religious, or customary legal practices of Nagas, or the transfer and ownership of land without concurrence from the state Assembly. Similar protections have also been extended to Mizos from Mizoram under Article 371-G.

Articles 371-B and C allow the creation of special committees in the Legislative Assemblies of Assam and Manipur. These committees comprise MLAs elected from tribal areas and Hill areas respectively.

Special provisions have also been introduced to provide reservations in the Sikkim Legislative Assembly (Article 371-F), in order to protect "the rights and interests of the different sections of the population".

Notably, the special provisions for Nagaland, Manipur, Sikkim, Mizoram, Arunachal Pradesh (371-H), and Goa (371-J) were introduced shortly after each of these states was officially created. If special provisions are introduced for Ladakh, it would be the first time they are introduced for a Union Territory as opposed to a state.

Shah reportedly assured the Ladakh delegation that the government would ensure representation and participation of locals through hill councils and was willing to provide up to 80% reservation in public employment.

Relevance: GS Prelims & Mains Paper II; Governance
Source: The Indian Express

8. 1st ever 'National Creators Awards

Why in news?
The Prime Minister, Shri Narendra Modi presented the first-ever National Creators Award today at Bharat Mandapam, New Delhi. The National Creators Award is an effort to recognize excellence and impact across domains, including storytelling, social change advocacy, environmental sustainability, education, and gaming among others. The award is envisioned as a launchpad for using creativity to drive positive change.

Background

The National Creator Award has witnessed exemplary public engagement. In the first round, more than 1.5 lakh nominations across 20 different categories were received. Subsequently, in the voting round, about 10 lakh votes were cast for digital creators in various award categories. Following this, 23 winners, including three international creators, were decided. This overwhelming public engagement is testimony that the award truly reflects the people's choice.

The award is being provided across twenty categories including the Best Storyteller Award; The Disruptor of the Year; Celebrity Creator of the Year; Green Champion Award; Best Creator For Social Change; Most Impactful Agri Creator; Cultural Ambassador of The Year; International Creator award; Best Travel Creator Award; Swachhta Ambassador Award; The New India Champion Award; Tech Creator Award; Heritage Fashion Icon Award; Most Creative Creator (Male & Female); Best Creator in Food Category; Best Creator in Education Category; Best Creator in Gaming Category; Best Micro Creator; Best Nano Creator; Best Health and Fitness Creator.

Relevance: GS Prelims & Mains Paper II; Governance
Source: PIB

9. One Nation, One Election: Highlights of the Kovind panel's recommendations

Why in News?
The High-level Committee (HLC) on One Nation, One Election submitted its report to President Droupadi Murmu recently. The comprehensive 21-volume, 18,626-page report contains 11 chapters plus Annexures.
The government has also published a list of Frequently Asked Questions (FAQs). These are some key questions and answers on the One Nation, One Election proposal, as per the government documents.

High-Level Panel Submits Report On 'One Nation, One Election'

What is meant by simultaneous elections?

Simultaneous elections, popularly referred to as "One Nation, One Election", means holding elections to Lok Sabha, all state Legislative Assemblies, and urban and rural local bodies (municipalities and panchayats) at the same time.

Currently, all these elections are held independently of one another, following timelines dictated by the terms of every individual elected body.

Is this the first time that simultaneous elections are proposed to be held in India?

No. Following efforts made by the central government, state governments, and political parties along with the Election Commission of India, simultaneous elections were held in the seven states of Bihar, Bombay, Madras, Mysore, Punjab, Uttar Pradesh, and West Bengal in 1957.

Simultaneous elections were by and large in vogue until the fourth general elections of 1967. However, as successive central governments used constitutional provisions to dismiss state governments before the end of their term, and as coalition governments in the states and the Centre kept collapsing, a country came to see elections at different times through the year.

According to the HLC report, the country now sees five to six elections in a year — if municipalities and panchayat elections are also included, the number of elections will increase manifold.

So what is the need for holding simultaneous elections?

There has been discussions on this issue in various public for a, especially since 2014, when the current government came to power, and after Prime Minister Narendra Modi threw his weight behind the idea.

The government's FAQs list the following reasons in favour of holding simultaneous elections:
(i) Frequent elections burden the government exchequer with additional expenditure. If the expenditure incurred by political parties is also added, these figures will be even higher.

(ii) Asynchronous elections cause uncertainty and instability, thwarting supply chains, business investments and economic growth.

(iii) Disruption of government machinery due to asynchronous elections causes hardship to citizens.

(iv) Frequent use of government officials and security forces adversely affect discharge of their duties.

(v) Frequent imposition of the Model Code of Conduct (MCC) causes policy paralysis and slows down the pace of the developmental programmes.

(vi) Staggered elections induce 'voters' fatigue' and present a significant challenge in ensuring their participation.

Who took up the job of studying this issue?
The HLC, popularly known as the Kovind panel after its chairman, former President Ram Nath Kovind, was constituted in September 2023, to go into the issue. The panel had as its members Home Minister Amit Shah, former Rajya Sabha Leader of Opposition Ghulam Nabi Azad, former Lok Sabha Secretary General Subhash C Kashyap, former chairman of the 15th Finance Commission N K Singh, Senior Advocate Harish Salve, and former Chief Vigilance Commissioner Sanjay Kothari. Law Minister Arjun Ram Meghwal was a Special Invitee to the Committee.

What has the committee recommended?
According to the FAQs, the committee has made the following recommendations:
(i) **AMENDING THE CONSTITUTION:** The Constitution should be amended to enable simultaneous elections in two steps.

In the first step, simultaneous elections will be held to Lok Sabha and State Assemblies. For this, no ratification by the states will be required for the constitutional amendment.

In the second step, elections to municipalities and the panchayats will be synchronised with elections to Lok Sabha and state Assemblies in such a way that local body elections are held within 100 days of the elections to Lok Sabha and state Assemblies. This will require ratification by not less than one-half of the states.

(ii) **SINGLE ELECTORAL ROLL AND ELECTION ID:** For the purpose of preparation of single electoral roll and electoral photo identity cards for use in elections to all the three tiers of government, the Constitution should be amended, so that the Election Commission of India

can prepare a single electoral roll and election ID in consultation with the State Election Commissions. These amendments will require ratification by not less than one-half of the states.

(iii) **IN CASE OF HUNG HOUSE, ETC.:** In the event of a hung House, a no-confidence motion, or any such event, fresh elections should be held to constitute the new Lok Sabha or state Assembly for the unexpired term of the House.

(iv) **MEETING LOGISTICS REQUIREMENTS:** The committee has recommended that for meeting logistical requirements, the Election Commission of India will plan and estimate in advance, in consultation with the State Election Commissions, and take steps for the deployment of manpower, polling personnel, security forces, EVMs/VVPATs, etc., so that free and fair simultaneous elections are held in all the three tiers of the government.

Relevance: GS Prelims & Mains Paper II; Governance
Source: The Indian Express

10. Rules for The Citizenship Amendment Act (CAA)

Why in News?
The Centre on March 11 notified Rules for The Citizenship Amendment Act (CAA), paving the way for the implementation of the controversial law more than four years after it was passed by Parliament in December 2019.

The CAA will benefit thousands of Hindu, Sikh, Buddhist, Jain, Parsi, or Christian migrants from Pakistan, Bangladesh, and Afghanistan who entered India before December 31, 2014, and seek citizenship of India. This group of people has been living in India illegally or on long-term visas (LTV).

What information must the intended beneficiaries of the CAA provide?
The CAA aims to give citizenship to the target group of migrants even if they do not have valid travel documents as mandated in The Citizenship Act, 1955. The CAA presumes that members of these communities who entered India faced religious persecution in these countries. The law has also cut the period of citizenship by naturalisation from 11 years to five.

Under the CAA Rules, immigrants from these countries are only supposed to prove the country of their origin, their religion, the date of their entry into India, and the knowledge of an Indian language to apply for Indian citizenship.

What proof is required to establish the country of origin under CAA?

The rules have been relaxed very significantly. The earlier essential requirement of a valid passport issued by Pakistan, Bangladesh, or Afghanistan, along with a copy of a valid Residential Permit of India, has been virtually done away with.

According to the CAA Rules, a birth or educational institution certificate, "Identity Document of any kind", "Any License or Certificate", "Land or tenancy records", or "Any other document" issued by these countries, which proves the applicant was their citizen, would serve as proof of citizenship of these countries.

Any document that shows that "either of the parents or grandparents or great grandparents of the applicant is or had been a citizen of one of the three countries" is also acceptable.

Importantly, these documents will be admissible even beyond their validity period. Sources said these documents can also be used to establish the religion of the applicant.

The requirement of a certificate from an educational institution, certifying that the applicant knows one of the languages mentioned in the Eighth Schedule of the Constitution, has also been done away with. Now, merely a declaration to that effect, and the ability to speak the language, will be enough.

And how will the date of entry into India be established?

The Rules list 20 documents, any of which would be admissible as proof of date of entry into India.

These include a valid visa or residential permit issued by the Foreigners' Regional Registration Office (FRRO); slip issued by census enumerators in India; a driving licence, Aadhaar, ration card, or any letter issued by the government or a court; an Indian birth certificate; land or tenancy records; registered rent agreement; PAN card issuance document, or a document issued by the central or a state government, PSU, or bank; certificate issued by an elected member of any rural or urban body or officer thereof, or a revenue officer; a post office account; an insurance policy; utility bills; court or tribunal records; EPF documents; school leaving certificate or academic certificate; a municipality trade license; or a marriage certificate. Earlier, a visa along with certain other documents was an essential requirement.

Who will be in charge of processing the applications for citizenship?
Opposition-ruled states including Kerala and West Bengal have said they will not implement the CAA. Under the Rules, however, the Centre has tweaked the process of grant of citizenship to non-Muslim migrants from the three countries in such a way that states will have little say in the matter.

Thus, while citizenship applications were earlier made to the district collector — who is under the administrative control of the state government — the new Rules provide for an Empowered Committee and a District Level Committee (DLC), to be instituted by the Centre, to receive and process the applications, which are to be submitted electronically.

Applications will be made to the DLC, and the final decision will be taken by the Empowered Committee.

The Empowered Committee will be headed by a Director (Census Operations), and will have as its members an officer of the Subsidiary Intelligence Bureau (under the Ministry of Home Affairs) of the rank of deputy secretary or above, the FRRO, the State Informatics Officer of the National Informatics Centre (under the Ministry of Electronics & Information Technology), and the Postmaster General (under the Union Ministry of Communications) of the state. A representative each from the state home department and the Railways will be invitees to the Committee.

The DLC shall consist of the District Informatics Officer or District Informatics Assistant of the concerned district, and a nominee of the central government. The two invitees to the committee will be a representative of the district collector's office not below the rank of Naib Tehsildar or equivalent, and the jurisdictional station master of the Railways (subject to availability).

Relevance: GS Prelims & Mains Paper II; Governance
Source: The Indian Express

11. Centre signs pact with Tripura govt, TIPRA Motha

Why in News?
The Centre recently signed a tripartite agreement with the Tripura government and the state's main opposition party, the TIPRA Motha, for a time-bound "honorable resolution" of the long-pending demands of the state's tribal population, including economic, political, land, linguistic and cultural rights.

Signed on March 2, the agreement comes just ahead of the Lok Sabha elections, and has put an end to the indefinite fast-unto-death started by TIPRA Motha founder and royal scion Pradyot Kishore Manikya Debbarma on February 27. It has also facilitated the TIPRA Motha's

joining the BJP in the state government, with two of its members sworn in as ministers. The rest of the Opposition camp has slammed TIPRA Motha for joining hands with the BJP.

What are the demands?
The Tipra Motha's demands include a "Greater Tipraland" — a separate state for Tripura's tribals which seeks to include those living outside the Tripura Tribal Areas Autonomous District Council (TTAADC) area as well. The party has sought more powers for the TTAADC, including direct funding from the Centre, its own police force, and share of revenue from gas exploration in the state. It also wants the Roman script to be declared as the official script for the indigenous Kokborok language.

What does the accord say?
"Under the pact, it was agreed to amicably resolve all issues of indigenous people of Tripura relating to history, land and political rights, economic development, identity, culture and language. Along with this, it was agreed to constitute a joint working group/ committee to work out and implement the mutually agreed points on all the above mentioned issues in a time-bound manner to ensure an honourable solution," the Centre said in a statement.

"In order to maintain a conducive atmosphere for implementation of the pact, all stakeholders shall refrain from resorting to any form of protest/ agitation, starting from the day of signing of the agreement," it added.

What did Home Minister Amit Shah say?
Union Home Minister Amit Shah termed the signing of the accord "historic", and said: "With this agreement, we have honoured history, corrected mistakes and accepted today's reality. Nobody can change history but we can learn from our mistakes and go ahead keeping sight of the realities".

Shah's comments were an oblique reference to allegations of deprivation meted out to tribals in Tripura, who became a minority in their state due to non-tribals settling in large numbers before the 1971 Bangladesh Liberation War, and of concerns of illegal immigration from Bangladesh.

12. Constitutional changes to have simultaneous elections in India

Recommendation for Simultaneous elections

In its report submitted to President Droupadi Murmu, the High-Level Committee on One Nation, One Election headed by former President Ram Nath Kovind has recommended that elections to Lok Sabha and state Assemblies should be held at the same time and, subsequently, elections to local bodies (municipalities and panchayats) too should be "synchronised" so that they are held within 100 days of the simultaneous state and national elections.
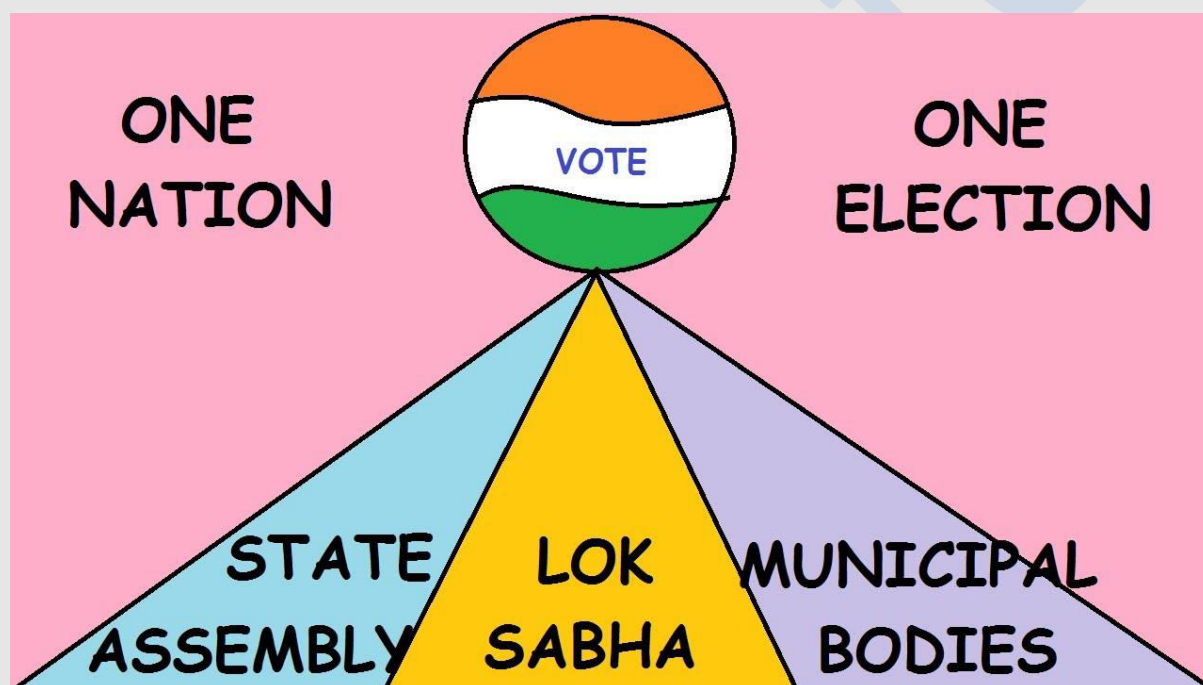
Suggested Amendments to Constitution

To give effect to its recommendation, the committee has suggested 15 amendments to the Constitution of India — in the form of both new provisions and changes to existing provisions — to be carried out through two Constitution Amendment Bills.

The first Bill will deal with the transition to a simultaneous election system, and the procedure for fresh elections to Lok Sabha or a state Assembly before the expiration of their stipulated five-year term.

According to the Kovind committee, this Bill can be passed by Parliament without the requirement for consultation with state governments or ratification by state Assemblies.

The second Bill will deal with municipal and panchayat elections, as well as the creation of a Single Electoral Roll by the Election Commission of India (ECI), with details of every voter and the seat for which they are eligible to vote.

The Kovind committee has acknowledged that this Bill deals with subjects on which states have the primary power to enact laws — and it would, therefore, require the approval or ratification of more than half of India's states before it can be enacted.

Transition to simultaneous polls; Parliament's power to make laws
The first Bill recommended by the Kovind committee would begin by inserting a new article—82A —into the Constitution. Article 82A will establish the process by which the country will move to a system of simultaneous elections for Lok Sabha and state Assemblies.

According to the committee report, Article 82A(1) will state that "on the date of the first sitting of the House of the People after a general election", the President will issue a notification bringing Article 82A into effect. The date of this notification "shall be called the Appointed date".

Article 82A(2) will state that "all the Legislative Assemblies constituted in any general election held after the appointed date shall come to an end on the expiry of the full term of the House of the People".

The proposed Article 82A(3) requires the ECI to hold "General elections to the House of the People and the Legislative Assemblies simultaneously". If the ECI believes that elections to any legislative assembly cannot be conducted simultaneously, "it may make a recommendation to the President, to declare by an Order, that the election to that Legislative Assembly may be conducted at a later date". (Article 82A(4)).

However, even in cases where the state Assembly election is deferred, "the full term of the Legislative Assembly shall end on same date as the end of the full term of the House of the People constituted in the General Election". (Article 82A(5))

The proposed Bill also recommends amending Article 327, which gives Parliament the power to make laws relating to elections to Lok Sabha, Rajya Sabha, and state legislatures, including the preparation of electoral rolls and delimitation of constituencies.

The Kovind committee has recommended that the power of Parliament under Article 327 should be expanded to include "conduct of simultaneous elections" as well.

When Lok Sabha or state Assembly is dissolved before 'full term' ends
Lok Sabha and state Assemblies are constituted for a period of five years after each election. The committee has recommended that this five-year period be referred to as "the full term" by amending Sub-clause 2 of Article 83 ("Duration of Houses of Parliament") and Sub-clause 1 of Article 172 ("Duration of the State Legislatures").

If Lok Sabha or a state Assembly is dissolved before the expiry of the full term, the remaining period will be referred to as the "unexpired term", as per the suggested amendments to Articles 83(3) and 172(3).

The recommended Articles 83(4) and 172(4) state that the Lok Sabha or state Assembly that replaces the previous one will serve only for the remaining "unexpired term" before being dissolved again once simultaneous elections are conducted as scheduled.

These amendments are also a part of the first Constitution Amendment Bill proposed by the Kovind committee, which it says will not require ratification by states.

The report has also recommended the amendment of certain laws relating to legislative Assemblies in Union Territories such as The Government of National Capital Territory of Delhi Act, 1991, The Government of Union Territories Act, 1963, and the Jammu and Kashmir Reorganisation Act, 2019. These laws would have to be amended to ensure that Assembly elections in UTs also take place simultaneously with Lok Sabha and state Assembly elections.

Simultaneous local body elections, preparation of single electoral roll
The second Constitution Amendment Bill recommended by the Kovind committee contains amendments that would require ratification by the states. Under Article 368(2), any constitutional amendment that deals with subjects in the State List (where states have the power to enact laws) would have to be ratified by at least half of the state legislatures in the country before it can be passed.

As the amendments suggested in the second Bill relate to municipal and panchayat elections, which fall under Entry 5 of the State List titled "Local government", they would require ratification by the states.

The committee has suggested the inclusion of a new Article 324A in the Constitution. This new article would empower Parliament to make laws to ensure that municipality and panchayat elections are held simultaneously with the General Elections (to Lok Sabha and state Assemblies).

The Kovind committee has also recommended that new sub-clauses should be added to Article 325 of the Constitution. This article says: "There shall be one general electoral roll for every territorial constituency for election to either House of Parliament or to the House or either House of the Legislature of a State…"

The new Article 325(2) proposed by the committee will create a "Single Electoral Roll for every territorial constituency for election in the House of the People, Legislature of a State or to a Municipality or a Panchayat".

This electoral roll "shall be made by the Election Commission in consultation with the State Election Commissions", and "the electoral roll prepared under this sub-article shall substitute

any electoral roll prepared earlier by either the Election Commission under Art 325 or the State Election Commissions under Art. 243K and Art. 243ZA" (proposed Article 325(3)).

If this recommendation is accepted, the process of creating electoral rolls will be taken over by the ECI, and State Election Commissions will play a purely consultative role.

13. Gyanesh Kumar, Sukhbir Sandhu appointed Election Commissioners

Former bureaucrats Gyanesh Kumar and Sukhbir Singh Sandhu who were appointed as ECs

Why in news?
President Droupadi Murmu appointed retired bureaucrats Gyanesh Kumar and Sukhbir Singh Sandhu as Election Commissioners. A selection panel, headed by Prime Minister Narendra Modi, had earlier recommended their names.

Appointment by new method
This is the first time that Election Commissioners have been appointed in accordance with the new Chief Election Commissioner and Other Election Commissioners (Appointment, Conditions of Service and Term of Office) Act, 2023 brought in by the government in December.

According to the Act, a selection committee headed by the Prime Minister and comprising a Union Minister nominated by the Prime Minister and the Leader of Opposition in the Lok Sabha will select members of the Election Commission.

Union Home Minister Amit Shah and Congress leader Adhir Ranjan Chowdhury are members of the current committee.

Opposition member objections
After the meeting, Mr. Chowdhury told the media that a total of six shortlisted names had been shared with him barely 10 minutes before the meeting.
Mr. Chowdhury said that late on Wednesday night, a list of 212 names had been shared with him. The Congress leader also said that he had submitted a dissent note.

Relevance: GS Prelims & Mains Paper II; Governance
Source: The Hindu

14. How have the newly notified rules eased the process of granting Indian citizenship to specific communities under the CAA? What arguments have been presented for challenging its constitutionality? What is the significance of the government's assertion that the CAA does not affect legal, democratic, or secular rights?

Why in News?
Four years after Parliament passed the Citizenship Amendment Act (CAA), 2019, the Ministry of Home Affairs (MHA) notified the rules to implement the law on March 11. It fast-tracks citizenship for undocumented immigrants from six non-Muslim communities — Hindu, Sikh, Buddhist, Parsi, Christian and Jain — from Pakistan, Afghanistan and Bangladesh. The CAA is also under challenge before the Supreme Court, with several petitioners moving fresh pleas seeking a stay on the implementation of the rules.

What are the implications of CAA?
In December 2019, Parliament passed an amendment to The Citizenship Act, 1955 (1955 Act) introducing a new proviso to Section 2(1)(b) which defines "illegal migrants." Accordingly, undocumented immigrants who entered India on or before December 31, 2014, and whom the Central government has exempted under the Passport (Entry into India) Act, 1920, or the Foreigners Act, 1946, would be eligible for citizenship under the 1955 Act.

However, certain tribal areas in Assam, Meghalaya, Mizoram, and Tripura were exempted from the legislation's ambit. To access these protected areas, an Inner Line Permit (ILP) is needed from the concerned State governments.

A key concern is that when viewed in combination with the proposed all-India National Register of Indian Citizens (NRIC), the CAA has the potential to disproportionately impact Muslims residing in India. In the event of people being excluded from NRIC, non-Muslims may have an opportunity to get included through the CAA, while it may be denied to Muslims. A Supreme Court-monitored National Register of Citizens that took place in Assam in 2021 left out over 19 lakh people from the citizenship register.

With the newly notified rules, the Centre has eased the process of granting Indian citizenship to members of the specified communities by excluding the requirement of a "valid passport" of their origin countries or a valid visa from India. Instead, "any document" that shows one of the parents, grandparents or even great-grandparents of the applicant was from one of these countries is sufficient to prove their nationality. Additionally, a certificate issued by an elected member of a local body can be a replacement for a visa.

After the legislation's enactment in 2019, the Indian Union Muslim League (IUML) filed a petition challenging its constitutionality, which was joined by close to 200 petitions. These petitions challenge the law for violating Article 14 of the Constitution by making religion a qualifier for citizenship.

The CAA has also been dubbed as a move to subvert the Assam Accord of 1985 that deems any person who cannot prove his ancestry beyond March 24, 1971, as an alien and does not differentiate on grounds of religion. The petitions contend that the law will further multiply the "uncontrolled influx of illegal migrants from Bangladesh to Assam."

How has the Supreme Court responded?
Calling the CAA a "benign piece of legislation," the Centre in its affidavit before the Supreme Court said that it seeks to provide amnesty to specific communities from specified countries with a clear cut-off date. It highlighted that the law does not in any manner affect the legal, democratic or secular rights of any Indian citizen.

The affidavit further stated that the "narrowly tailored legislation" was passed to "tackle a specific problem, i.e., the persecution on the ground of religion in the light of the undisputable theocratic constitutional position in these specified countries, the systematic functioning of these States and the perception of fear that may be prevalent amongst minorities as per the de facto situation in these countries."

On December 18, 2019, a Bench comprising former Chief Justice of India (CJI) S.A. Bobde refused to stay the operation of the law and instead suggested that the government publicise the actual intent of the Act. The court rejected a similar plea for stay on January 22, 2020, by underscoring that it needs to hear the government first.

On October 6, 2022, a Bench comprising former CJI U.U. Lalit passed an order stating that final hearings in the case would begin on December 6, 2022. However, the case has not been listed since then. As per the Supreme Court's website, the petitions are currently listed before a Bench headed by Justice Pankaj Mithal.

Why are petitioners seeking a stay on the rules?

The IUML and others have moved the top court seeking a stay on the rules notified on March 11.

They have pointed out how the Centre had earlier averted a push for a stay of the CAA in the Supreme Court nearly five years ago by arguing that the rules had not been framed. It has also been highlighted that the rules have done away with the tiered scrutiny of applications for citizenship by District Collectors on the ground, and recommendations of State governments as to the wisdom of granting citizenship.

They said that the government ought to have waited for a final decision from the Supreme Court before implementing the rules.

What is the significance of the challenge to Section 6A?

The proceedings against the CAA are also dependent on the outcome of the challenge to Section 6A of the 1955 Act which was introduced in furtherance of a Memorandum of Settlement called the "Assam Accord" signed on August 15, 1985.

In December last year, a five-judge Constitution Bench led by CJI D.Y. Chandrachud reserved its verdict on the validity of Section 6A after orally observing that the provision was enacted as a humanitarian measure in the wake of the 1971 Bangladesh Liberation War and was deeply interwoven in the country's history.

Section 6A determines who is a foreigner in Assam by establishing March 24, 1971, as the cut-off date for entry — those who came to the State on or after January 1, 1966, but before March 25, 1971, were to be declared as "foreigners" and would have all the rights and obligations of Indian citizens except that they would not be able to vote for 10 years.

If March 24, 1971, is upheld as a valid cut-off date for entry into the State, then CAA can be held to be violative of the Assam Accord since it establishes a different timeline.

15. AI advisory issued by Government: What does the March 1 notification signal to tech firms?

Why in News?

On March 1, the Ministry of Electronics and Information Technology (MeitY) issued an advisory to the Artificial Intelligence industry. It said that all generative AI products, like large language models on the lines of ChatGPT and Google's Gemini, would have to be made available "with [the] explicit permission of the Government of India" if they are "under-testing/ unreliable".

What is the government's stand?

The advisory represents a starkly different approach to AI research and policy that the government had previously signalled. It came soon after Rajeev Chandrasekhar, the Minister of State for Electronics and Information Technology, reacted sharply to Google's Gemini chatbot, whose response to a query, "Is [Prime Minister Narendra] Modi a fascist?" went viral. Mr. Chandrasekhar said the ambivalent response by the chatbot violated India's IT law.

Applicability of existing laws
Mr. Chandrasekhar insisted that there were "legal consequences under existing laws (both criminal and tech laws) for platforms that enable or directly output unlawful content," and that the advisory was put out for firms "to be aware that, platforms have clear existing obligations under IT and criminal law." Mr. Chandrasekhar referred to rule 3(1)(b) of the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021, which prohibits unlawful content like defamation, pornography, disinformation and anything that "threatens the unity … and sovereignty of India." He added that the rules were intended for large tech firms and wouldn't apply to startups.

Relevance: GS Prelims & Mains Paper II; Governance
Source: The Hindu

Why in News?

The Election Commission of India (ECI) announced on March 16 that the country would vote in seven phases in the Lok Sabha elections, from April 19 to June 1 and the results will be announced on June 4. With this, the Model Code of Conduct (MCC) comes into effect.

Chief Election Commissioner Rajiv Kumar asked all political parties and their leaders to strictly adhere to the MCC, which lays down a list of dos and don'ts for leaders and parties ahead of elections. Amongst other things, the code bars the government from announcing policy decisions.

What is the Model Code of Conduct?

The MCC of ECI is a set of guidelines issued to regulate political parties and candidates prior to elections. The rules range from issues related to speeches, polling day, polling booths, portfolios, the content of election manifestos, processions, and general conduct, so that free and fair elections are conducted.

When does the Model Code of Conduct come into effect?

The MCC comes into force from the date the election schedule is announced until the date that results are out. As a result, it kicks in from date of announcement of election schedule and remains in effect until the election process is concluded.

What restrictions does the Model Code of Conduct impose?

The MCC contains eight provisions dealing with general conduct, meetings, processions, polling day, polling booths, observers, the party in power, and election manifestos.

As soon as the code kicks in, the party in power — whether at the Centre or in the states — should ensure that it does not use its official position for campaigning. Hence, no policy, project or scheme can be announced that can influence the voting behaviour. The party must also avoid advertising at the cost of the public exchequer or using official mass media for publicity on achievements to improve chances of victory in the elections.
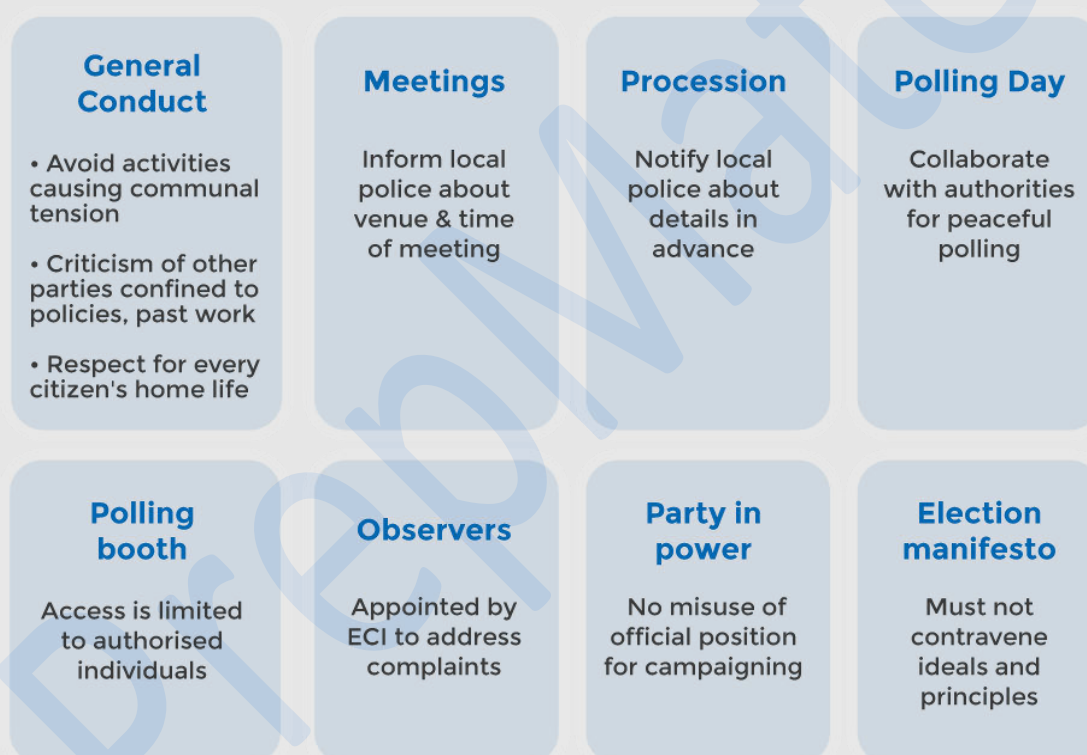
The code also says the ministers must not combine official visits with election work or use official machinery for the same. The ruling party cannot use government transport or machinery for campaigning. It should also ensure that public places such as maidans etc., for holding election meetings, and facilities like the use of helipads are provided to the opposition parties on the same terms and conditions on which they are used by the party in power.

The issue of advertisement at the cost of public exchequer in the newspapers and other media is also considered an offence. The ruling government cannot make any ad-hoc appointments in government, public sector undertakings etc., which may influence the voters.

Political parties or candidates can be criticised based only on their work record and no caste and communal sentiments can be used to lure voters. Mosques, Churches, Temples or any other places of worship should not be used for election campaigns. Bribing, intimidating or impersonation of voters is also barred. Holding public meetings during the 48-hour period before the hour fixed for the closing of the poll is also prohibited. The 48-hour period is known as "election silence". The idea is to allow a voter a campaign-free environment to reflect on events before casting her vote.

MODEL CODE OF CONDUCT
RULES FOR POLITICAL PARTIES AND CANDIDATES

General Conduct
- Avoid activities causing communal tension
- Criticism of other parties confined to policies, past work
- Respect for every citizen's home life

Meetings
Inform local police about venue & time of meeting

Procession
Notify local police about details in advance

Polling Day
Collaborate with authorities for peaceful polling

Polling booth
Access is limited to authorised individuals

Observers
Appointed by ECI to address complaints

Party in power
No misuse of official position for campaigning

Election manifesto
Must not contravene ideals and principles

Is the Model Code of Conduct legally binding?
The MCC evolved as part of the ECI's drive to ensure free and fair elections and was the result of a consensus among major political parties. It has no statutory backing. Simply put, this means anybody breaching the MCC can't be proceeded against under any clause of the Code. Everything is voluntary. The EC uses moral sanction or censure for its enforcement.

The ECI can issue a notice to a politician or a party for an alleged breach of the MCC either on its own or based on a complaint by another party or individual. Once a notice is issued, the person or party must reply in writing — either accepting fault and tendering an unconditional apology or rebutting the allegation. In the latter case, if the person or party is found guilty

subsequently, he/it can attract a written censure from the ECI — something that many see as a mere slap on the wrist.

17. What is the HbA1C test and why is it used to check for diabetes?

Why in News?
India is estimated to have 10.13 crore people with diabetes, and another 13.6 crore people who are pre-diabetic, according to a nationwide study published in 2023. This apart, over 35% of Indians suffer from hypertension and nearly 40% from abdominal obesity, both of which are risk factors for diabetes. India accounts for 17% of all diabetes patients in the world.

Prevention and early detection are key to helping combat this non-communicable disease burden, experts say. One of the most commonly-used tests to diagnose pre-diabetes and diabetes (both type 1 and type 2) and to help manage diabetes, is the haemoglobin A1C (HbA1C) test, also known as the glycated haemoglobin or glycosylated haemoglobin test.

How does the test work?
Sugar enters your bloodstream from the food you eat. The sugar, or glucose, attaches to the haemoglobin in your red blood cells. Haemoglobin is a protein that transports oxygen to all the cells of your body. Everybody has some sugar attached to their haemoglobin. Those with pre-diabetes and diabetes, however, have more. The HbA1C test measures the percentage of your red blood cells that have sugar-coated haemoglobin.

HbA1c test levels

The glycated hemoglobin (HbA1c) test provides average blood glucose levels for the past 2 to 3 months. The following are the HbA1c test results ranges:

Level	Meaning
Less than 5.7%	Normal range
5.7% to 6.4%	Prediabetes or Risk of hyperglycemia
6.5% or Higher	Diabetes mellitus or Hyperglycemia

What do HbA1C test results look like?

The HbA1C levels are provided as either a percentage or in mmol/mol (which stands for millimoles per mole). A mole is a unit of measurement often used for chemical substances. The higher the percentage, the higher your blood glucose levels are. An Hb1A1C below 5.7% is considered normal; between 5.7% and 6.4% may indicate you are pre-diabetic; and 6.5% or higher can indicate diabetes. In mmol/mol: below 42 corresponds to below 6.0%; 42-47 mmol/mol to 6.0 to 6.4%; and 48 mmol/mol to 6.5% or over.

18. How were the new Election Commissioners selected? What does the law say on the appointment process? Why has the new Act been challenged?

Why in news?

The President has appointed Gyanesh Kumar and Sukhbir Singh Sandhu, both retired IAS officers, as Election Commissioners (ECs) to fill up two vacancies in the three-member Election Commission of India. The two officials are the first to be appointed under the new law governing appointments to the constitutional body, the Chief Election Commissioner and other Election Commissioners (Appointment, Conditions of Service and Term of Office) Act, 2023.

How were the new ECs selected?

In terms of the new law, the two ECs were selected by a three-member Selection Committee, comprising Prime Minister Narendra Modi, Union Home Minister Amit Shah, and the Leader of the Indian National Congress in the Lok Sabha, Adhir Ranjan Chowdhury, as leader of the largest party in the Opposition. They were chosen out of a shortlisted panel of six names. The shortlisting was done by a committee which, according to the Act, is headed by the Union Minister for Law and Justice and includes two officials of the rank of Secretary to the government.

New Election Commissioners Appointed

Gyanesh Kumar
IAS (Retd.) 1988 batch, Kerala Cadre

Sukhbir Singh Sandhu
IAS (Retd.), 1998 batch, Uttarakhand Cadre

What was the process before this?

Article 324 of the Constitution vests the "superintendence, direction and control of elections" in an Election Commission. It also says the EC shall consist of the Chief Election Commissioner and such number of other Election Commissioners, if any, as the President may fix from time to time. This provision was subject to any law made in that behalf by Parliament. However, for nearly 40 years from the adoption of the Constitution, the EC only had a Chief Election Commissioner (CEC). It was not until October 1989 that it became a multi-member body. However, the appointment of two Election Commissioners was rescinded within a short time, that is on January 1, 1990.

A law was enacted in 1991 to fix the conditions of service of the CEC and the ECs, and amended in 1993. However, it did not provide for any appointment process. In the absence of any particular process being laid down by parliamentary law, the President has been appointing the CEC and ECs. The only known process is that the Law Ministry puts up a panel of names to the Prime Minister, who recommends the appointment of one of them as EC to the President. It had become a convention to appoint officials as ECs first and then, on the completion of the tenure of the CEC, the senior EC was elevated as CEC.

What did the SC rule on the process?

In Anoop Baranwal versus Union of India, a five-member Constitution Bench ruled that it was the intention of the makers of the Constitution that the power to appoint the CEC and other ECs was not meant to be given exclusively to the executive and that the power was to be exercised "subject to any law made by Parliament". Noting that no such law was enacted since the inception of the Constitution, the court laid down an interim arrangement for the appointment. This was to operate until Parliament made its own law. The court said the appointments should be made by a three-member committee comprising the Prime Minister, the Leader of the Opposition in the Lok Sabha (or the leader of the party that is largest in the Opposition) and the Chief Justice of India. It was in response to this that Parliament enacted the 2023 Act, which received presidential assent and was notified late in December 2023.

What is the criticism against the Act?

The foremost criticism from those who have challenged the new Act is that it has removed the CJI from the selection panel and has made a Union Minister a member instead. This gives the executive a two-one majority in the three-member committee. The government has argued that the Act does not really remove the CJI from the appointment process, as the inclusion of the CJI was only a stop-gap arrangement put in place until the enactment of a law. The Supreme Court has repeatedly rejected attempts to obtain a stay on the new Act. The petitioners have approached the court again against the appointment of the two ECs. Their primary argument is that the Act violates the main principle in the Constitution Bench judgment — the need to free the appointment process from the executive.

19. Why SC has stayed Govt's 'Fact Check Unit' for now

Why in News?
The Supreme Court recently stayed the operation of the amended Information Technology (IT) Rules, which empowered the government to identify "fake news" on social media platforms through a "Fact Check Unit" (FCU).

The Union Electronics and IT Ministry had notified the FCU on March 20, as a statutory body under the Press Information Bureau with powers to flag what it believes is false information related to the central government and its agencies on social media sites.

The amendment to the IT Rules, 2021, which allowed the Ministry to appoint the FCU, were notified in April 2023. On January 31 this year, a two-judge Bench of the HC gave a split verdict on a challenge to the Rules.

A third judge who was assigned to give an opinion on the split verdict is yet to give his final decision. However, on March 11, the third judge declined to stay the setting up of the FCU — and on March 13, the division Bench said by a 2-1 majority that it would not stay the notification of the FCU.

The amended Rules

The amendment to The Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021 notified in April 2023 did two things: first, they brought in a legal framework for the online gaming eco-system and second, more crucially, introduced a legal mechanism for the government to fact-check online content pertaining to "government business"

Among other things, the Rules made it obligatory on intermediaries like social media platforms "to not to publish, share or host fake, false or misleading information in respect of any business of the Central Government".

The changes raised concern that the FCU will make the government the "sole arbiter of truth" in respect of any business related to itself.

Subsequently, the rules were challenged before the Bombay High Court.

Question before HC

The petitioners, including standup comedian Kunal Kamra; Association of Indian Magazines, Editors Guild of India, news channel TV18 Broadcast Limited, and Bennett, Coleman & Company Limited challenged Rule 3(1)(b)(v) of the IT Rules 2021 as being violative of Article 14, Article 19(1)(a) and (g), and Article 21 of the Constitution, and Section 79 and the Information Technology Act, 2000 (IT Act).

The amendment to Rule 3(1)(b)(v) of the IT Rules 2021 essentially expanded the general term "fake news" to include fake news involving government business.

This provision, when enacted in 2021, referred to "...any information which is patently false or misleading in nature but may reasonably be perceived as a fact". By the 2023 amendment, after the word "nature", the words "or, in respect of any business of the Central Government, is identified as fake or false or misleading by such fact check unit of the Central Government as the Ministry may, by notification published in the Official Gazette, specify" were inserted.

The petitioners argued before the court that this would have a "chilling effect" upon the freedom of speech and expression.

Section 69 of the IT Act empowers the government to issue directions to block public access to any information through any computer resource. The Rules were framed essentially in exercise of this power.

However, no rule-making or legislation-making powers can be exercised by Parliament in a manner that is contrary to Part III of the Constitution, which deals with fundamental rights. The Bombay High Court examined if these Rules were violative of free speech, and were arbitrary in nature.

HC ruling and after

On 31 January, a division Bench comprising delivered a split verdict in the case. While one judge struck down the amended rules, other judge upheld them.

Since a split verdict was delivered, as per rules of the Bombay High Court, the case had to be heard afresh by a third judge whose opinion would create a majority and bring about a 2-1 verdict. On February 7, Bombay HC assigned another judge as the third judge in the case.

However, before beginning a substantial hearing, the third judge had to decide if the Rules were to be stayed. After the central government told the court that the Rules were yet to be notified in the official gazette, the third judge refused to grant an interim stay on the amended Rules.

Thereafter, an appeal was filed before the Supreme Court against the rejection of interim stay. However, just a day before the SC was to hear the appeal against rejection of stay, the Centre notified the 2023 Rules in the official gazette. With Lok Sabha elections less than a month away, the Rules are crucial for the government's engagement with news about "government business".

What the SC said

A Bench headed by Chief Justice of India (CJI) D Y Chandrachud has stayed the amended Rules until the Bombay High Court reaches a final conclusion.

Dictating a short order, the CJI observed that the issue before the court is whether the status quo should be allowed to change when one judge has completely struck down the notification.

Relevance: GS Prelims & Mains Paper II; Governance
Source: Indian Express

20. Kejriwal arrested: What is the Delhi excise policy case, and what is the Delhi CM accused of?

Why in News?

Delhi Chief Minister Arvind Kejriwal was arrested in the Delhi excise policy case, in which he had been issued multiple summons by the Enforcement Directorate (ED). Earlier in the day, the Delhi High Court had refused to grant him interim protection from coercive action.

FOR FIRST TIME, SITTING CM ARRESTED
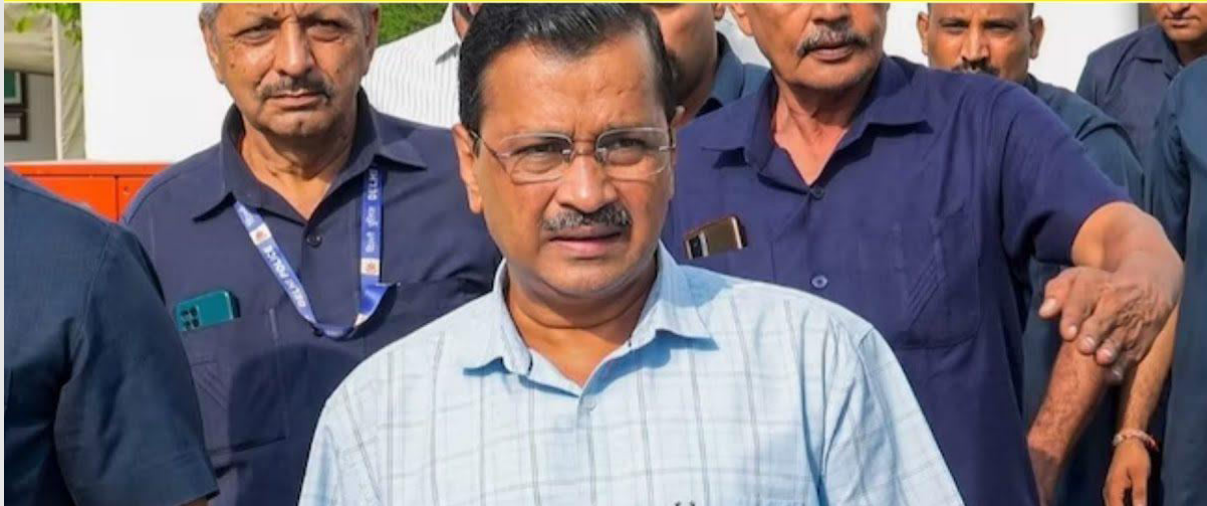
What is the Delhi excise policy case?

Two cases, one by CBI and one on alleged money laundering being investigated by ED, have been registered in relation to the excise policy.

The case arose out of a report submitted by Delhi Chief Secretary Naresh Kumar to Lieutenant Governor (LG) Vinai Kumar Saxena in July 2022, pointing to alleged procedural lapses in the formulation of the policy.

The report said "arbitrary and unilateral decisions" taken by then Delhi Deputy CM Manish Sisodia in his capacity as Excise Minister had resulted in "financial losses to the exchequer" estimated at more than Rs 580 crore.

It alleged that "kickbacks...received by the AAP Delhi government and AAP leaders" from owners and operators of alcohol businesses for preferential treatment such as discounts and extensions in licence fee, waiver on penalties and relief due to disruptions caused by the Covid-19 pandemic, etc. were used to "influence" the Assembly elections held in Punjab and Goa in early 2022. The AAP went on to form the government in Punjab.

This report was referred to the CBI, and led to Sisodia's arrest. Then, once the CBI named Sisodia and 14 other accused in its FIR, including AAP communications in-charge Vijay Nair, the ED told a court in March that the alleged proceeds of crime amounted to more than Rs 292 crore, and that it was necessary to establish the modus operandi.

The ED alleged that the "scam" was to give the wholesale liquor business to private entities and fix a 12% margin, for a 6% kickback. In its first prosecution complaint in November 2021,

the ED said the policy was "formulated with deliberate loopholes" that "promoted cartel formations through the back door" to benefit AAP leaders.

The ED also alleged that AAP leaders received kickbacks to the tune of Rs 100 crore from a group of individuals identified as the "South Group".

Recently, K Kavitha, Bharat Rashtra Samithi (BRS) leader and daughter of former Telangana Chief Minister K Chandrasekhar Rao, was arrested allegedly for being part of this 'South Group'. Others alleged to be part of the group include Ongole MP Magunta Srinivasulu Reddy's son Raghav Magunta, P Sarath Chandra Reddy, son of P V Ramprasad Reddy and co-founder of Hyderabad-based Aurobindo Pharma. According to the ED, this group "secured uninhibited access, undue favours, attained stakes in established wholesale businesses and multiple retail zones (over and above what was allowed in the policy)".

And what are the accusations against Kejriwal?
It was after Kavitha's arrest that the Enforcement Directorate alleged — for the first time — that Chief Minister Arvind Kejriwal was a conspirator in the case, on March 18.

"ED investigation revealed that Ms K Kavitha along with others conspired with the top leaders of AAP including Arvind Kejriwal and Manish Sisodia for getting favours in the Delhi excise policy formulation and implementation. In exchange for these favours, she was involved in paying Rs 100 crore to the leaders of AAP," alleged the ED spokesperson on Monday. "By the acts of corruption and conspiracy in the formulation and implementation of Delhi Excise Policy 2021-22, a continuous stream of illegal funds in the form of kickback from the wholesalers was generated for AAP."

Earlier, in a supplementary prosecution complaint, the ED had alleged that Kejriwal himself spoke to one of the main accused, Sameer Mahendru, over a video call and asked him to continue working with co-accused Vijay Nair whom he referred to as "his boy".

What has Kejriwal said?
Kejriwal has maintained that the ED summonses to him are being sent "at the behest of the BJP".

In the Delhi HC, Senior advocate Abhishek Manu Singhvi, appearing for Kejriwal, said the ED was "attempting, at this stage, to create a non-level playing field" and the summons issued to the AAP convenor was "vague, arbitrary and amount to a fishing and roving inquiry" in as much as it does not disclose the capacity in which he is being summoned – as an individual, a CM or national convenor of AAP.

Relevance: GS Prelims & Mains Paper II; Governance
Source: The Indian Express

21. Archaeological Survey of India will 'delist' some 'lost' monuments. What's happening, and why?

Why in news?

The Archaeological Survey of India (ASI) has decided to delist 18 "centrally protected monuments" because it has assessed that they do not have national importance. These 18 monuments are part of an earlier list of monuments that the ASI had said were "untraceable". Among the monuments that face delisting now are a medieval highway milestone recorded as Kos Minar No.13 at Mujessar village in Haryana, Barakhamba Cemetery in Delhi, Gunner Burkill's tomb in Jhansi district, a cemetery at Gaughat in Lucknow, and the Telia Nala Buddhist ruins in Varanasi. The precise location of these monuments, or their current physical state, is not known.
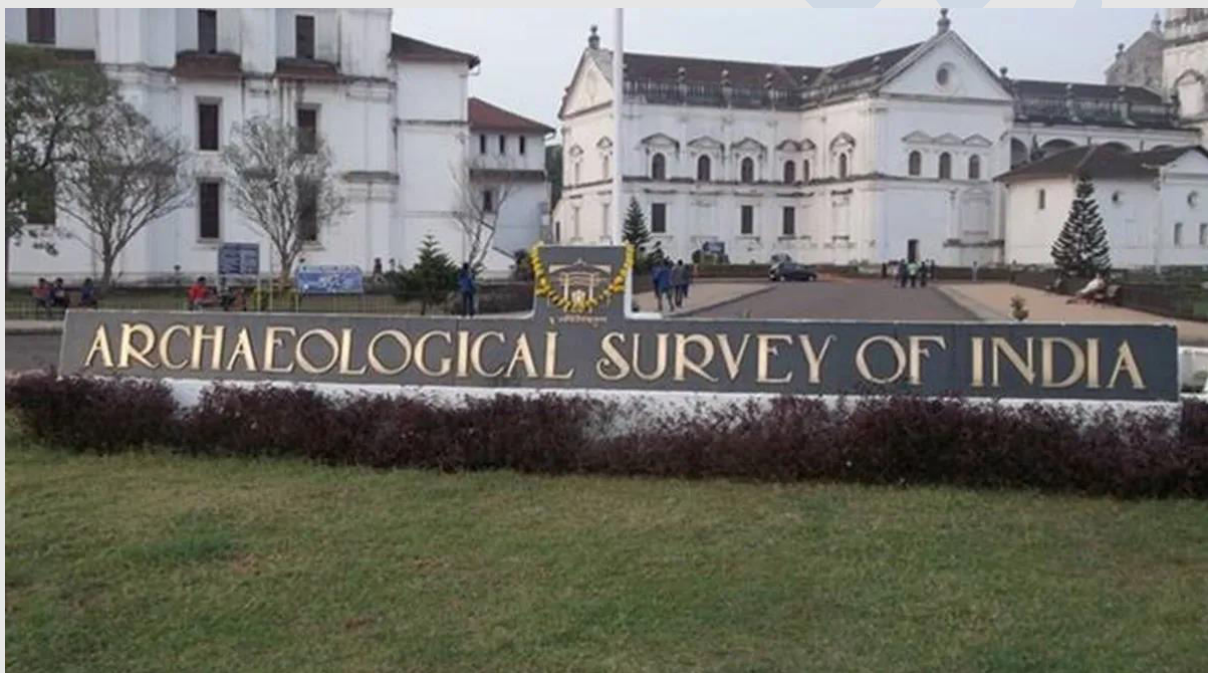
So what exactly does the "delisting" of monuments mean?

The ASI, which works under the Union Ministry of Culture, is responsible for protecting and maintaining certain specific monuments and archaeological sites that have been declared to be of national importance under the relevant provisions of The Ancient Monuments Preservation Act, 1904 and The Ancient Monuments and Archaeological Sites and Remains Act, 1958 (AMASR Act).

Delisting of a monument effectively means it will no longer be conserved, protected, and maintained by the ASI. Under the AMASR Act, any kind of construction-related activity is not allowed around a protected site. Once the monument is delisted, activities related to construction and urbanisation in the area can be carried out in a regular manner.

The list of protected monuments can grow longer or shorter with new listings and delistings. ASI currently has 3,693 monuments under its purview, which will fall to 3,675 once the current delisting exercise is completed in the next few weeks. This is the first such large-scale delisting exercise in several decades.

Section 35 of the AMASR Act says that "If the Central Government is of opinion that any ancient and historical monument or archaeological site and remains declared to be of national importance...has ceased to be of national importance, it may, by notification in the Official Gazette, declare that the ancient and historical monument or archaeological site and remains, as the case may be, has ceased to be of national importance for the purposes of [the AMASR] Act.

The gazette notification for the 18 monuments in question was issued on March 8. There is a two-month window for the public to send in "objections or suggestions".

And what does it mean when the ASI says a monument is "untraceable"?
The AMASR Act protects monuments and sites that are more than 100 years old, including temples, cemeteries, inscriptions, tombs, forts, palaces, step-wells, rock-cut caves, and even objects like cannons and mile pillars ("kos minars") that may be of historical significance.

These sites are scattered across the length and breadth of the country and, over the decades, some, especially the smaller or lesser known ones, have been lost to activities such as urbanisation, encroachments, the construction of dams and reservoirs, or sheer neglect, which has resulted in their falling apart. In some cases, there is no surviving public memory of these monuments, making it difficult to ascertain their physical location.

Under the AMASR Act, the ASI should regularly inspect protected monuments to assess their condition, and to conserve and preserve them. In cases of encroachment, the ASI can file a police complaint, issue a show-cause notice for the removal of the encroachment, and communicate to the local administration the need for demolition of encroachments.

This, however, has not happened with uniform effectiveness. The ASI, which was founded in 1861 after the need for a permanent body to oversee archaeological excavations and conservation was realised, remained largely dysfunctional in the decades that followed.

The bulk of the currently protected monuments were taken under the ASI's wings from the 1920s to the 1950s, but in the decades after Independence, the government chose to spend its meagre resources more on health, education, and infrastructure, rather than focusing on protecting heritage, officials said. The ASI also concentrated more on uncovering new monuments and sites, instead of conserving and protecting existing ones.

How many historical monuments have been lost in this way?
In December 2022, the Ministry of Culture submitted to the Parliamentary Standing Committee on Transport, Tourism and Culture, that 50 of India's 3,693 centrally protected monuments were missing. Fourteen of these monuments had been lost to rapid urbanisation, 12 were

submerged by reservoirs/ dams, and the remaining 24 were untraceable, the Ministry told the Committee.

The Committee was informed that security guards were posted at only 248 of the 3,693 protected monuments. In its report on 'Issues relating to Untraceable Monuments and Protection of Monuments in India', the Committee "noted with dismay that out of the total requirement of 7,000 personnel for the protection of monuments, the government could provide only 2,578 security personnel at 248 locations due to budgetary constraints".

22. ICCC: Integrated farm data dashboard for customised solutions

Why in news?
Earlier this month, Agriculture Minister Arjun Munda inaugurated a Krishi Integrated Command and Control Centre (ICCC) set up at Krishi Bhavan in New Delhi, a big-screen dashboard of all digital innovations in the sector. Officials described the ICCC as a "significant leap forward" in leveraging technology for the advancement of agricultural practices.

What is the Krishi ICCC?
The ICCC is a tech-based solution involving multiple IT applications and platforms, which is designed to help in making informed decisions. The centre is housed in the Ministry of Agriculture & Farmers' Welfare, which is responsible for legislation, policy formation, and implementation of initiatives in the agriculture sector.

The ICCC uses state of the art technologies such as artificial intelligence, remote sensing, and Geographic Information Systems (GIS) to collect and process large amounts of granular data — on temperatures, rainfall, wind speed, crop yields and production estimations — and presents it in graphical format.

What do you get as the visual output?
On eight large, 55-inch LED screens installed at the ICCC, you can see information on crop yields, production, drought situation, cropping patterns (geographic region-wise and year-wise) in map, timeline, and drill-down views.

You can also see the relevant trends (periodic and non-periodic), outliers, and Key Performance Indicators (KPIs), and receive insights, alerts, and feedback on agriculture schemes, programmes, projects, and initiatives.

The ICCC uses platforms including the Krishi Decision Support System (DSS) to collect micro-level data, process it, and present the macro picture.

The ICCC has a contact centre and a helpdesk facility, with the operator's handset capable of being converted into a call centre. If needed, farmer beneficiaries can interact directly with officials or the Minister through video conferencing facilities.

What is the objective of the ICCC?
The ICCC will enable comprehensive monitoring of the farm sector by making available at one place geospatial information received from multiple sources, including remote sensing; plot-level data received through soil survey; weather data from the India Meteorological Department (IMD); sowing data from Digital Crop Survey; farmer- and farm-related data from Krishi MApper, an application for geo-fencing and geo-tagging of land; market intelligence information from the Unified Portal for Agricultural Statistics (UPAg); and yield estimation data from the General Crop Estimation Survey (GCES).

The integrated visualisation of the data will enable quick and efficient decision-making by the The ICCC ecosystem can be linked with the PM-Kisan chatbot going forward.

Can the command and control centre generate individual farmer-specific advisories?
Going forward, the ICCC can create an ecosystem based on which individual farmer-level advisories can be generated through apps like Kisan e-mitra, a chatbot developed for PM-Kisan beneficiaries.

The AI-/ machine learning-based system will identify a farmer through his/ her mobile number or Aadhaar, and match it with the farmer's field information obtain through land records, historical crop sowing information from the crop registry, weather data from IMD, etc. It will then generate a customised advisory in the local language of the farmer. For this, the system will use the Bhashini platform that allows translation into several Indian languages.

PRACTICAL APPLICATIONS
FARMER'S ADVISORY: The ICCC allows visualisation of GIS based soil carbon mapping as well as soil health card data for a particular district together at one place. "This, when visualised with weather-related data from IMD for the selected district, will allow a customised and authentic advisory to be sent to the farmer about the type of crops that can be grown, and water and fertiliser requirements," an official said.

DROUGHT ACTIONS: According to officials, increase or decrease in yield from a specific region (as per GCES data) can be correlated with weather, rainfall, and other information visualised through the Drought Portal, enabling the administration to understand the reason for increase/ decrease in yield and to take decisions proactively.

CROP DIVERSIFICATION: An analysis of crop diversification maps, together with field variability for paddy, will enable decision-makers to identify regions with scope for diversified cropping, so that farmers can be advised accordingly.

FARM DATA REPOSITORY: Krishi Decision Support System (K-DSS), a platform under development, will act as an agriculture data repository. Integrated spatial and non-spatial data

will be superimposed as a layer on the GIS map, and various AI/ ML models would be run on the data. The K-DSS will help in evidence-based, efficient, and data-driven decision-making, and assist in preparing customised advisories for farmers.

VALIDATION OF YIELD: Yield as captured through Krishi MApper can be analysed with the yield generated through GCES application for a plot.

Relevance: GS Prelims & Mains Paper II; Governance
Source: Indian Express

23. Who may vote from home in LS elections? Is this the first time such a facility has been rolled out? Why are activists calling for the rules to be amended?

Why in news?
The Election Commission has extended its 'vote-from-home' facility to persons with disabilities and senior citizens aged 85 and above for the Lok Sabha elections. This move will allow more than 85 lakh senior citizens and 88.4 lakh persons with disabilities to cast their votes through postal ballots.

Who is eligible?
Efforts to make participation inclusive thus far have been contained to the polling site, with a focus on setting up ramps, separate queues, wheelchairs and parking facilities.

The postal ballot-home voting facility was amended to include senior citizens and people with disabilities; the benchmark disability should be not less than 40% of the specified disability as certified by the concerned authority. "Generally the tendency has been that the senior citizens want to participate in the process and walk to the booth. But this time, we have given them options to vote in their homes," Chief Election Commissioner Rajiv Kumar said.

Those who opt for it this year are not eligible to vote directly at the polling station on polling day. The scheme is also "useful" as senior voters may not prefer to step out during the summer heat. The Lok Sabha elections will be held between April 19 and June 1, when spells of heatwaves are likely to hit most parts of the country.

Has it been tried out before?
Vote from home was previously tried out during Assembly elections in select regions, allowing people with disabilities, senior citizens and people affected by COVID-19 to avail the facility. The ECI this year has, however, increased the upper age limit of elderly voters, from 80 to 85 years. The ECI also extended the postal ballot option to media personnel covering 'polling day activities' with authorisation letters from the Election Commission, and those part of essential services such as metros, railways and health care. The option is also open for service voters, such as personnel of the armed forces posted away from their hometowns, Central Armed Police Forces personnel deployed away from home, Central and State police personnel on election duty, and polling personnel and embassy staff on postings.

How may voters avail of the facility?

The key to the process is Form 12D, which is a letter informing the Assistant Returning Officer (ARO) that the person may not be in a position to go to the polling station to vote. The form can be downloaded online from the ECI website or collected from the office of the representative district officer of a parliamentary constituency. The form has to be filled and submitted within five days of notification of the polling date.

Once filed, two polling officials, accompanied by a videographer and a security person, will visit the elector's home and oversee the postal ballot voting process. The voter will receive an intimation about the date and approximate time of visit via SMS or through post. The home voting option will be attempted twice. The polling team will schedule a second visit if the elector fails to be at the given address during the first visit. During the visit, the polling team is expected to follow the protocol under the Conduct of Elections Rules, 1961. Each team of poll officers is required to (a) issue postal ballot to each of the Absentee Voters assigned to it, (b) brief the elector about the procedure to be followed for voting through postal ballot, (c) make sure that the elector votes without anyone influencing his/her choice, and ensure the secrecy of voting. People with blindness or physical infirmity are allowed to nominate a companion and take their assistance while home voting.

Relevance: GS Prelims & Mains Paper II; Governance
Source: The Hindu

24. What are the changes to pilots' rest norms introduced by the Directorate General of Civil Aviation? Why are the airlines unhappy? What are the pilots saying?
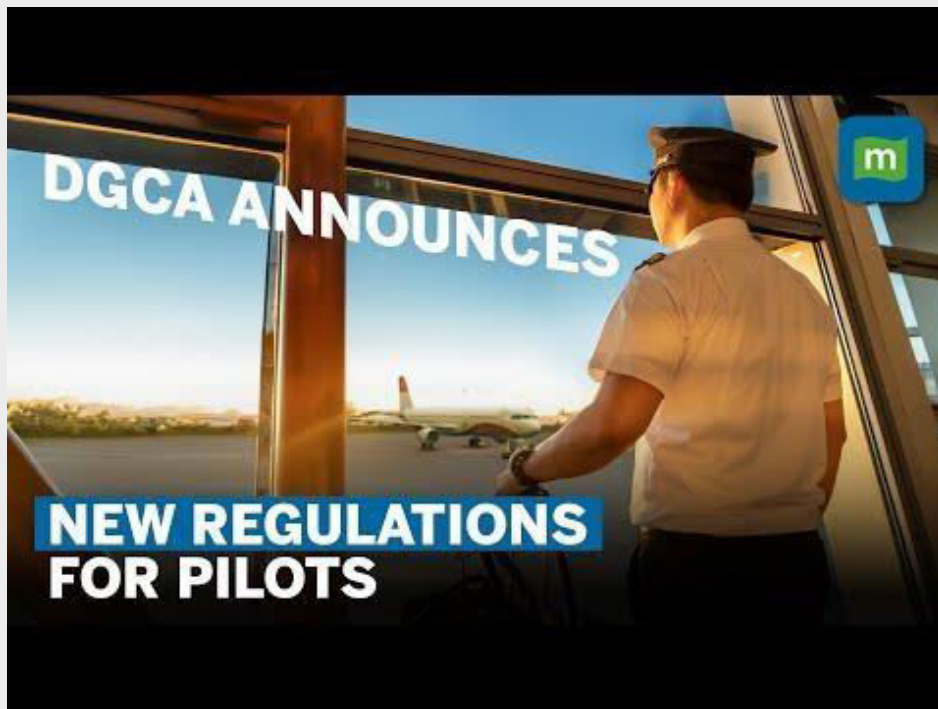
Why in news?
The DirectorateGeneral of Civil Aviation (DGCA)has rejected a request by airlinesto postpone newpilot duty norms, reiterating that the revised schedulewill have to be implemented from June 1. The DGCA had notified the revised rules governing dutyhours and restperiods for pilots inJanuary.

What are the new rules?
The new rules provide enhanced weekly rest for pilots which has gone up from 36 hours to 48 hours. The rules have also reduced night-time flying, which is known to contribute to fatigue and impact alertness levels as sleep is displaced from the optimum part of the circadian rhythm.

Earlier, a pilot could carry out six landings during night-time flying, which has now been reduced to two. The night-time shift has been extended by an hour to 6 a.m, from the earlier midnight to 5 a.m. The maximum flight duty period for flights encroaching night-time has also been reduced from 10 hours to 8 hours.

While pilots have broadly welcomed the changes, their demand for a ban on two consecutive night duties went unheeded. Pilots say that flying a second night without a reset of the circadian rhythm is extremely stressful. Consecutive night duties result in accumulation of sleep debt and an increase in fatigue related impairment.

Pilots also pointed out that airlines are only required to publish the crew roster "sufficiently in advance" and the time frame has not been defined unambiguously. The draft rules placed for stakeholder comments had proposed that rosters be finalised seven days in advance.

Why are the airlines opposed to it?

The Federation of Indian Airlines, FIA, comprising Air India, IndiGo and SpiceJet, wrote to the DGCA in February seeking postponement of the June 1 implementation deadline as it could have "immediate and significant impact to business and customers alike" as airlines would be required to hire "15% to 25% more pilots" when it takes approximately 8-10 months to release a newly inducted pilot for flying.

The FIA warned that the June 1 deadline could result in the cancellation of 15%-20% of flights by most airlines as well as cancellation of some long-haul international flights. In response, the DGCA reiterated that it will stick to the June 1 deadline.

Is fatigue mounting?

In a first, the DGCA has acknowledged that unfortunate instances of pilot deaths in the recent past were "ostensibly" due to punishing schedules and cumulative impact on health and well-being of pilots, which it said was an "urgent wake up call" for the industry. There were at least three such deaths while on duty, including the death of IndiGo pilot, Manoj Balasubramani, who fell unconscious at the boarding gate after reporting for duty to operate a flight from Nagpur to Pune on August 17, 2023. He was rushed to hospital, where he passed away.

Pilots say that not only has flying increased for them in the past five years, a growing route network beyond metros has resulted in tougher combination of flights, which involve more landings and are therefore strenuous. For example, the return leg of an international flight is often combined with an additional domestic flight. There are also more red eye flights to short-haul destinations such as in the Gulf and Singapore. Add to this an uncertainty of roster, where a pilot can be called in for a flight for 4 a.m. with just a 12-hour notice. "Denying a duty in such circumstances can lead to disciplinary proceedings," said a senior pilot of a full-service carrier. Pilots recall Jet Airways days where a printed roster was sacrosanct. There are also rostering malpractices, where pilots are compelled to work beyond their maximum duty hours or provided less rest periods than what is laid down. On March 22, the DGCA imposed a fine of ₹80 lakh on Air India after it discovered lapses during a spot check in January.

How many pilots are registered with DGCA?

Many airlines like Air India and Vistara are already grappling with pilot shortages compared to aircraft strength. As on December 2023, there were a total of 771 aircraft with various Indian airlines and 9,524 commercial pilots registered with the DGCA. Additionally, there were 67 foreign pilots too due to a shortage of commanders on certain aircraft type such as the Boeing 777. India's commercial airlines are likely to nearly double fleet size to 1,400 by fiscal year 2029-30. This will mean airlines will have to add 10,900 additional pilots by 2030, which is nearly 1,600 new pilots a year. Last year, the regulator issued 1,272 commercial pilot licences.

Relevance: GS Prelims & Mains Paper II; Governance
Source: The Hindu

25. When the Supreme Court stepped in against bail conditions imposed by various high courts

Why in News?

The Supreme Court recently ruled that imposing a bail condition that prevents a person from participating in political activities violates their fundamental rights under the Constitution.

In doing so, a bench of Justices BR Gavai and Sandeep Mehta set aside such a condition set by the Orissa High Court in an earlier order for BJP leader Siba Shankar Das.

Justice B.R. Gavai   Justice Sandeep Mehta

First, how bail and bail conditions work

Bail refers to the temporary prison release of a person awaiting trial or an appeal. It is secured by depositing security before a legal authority as a guarantee for his eventual presence in court.

While exercising its discretion to release a person on bail, the court must ensure it acts "judiciously", the Supreme Court observed in 'Khilari vs. State of UP' (2009). It also ruled that the appellate court must record its reasons while granting bail.

Additionally, Section 439 of the CrPC states that a high court or court of session can direct any accused person in custody to be released on bail.

It also allows them to impose any condition that they consider necessary for the purposes of Section 437(3), which lists conditions that can be imposed in cases of offences punishable with seven years or more in prison. These include ensuring the accused doesn't commit a similar offence and that he doesn't threaten persons associated with the case.

What was the Orissa HC order?

In 'Siba Shankar Das @ Pintu vs. State of Odisha' the apex court was dealing with a petition filed by BJP leader and former Berhampur mayor Siba Shankar Das. He challenged an earlier order of the Orissa HC.

On January 18, the HC rejected Das's plea to withdraw a condition imposed on him on August 11, 2022, for granting him bail in a criminal case. The High Court's condition said that "the appellant shall not create any untoward situation in public and shall not be involved in any political activities, directly or indirectly."

Das argued before the HC that as a political person who was earlier elected as the Berhampur Municipal Corporation's mayor, he should be allowed to participate in political activities, given the upcoming general elections.

However, the state government contested Das's plea, arguing that after his release on bail, Das had been involved in new cases and a "murderous attempt" was also made against him, where a bomb was hurled onto his vehicle. It also supplied the court with an affidavit from the local police inspector, objecting to Das's plea and citing two new FIRs registered against him in October 2023.

Observing that the petitioner "is always under a life threat", a bench of Justice B.P. Routray said that lifting the condition "at this juncture, shall in all probability put the administration to enough difficulties." The court also added that Das was allegedly involved in 57 cases earlier. Challenging this order, Das moved the top court.

What did the top court rule?
On March 22, a two-judge bench of the Supreme Court set aside the Orissa HC order, saying that "imposition of such condition would breach the fundamental rights of the appellant and no such conditions could have been imposed." Subsequently, the court said it was quashing and setting aside the condition.

However, this wasn't the first time the top court quashed bail conditions it deemed unreasonable.

Relevance: GS Prelims & Mains Paper II; Governance
Source: The Hindu

26. Travelling with cash during polls? Here are the EC rules to keep in mind

Why in News?
With the Model Code of Conduct (MCC) in force across the country since the announcement of Lok Sabha elections on March 16, law enforcement agencies are on high alert for movement of cash, liquor, jewellery and other freebies that could be used to influence voters.

What are the rules for carrying cash and other items?
The EC's efforts are meant to keep an eye on campaign expenditure by candidates, which is capped at Rs 95 lakh per constituency in bigger states, and Rs 75 lakh per constituency in smaller ones. However, this adversely affects citizens as well.

For Parliamentary Constituencies (PCs)	
Earlier expenditure limit (2014)	Enhanced expenditure limit now
Rs. 70 Lakh	Rs. 95 Lakh
Rs. 54 Lakh	Rs. 75 Lakh

For Assembly Constituencies (ACs)	
Earlier expenditure limit (2014)	Enhanced expenditure limit now
Rs. 28 Lakh	Rs. 40 Lakh
Rs. 20 Lakh	Rs. 28 Lakh

For instance, according to EC instructions, the CISF or police authorities at airports are supposed to "instantaneously report to the Income Tax Department" anyone carrying cash worth more than Rs.10 lakh, or more than 1 kg in bullion. The Income Tax Department then has to "make necessary verification as per the Income Tax Laws and take necessary measures if no satisfactory explanation is given." This means that cash or bullion can be seized till verification is completed, in order to ensure that it is not related to any political party or candidate.

At check-posts controlled by the surveillance teams, the EC makes it clear that "if cash of more than Rs 10 lakh is found in a vehicle, and there is no suspicion of commission of any crime or linkage to any candidate, agent or party functionary, then the SST shall not seize the cash, and [simply] pass on the information to the Income-Tax authority, for necessary action under Income Tax Laws."

However, if a vehicle carrying a candidate, or his/her agent or party worker is found with over Rs 50,000 in cash or drugs, liquor, arms, or gift items worth over Rs.10,000, then the cash or other items will be seized. If during checking, there is any suspicion of a crime, the seizure will be done under the Criminal Procedure Code (CrPC) and an FIR will be filed within 24 hours.

When it comes to carrying liquor across state borders, the excise laws of the respective state apply. For instance, some states allow two bottles of sealed liquor to be carried in.

What happens after a seizure?
In case any cash or other items are seized, authorities are meant to return them if they are not related to any candidate or a crime.

"After seizure, the seized amount shall be deposited in such manner as directed by the Court and a copy of seizure of cash, in excess of Rs 10 lacs shall be forwarded to the Income Tax authority, engaged for the purpose," the EC says.

A district-level committee will look at grievances, "in order to avoid inconvenience to the public and genuine persons". The Committee, comprising the district election office's nodal officer for expenditure monitoring, and the district treasury officer, shall suo-motu examine each case of seizure where no FIR/complaint has been filed, or where the seizure is not linked with any candidate, political party or election campaign. Moreover, it shall take immediate steps to return any cash seized, as per SoP given by the EC.

Relevance: GS Prelims & Mains Paper II; Governance
Source: Indian Express

27. How do internet shutdowns affect the daily lives of citizens, particularly in regions where they are frequently imposed? What are the primary reasons cited by the Indian government for imposing internet shutdowns?

Why in news?
For five straight years, India has topped the global list of countries imposing internet bans, with about 60% of all blackouts recorded in the world, between 2016 and 2022 having been in India. State imposed shutdowns in the last decade have cited national security and threats to public order. However, rights groups have argued that these shutdowns also violate court directives.

Internet shutdowns
The Indian government imposed a total of 780 shutdowns between January 1, 2014, and December 31, 2023, according to data collected by the Software Freedom Law Centre (SFLC). Shutdowns flared up during the protests against the Citizenship Amendment Act in 2019, the abrogation of Article 370 in 2019, and the introduction of Farm Bills in 2020. Data shows India shut down the internet for over 7,000 hours in 2023.

Indian States and Union Territories can impose an internet shutdown only in case of a "public emergency" or in the interest of "public safety", according to the Indian Telegraph Act. However, the law does not define what qualifies as an emergency or safety issue. The Supreme Court, in the landmark Anuradha Bhasin v. Union of India case, reiterated that internet shutdowns violate fundamental rights to freedom of expression and shutdowns lasting indefinitely are unconstitutional. Moreover, Courts have asked governments to make shutdown orders public, a provision poorly complied with, experts have noted.

British-era law
Regionally, Jammu and Kashmir saw the highest number of shutdowns — at 433 — in the last 12 years. The longest blackout in 2023 took place in Manipur from May to December, amid ethnic clashes.

Between 2015 and 2022, more than 55,000 websites were blocked, according to SFLC data. On social media, almost 30,000 social media URLs (including accounts and posts) were blocked between 2018 and 2022, with the majority of requests sent to X.

A commonly cited reason for blocking websites is the escalating threat of cybercrime. As compared to 5,693 cases in 2013, India recorded more than 65,000 cases last year. Cases have risen by almost 434% between 2016 and 2022, according to the National Crime Records Bureau.

India and global trends

Global Internet freedom has declined for the 13th consecutive year, and the environment for human rights online has deteriorated in 29 countries, according to the latest Freedom House report. India's ranking has hovered around the same benchmark in the last three years. This is a dip from 2016 and 2017, when India scored 59 points, to 50 points in 2023.

Relevance: GS Prelims & Mains Paper II; Governance
Source: The Hindu

28. Understanding the Impact of AI in the 2024 Elections

Why in news?

In the unfolding drama of India's 2024 election season, a new player has emerged: artificial intelligence (AI). With the rise of deepfakes – AI-generated videos and images – questions about their influence on electoral integrity and the democratic process have come to the forefront.

The Rise of Deepfakes in Political Messaging
Deepfakes have become increasingly prevalent in political messaging. From Arvind Kejriwal's message delivered through his wife to M.K. Stalin's synthetic appearances alongside his late father, M. Karunanidhi, deepfakes are reshaping the landscape of political communication.

What's concerning is not just their proliferation, but also their believability. AI technology has advanced to the point where these fake videos and images are indistinguishable from reality, making it easier to manipulate public perception and potentially sway electoral outcomes.

Government Intervention and Industry Response

Recognizing the potential threats posed by deepfakes, the Indian government has taken steps to regulate AI usage in political contexts. The Ministry of Electronics and IT issued advisories to AI companies, urging them to ensure transparency and accountability in their technologies.

However, these advisories have sparked controversy, with some AI players pushing back against what they perceive as government overreach. This tension highlights the complex relationship between technology, regulation, and democracy.

Meanwhile, in response to these developments, ethical AI initiatives have emerged. Start-up founders like Senthil Nayagam are leading efforts to promote responsible AI use in politics through initiatives like the Ethical AI Coalition Manifesto. These efforts aim to establish guidelines for AI usage that prioritize democratic values and electoral integrity.

Diverse Applications of AI in Political Campaigns

While deepfakes dominate the conversation around AI in politics, there are other, less controversial applications of AI in political campaigns. Personalized phone calls and targeted messaging are examples of AI technologies being used to engage voters in innovative ways.

For instance, Divyendra Singh Jadoun's firm specializes in creating "ethical" AI content for political parties, including authorized translations and interactive chatbots. These applications demonstrate the potential of AI to enhance political communication without resorting to deception or manipulation.

Assessment of AI Impact on Elections

Amidst concerns about the influence of AI on elections, experts offer varying perspectives on its potential impact. Some emphasize that while AI presents new challenges, traditional forms of misinformation remain prevalent. Others highlight the broader challenges of automated content distribution and micro-targeting.

Political observers closely monitor the strategies adopted by parties, particularly the BJP, known for its early adoption of technology in elections. The BJP's use of social media and digital campaigning serves as a case study for how AI technologies are reshaping electoral strategies.

Future Perspectives on AI in Digital Campaigning

As the 2024 elections unfold, the role of AI in politics will continue to evolve. Calls for shared principles and ethical guidelines underscore the need for a collective approach to regulating AI in political contexts.

Ultimately, the 2024 elections serve as a pivotal moment in understanding the impact of AI on democracy. How political parties navigate the opportunities and challenges presented by AI will shape the future of electoral campaigning and democratic governance.

Relevance: GS Prelims & Mains Paper II; Governance
Source: The Hindu

## 29. What is the Punjab-Himachal dispute over the Shanan hydropower project

Why in News?

The Centre ordered that status quo be maintained on the Shanan hydropower project, over which Punjab and Himachal Pradesh have made competing claims. Punjab has moved the Supreme Court over the issue.

What is the issue?
The British-era 110-MW hydel project, situated at Jogindernagar in Mandi district, was leased to Punjab in 1925. The lease agreement was signed between the then ruler of Mandi, Raja Joginder Bahadur, and Col BC Batty, a British representative and Chief Engineer of Punjab. The 99-year-old lease came to an end on March 2.

In the past few years, Himachal has contended that the project should stay with it once the lease ends. State Chief Minister Sukhvinder Sukhu had stated they would not allow Punjab to stake claim on the project after the lease period. He had written to his Punjab counterpart Bhagwant Mann last year and also taken up the issue with the Union ministry of power.
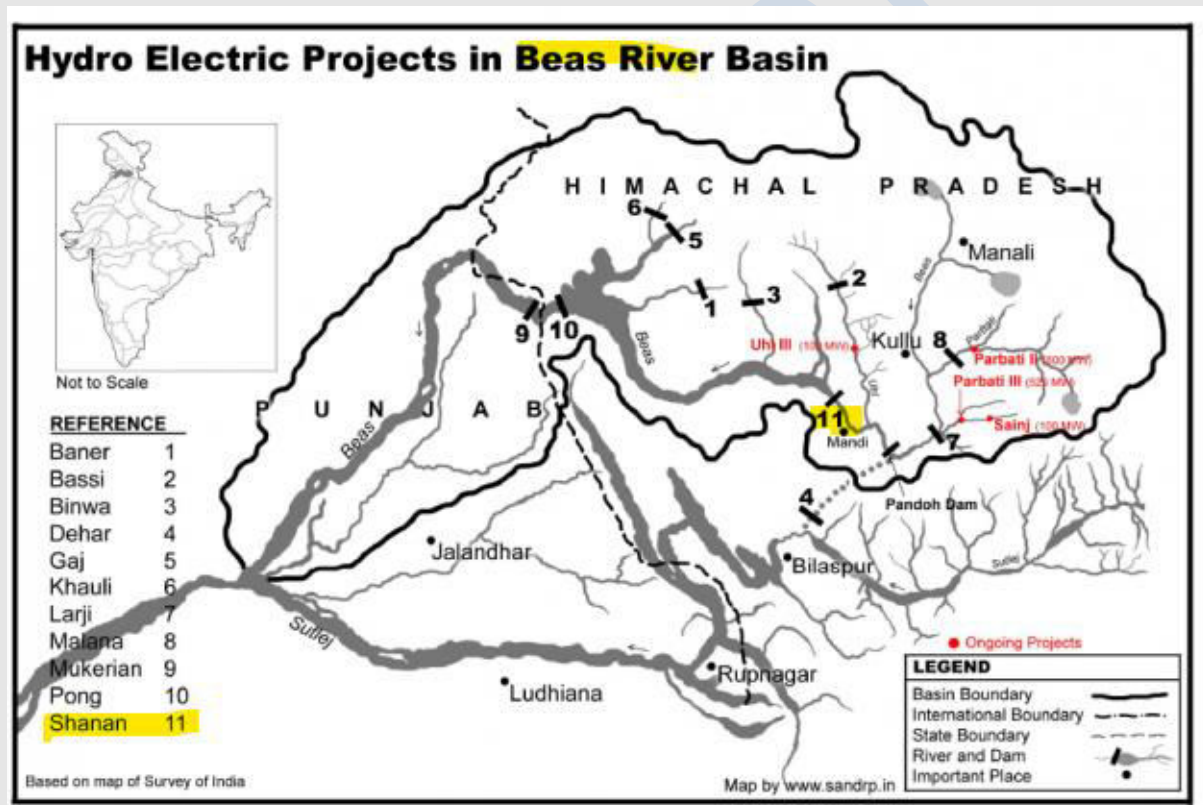
What claims does Punjab have over the Shanan project?
The project used to feed the undivided Punjab and Delhi before Independence. After partition, supply to Lahore was discontinued and its transmission line was stopped at Verka village in Amritsar.

During the reorganisation of states in 1966, the hydel project was given to Punjab, as Himachal Pradesh was then a Union Territory. It was allocated to the state by a central notification issued on May 1, 1967 by the Union ministry of irrigation and power. This stated that Punjab's legal

control over the project was under the provisions of the Punjab Reorganisation Act, 1966 read along with the 1967 notification.

The Himachal government has alleged that the project is in a poor condition as Punjab is not repairing or maintaining it.

What did Punjab say in the SC plea?
In its suit in the SC, Punjab has contended that it is the owner and is in lawful possession of the Shanan Power House Project, with all assets currently under formative control of the state government through the Punjab State Power Corporation Ltd (PSPCL).

The government has sought a "permanent Prohibitory Injunction" restraining the Himachal Pradesh government from disturbing the "lawful peaceful possession and smooth functioning" of the project. The state has also made the Centre a party.

What has the Centre done?
A day before the 99-year-old lease was to come to an end, the Centre ordered status quo on the project as an interim measure to keep the project working.

The orders have clearly stated that "The issuance of this order is entirely in the nature of the interim measure and shall not be treated as a basis of any claim or interest and parties are expected to proceed further on all matters concerning the settlement of the dispute in such manner as they may deem fit and within such legal framework as may be appropriate."

Relevance: GS Prelims
Source: The Indian Express

Bilateral Relations and International Organizations

### 1. Agaléga airstrip inagurated: Mauritius, Maldives, and India

Why in news?
Earlier this week, the first team of Indian "technical personnel" reached the Maldives to take charge of one of the three aviation platforms stationed in the country. They will replace Indian military personnel whose first batch is required to leave the islands by March 10.

Airstrip and a jetty on Agaléga
Recently, Prime Minister Narendra Modi and Prime Minister Pravind Jugnauth of Mauritius jointly inaugurated an airstrip and a jetty that India has built on Agaléga, a two-island Mauritian dependency 1,100 km to the north of Port Louis and 2,500 km southwest of Malé.

As Indian Ocean outposts, Mauritius and the Maldives have great strategic significance for India. New Delhi's maritime security and strategic imperatives in the Indian Ocean are linked to the presence and increased activities of China in the region.
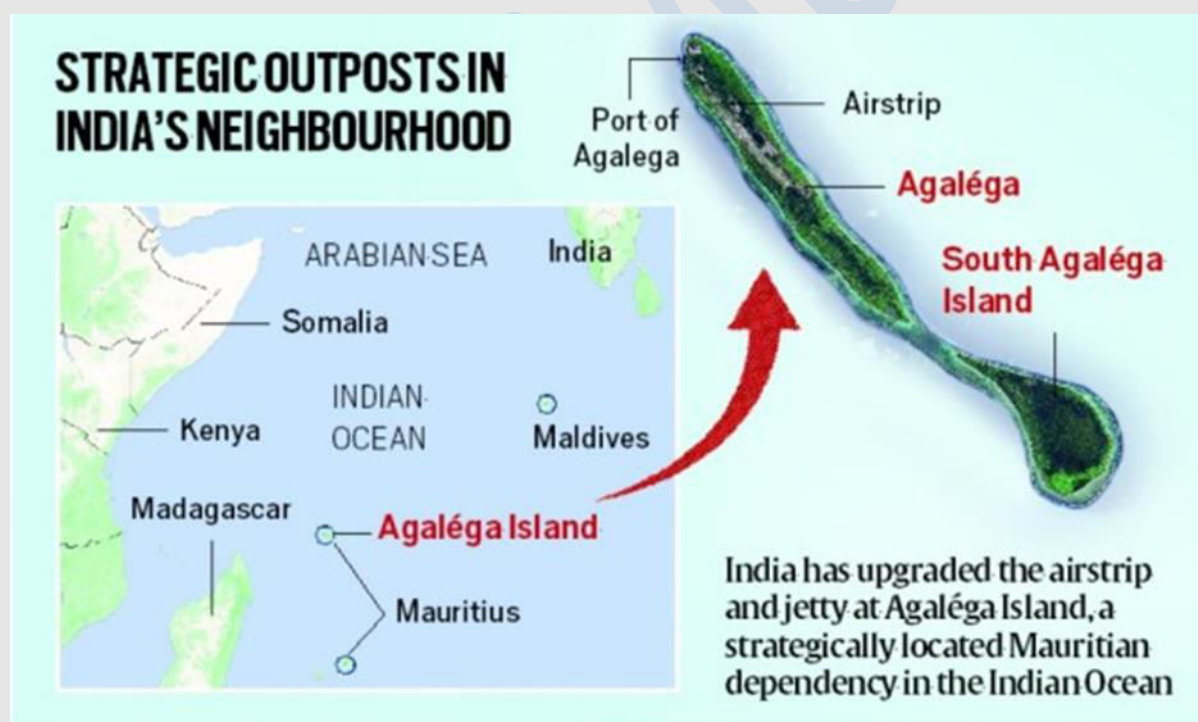
The Maldives case
Soon after coming to power in November 2023, Mohamed Muizzu, the pro-China President of the Maldives, requested India to withdraw its military personnel from his country. Muizzu had defeated the incumbent Ibrahim Mohamed Solih in the presidential election on the "India Out" plank.

The Maldives defence ministry said the first team of Indian civilians had arrived, and would take charge of the operation of a helicopter in Addu, the country's southernmost atoll. The two countries had agreed on February 2 that India would pull out 80-odd military personnel stationed in the Maldives between March 10 and May 10.

The Indian Ministry of External Affairs had said that the two helicopters and a Dornier aircraft in the Maldives would be operated by "competent Indian technical personnel" who would replace the "present personnel".

The Mauritius case
Following Prime Minister Modi's visit to Mauritius in March 2015, India signed a Memorandum of Understanding for the "improvement in sea and air transportation facilities" at Agaléga island.

At the inauguration of the new airstrip and jetty, Prime Minister Jugnauth recalled that several attempts to upgrade the airstrip on the 70-sq-km island since 2003 had not been successful. He said that India was committed to assisting his country, and "deplored" the "India-bashing campaign" by "ill-minded persons in and outside Mauritius".

The presence of India would lead to more effective monitoring of Mauritius' vast 2.3 million sq km Exclusive Economic Zone, and equip it to better counter piracy, terrorism, narcotics and human trafficking, and illegal and unregulated fishing, Prime Minister Jugnauth said.

Relevance: GS Prelims & Mains Paper II; Bilateral Relations
Source: Indian Express

2. What is grey zone warfare, mentioned by India's Chief of Defence Staff recently?

Why in News?
On the last day of the 2024 Raisina Dialogue (February 24), India's Chief of Defence Staff General Anil Chauhan said that "grey zone warfare" is the latest in informal warfare.

What does grey zone warfare mean?
Grey zone warfare generally means a middle, unclear space that exists between direct conflict and peace in international relations.

A multitude of activities fall into Grey zone — from nefarious economic activities, influence operations, and cyberattacks to mercenary operations, assassinations, and disinformation campaigns." Other experts include economic actions too, such as debt traps and economic sanctions.

What grey zone warfare looks like

Experts from the US and Europe have characterised certain Russian and Chinese actions of late as examples of grey zone warfare. It includes the Chinese military's presence in the South China Sea.
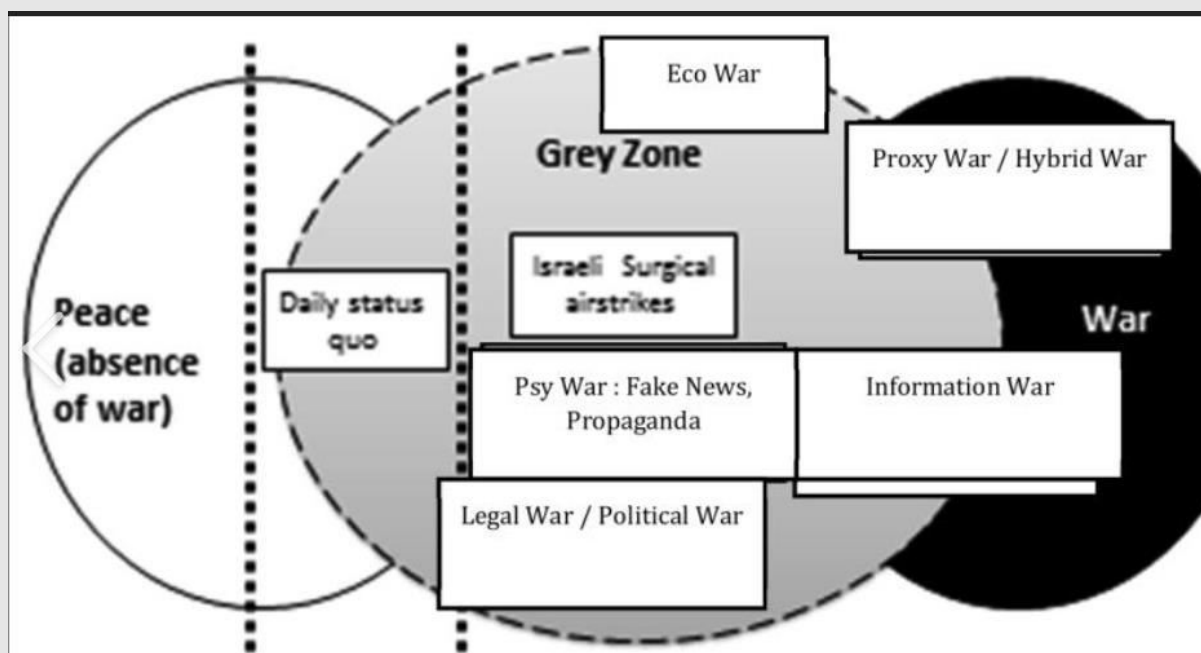
The Philippines is one of the countries which has challenged China's claims, extending over around 80 per cent of the region. In December 2023, it termed the presence of more than 135 Chinese maritime militia vessels near a disputed reef as "illegal".

It accused China of firing water cannons at its boats and ramming into others, while the Chinese coast guard blamed the Philippines for hitting Chinese boats.

Another example can be that, "Taiwan has complained for four years of stepped-up Chinese military action, such as fighters regularly flying over the strait as part of a 'grey zone' strategy to wear down Taiwan with activities that stop short of a full-blown conflict."

In a paper from the foreign policy research institute Pacific Forum, titled 'The Gray Zone Issue: Implications for US-China Relations', a researcher argued that the US has also engaged in similar tactics. These include its economic sanctions against China and imposition of duties on Chinese imports to the US, along with maritime reconnaissance.

Why is grey zone warfare seen as a separate category of action?
Firstly, the challenges that grey zone warfare poses differ from those of an open conflict. Here, action is often covert or indirect, meaning a country's response needs to be appropriate in terms of its scale.

Relevance: GS Prelims & Mains Paper II; Bilateral Relations
Source: The Indian Express

Why in News?
In a global first, France inscribed the guaranteed right to abortion in its constitution on March 8 sending a powerful message of solidarity with women's rights on International Women's Day. The move comes after a rollback of abortion rights in the U.S. in recent times, especially the U.S. Supreme Court's decision in 2022 to overturn a 50-year-old ruling in Roe versus Wade.

What is the reform's legislative history?
The amendment had already been passed by the National Assembly in January and by the Senate last week. However, final approval by parliamentarians at a joint session was needed to effect constitutional change. During the voting session, out of the 902 legislators, 780 voted in favour of the reform, 72 voted against it and 50 abstained.

Abortion, although legal in France since 1975, will now be a "guaranteed freedom" for women. Although rare, amending the constitution is not without precedent in France. The French constitution has been modified nearly 25 times since it was adopted in 1958. The last instance was in 2008 when Parliament was awarded more powers and presidential tenure was limited to a maximum of two consecutive five-year terms in office.

What about other European countries?
Abortion is currently accessible in more than 40 European nations, but some countries are seeing increased efforts to limit access to the procedure. In September 2022, Hungary's far-right government made it obligatory for women to listen to the pulse of the foetus, sometimes called the "foetal heartbeat," before they can access a safe abortion.

Poland, which has some of the most stringent abortion laws in Europe, allows termination only in the event of rape, incest or a threat to the mother's health or life. Restrictions were further

tightened in 2020 when the country's top court ruled that abortions on the grounds of foetal defects were unconstitutional.

The U.K. permits abortion up to 24 weeks of pregnancy if it is approved by two doctors. Delayed abortions are allowed only if there exists a danger to the mother's life. However, women who undergo abortions after 24 weeks can be prosecuted under the Offences Against the Person Act, 1861.

Italy resisted Vatican pressure and legalised abortion in 1978 by allowing women to terminate pregnancies up to 12 weeks or later if their health or life was endangered. However, the law allows medical practitioners to register as "conscientious objectors," thereby making access to the procedure extremely difficult.

The French initiative could, however, embolden efforts to add abortion to the European Charter of Fundamental Rights.

What is India's stance on abortion?
India implemented the Medical Termination of Pregnancy (MTP) Act in 1971 to allow licensed medical professionals to perform abortions under specific conditions as long as the pregnancy did not exceed 20 weeks. The Act was further amended in 2021 to permit abortions up to 24 weeks for certain cases.

The opinion of only one registered medical practitioner will be required for the abortion of a foetus up to 20 weeks of gestation. If a pregnancy is 20-24 weeks, the right to seek abortion is determined by two registered medical practitioners but only under certain categories of forced pregnancies, including statutory rape in case of minors or sexual assault; women with disabilities; or when there is a change in the marital status of the woman during pregnancy. After 24 weeks, the Act requires a State-level medical board to be set up in "approved facilities", which may "allow or deny termination of pregnancy" only if there is substantial foetal abnormality.

Relevance: GS Prelims &Mains Paper II; International Issues
Source: The Hindu

4. Amid Nepal's continuing political turmoil, confidence vote win for PM Prachanda, the task for India

Why in news?
Nepal's Prime Minister Pushpa Kamal Dahal Prachanda won a vote of confidence in the 275-member lower house of Parliament last week, securing the support of 157 of the 268 MPs who were present.

The trust vote, the third won by Prachanda in a little over a year, took place after the Prime Minister broke his party's alliance with the Nepali Congress led by Sher Bahadur Deuba, and

forged a new alliance with K P Sharma Oli's Communist Party of Nepal (Unified Marxist-Leninist).

Under Nepal's constitution, the Prime Minister must seek a vote of confidence after an ally withdraws support to the ruling coalition. The Nepali Congress, with 89 MPs, is the largest party in Parliament, followed by Oli's CPN-UML (79) and Prachanda's CPN-MC (30).

Politics of convenience

Prachanda, 69, took oath for the third time on December 26, 2022 (he had been Prime Minister earlier in 2008-09 and 2016-17), and won 268 votes in the floor test of January 10, 2023 after receiving support from almost all parties, including both the Nepali Congress and the CPN-UML.

However, he had to seek a second vote on March 20, 2023 after CPN-UML and the monarchist Rashtriya Prajatantra Party withdrew support over Prachanda's backing for Ramchandra Paudel of the Nepali Congress to be President. Deuba supported Prachanda in the second trust vote, and the Nepali Congress joined the government.

On March 4 this year, Prachanda dumped Deuba and went back to Oli, which triggered the vote in Parliament.

Prachanda, who led Nepal's Maoist insurgency that caused 17,000 deaths between 1996 and 2006, has proven himself to be a consummate survivor in the years after he joined the mainstream. Even though support for him in Parliament has declined from 268 in January 2023 to 172 two months later to 157 now with only 32 votes from his own party, he has clung on to

power — demonstrating a political flexibility that provoked Deuba to denounce him as "dhokhebaaz (betrayer)".

Main Political Leaders
Over the last decade, Prachanda, Deuba, and Oli have been the leading political actors in Nepal, which has had 13 governments since 2008, the year in which the country's 239-year-old monarchy was abolished and a republic was proclaimed.

Concern for India
The extraordinary political instability in Nepal is of concern to India, where Prachanda's moves are being watched with a mix of caution and admiration. However, while Prachanda retains significant goodwill in New Delhi, his now partner in government, Oli, does not.

The actions and statements by Oli in 2015 during the drafting of the Nepalese constitution, which led to protests and the infamous border blockade, had caused a fair bit of bitterness with Indian government. Oli, who was Prime Minister then, portrayed India as the neighbourhood bully in his country.

Indo-Nepal Relations
Politicians in Nepal have often described the country as being "India-locked", meaning it needs India for access to ports — a fact of geography that Indian diplomats prefer to frame as being "India-open". New Delhi has sought to project itself as a benevolent "elder brother" to Nepal.

The Indian foreign policy establishment points out that India is Nepal's largest trade partner, with bilateral trade crossing $7 billion in FY 2019-20, and that India provides transit for almost all of Nepal's third country trade. Indian exports to Nepal have grown more than eight times over the past decade, while exports from Nepal have almost doubled.

During the Covid-19 pandemic, India provided assistance of more than $7 million to Nepal, which included the supply of more than 23 tonnes of medicines and medical equipment, more than 9.5 million doses of vaccines, and a medical oxygen plant.

About 8 million Nepalese citizens live and work in India, and some 6 lakh Indians live in Nepal. Indians are about 30% of foreign tourists in Nepal. The bilateral remittance flow is estimated at $3 billion from Nepal to India, and $1 billion in the opposite direction. Cooperation in power, water, and infrastructure has been a major element of India's diplomatic toolkit with regard to Nepal.

India vs China, in Nepal
Nepal is sandwiched between the two Asian giants, and the Nepalese political leadership, including the country's former monarchs, has long sought to play the China card to manage the relationship with India. China has been pouring aid and investment in infrastructure to wean Kathmandu away from New Delhi. Nepalese imports from China almost tripled from (Indian) Rs 49.5 billion in 2013-14 to Rs 138.75 billion ($1.67 billion) in 2022-23.

With Oli, who has clear China leanings, back in government in Kathmandu, New Delhi would be keenly watching the expected efforts by Beijing to play a more active and influential role in Nepal's domestic affairs.

5. Vladimir Putin won the Russian elections with 87% of the vote

Why in News?
Russian President Vladimir Putin, 71, won the recent Presidential elections by securing more than 87 per cent of the votes. With a six-year term set to follow, he will become Russia's longest-serving leader in more than 200 years.

Global reactions
Prime Minister Narendra Modi congratulated Putin on Monday. "Look forward to working together to further strengthen the time-tested Special & Privileged Strategic Partnership between India and Russia in the years to come," he said in a post on X.

Leaders of China and North Korea also congratulated the Russian President. The United States, meanwhile, denounced the polls. A White House National Security Council spokesperson said, "The elections are obviously not free nor fair given how Mr. Putin has imprisoned political opponents and prevented others from running against him."

About Putin

Vladimir Vladimirovich Putin (born 7 October 1952) is a Russian politician and former intelligence officer who is the president of Russia. Putin has held continuous positions as president or prime minister since 1999: as prime minister from 1999 to 2000 and from 2008 to 2012, and as president from 2000 to 2008 and since 2012. He is the longest-serving Russian or Soviet leader since Joseph Stalin.

Putin worked as a KGB foreign intelligence officer for 16 years, rising to the rank of lieutenant colonel before resigning in 1991 to begin a political career in Saint Petersburg. In 1996, he moved to Moscow to join the administration of President Boris Yeltsin. He briefly served as the director of the Federal Security Service (FSB) and then as secretary of the Security Council of Russia before being appointed prime minister in August 1999.

Following Yeltsin's resignation, Putin became acting president and, in less than four months, was elected to his first term as president. He was subsequently reelected in 2004. Due to constitutional limitations of two consecutive presidential terms, Putin served as prime minister again from 2008 to 2012 under Dmitry Medvedev. He returned to the presidency in 2012, following an election marked by allegations of fraud and protests, and was reelected in 2018.

Relevance: GS Prelims & Mains Paper II; International Issues
Source: Indian Express

6. Who are the Majeed Brigade, the Baloch militants who carried out Gwadar attack?

Why in news?
The Majeed Brigade of the separatist group Baloch Liberation Army (BLA) has claimed responsibility on a complex outside Pakistan's strategic Gwadar Port. Pakistan has said eight militants and two security personnel were killed in the attack; the BLA has, however, claimed to have killed 25 security personnel.

The BLA is the most prominent of the many separatist groups in Pakistan's Balochistan province. The Majeed Brigade, which has been active since 2011, is the BLA's dedicated suicide squad. The unit is named after two brothers, both of whom were called Majeed Langove.

The Balochistan context
Balochistan, in Pakistan's southwest, is the country's largest and most sparsely populated province. It has oil reserves and abundant natural resources, but the ethnic Baloch are Pakistan's poorest and most under-represented people.

At the time of Partition, Balochistan comprised multiple chiefdoms owing allegiance to the British. Ahmed Yar Khan, the chief of Kalat, was the most powerful of these tribal chiefs, and hoped to secure an independent state for his people. However, he was forced to accede in 1948, after Pakistan invaded Kalat.

Map showing Baloch areas in Pakistan and Iran.

This triggered an insurgency which remains ongoing, fuelled by persisting economic disaffection, political disenfranchisement, and repression by the Pakistani state.

In many ways, the China-backed Gwadar Port is a symbol of the economic injustice faced by the Baloch — despite rampant unemployment in the province, engineers and technical specialists were hired from Punjab, Sindh, and even China.

In recent years, Baloch militants have repeatedly targeted both Gwadar and Chinese nationals in the country.

Majeed Sr and Bhutto
In May 1972, the National Awami Party (NAP) came to power in Balochistan. Nationally, the NAP sat in opposition to Prime Minister Zulfiqar Ali Bhutto's Pakistan Peoples' Party (PPP). The NAP had long advocated for greater regional autonomy in Pakistan, and it was emboldened by the secession of Bangladesh in 1971.

But Bhutto, chafing from the humiliation of Pakistan's defeat to India, was unwilling to grant any major concessions. From the beginning of the NAP's term in the provincial government, Bhutto attempted to undermine its working, using the office of the governor and the bureaucracy of Balochistan, which remained under the control of the Pakistan central government.

Meanwhile, the more radical Baloch nationalists continued the insurgency, which created a serious law and order situation in the province.

After a cache of arms supposedly meant for insurgents was discovered, Bhutto dismissed the NAP government in February 1973. This led to both the insurgency and the Pakistani state repression becoming worse in Balochistan. Between 1973 and 1977, thousands of fighters and military personnel were killed in the fighting, and there were reports of mass atrocities against the Baloch by Pakistani forces.

It is in this context that Majeed Langove Senior, then a young Baloch man, decided to assassinate Bhutto. On August 2, 1974, as Bhutto arrived in Quetta to attend a public gathering, Majeed Senior waited atop a tree, a grenade in hand. He had no plans to escape, and was most certainly going to lose his life in his bid to kill Bhutto.

And he did — even before he had a chance to kill the Pakistani leader. The grenade burst in Majeed Senior's hand as he waited for Bhutto's motorcade, killing him instantly.

Jr's sacrifice, Majeed Brigade
The death of Majeed Senior was mythologised for posterity by the actions of his younger brother, Majeed Langove Junior, who was born two years after Senior was killed.

On March 17, 2010, Pakistani forces surrounded a house hosting a number of Baloch militants in Quetta. One man — Junior — decided to put up a fight, and buy time for his comrades to exit. After an hour's resistance, Junior was killed.

Majeed Junior's death was mourned by nationalists across Balochistan. After it became widely known that he was the younger brother of Senior, who too had given his life for the cause of Balochi freedom, the Majeed Langove brothers were raised to near-mythical status.

When Aslam Achu, a BLA leader, decided to establish a suicide squad, the name 'Majeed' was chosen for it.

Relevance: GS Prelims & Mains Paper II; International Issues
Source: Indian Express

7. INDIA - MOZAMBIQUE - TANZANIA TRILATERAL EXERCISE IMT TRILAT- 2024

Why in news?
The second edition of India Mozambique Tanzania (IMT) Tri Lateral (TRILAT) Exercise, a joint maritime exercise is scheduled from 21-29 Mar 24. The first edition of IMT TRILAT exercise was conducted in Oct 22.

The current edition of the exercise is planned in two phases. As part of the harbour phase scheduled from 21-24 Mar 24, Naval ships Tir and Sujata will engage with the respective Navies at the ports of Zanzibar (Tanzania) and Maputo (Mozambique). The sea phase of the exercise is scheduled from 24-27 Mar 24 covering practical aspects of countering asymmetric threats, Visit Board Search and Seizure procedures, boat handling, manoeuvres and firing exercise. A joint EEZ surveillance is also planned during the sea phase.

Relevance: GS Prelims; Bilateral Relations
Source: Indian Express

8. Why Pakistan's 'piracy' of Indian basmati rice varieties is concerning

Why in news?
Scientists at the Indian Agricultural Research Institute (IARI) and exporters have red-flagged the "illegal" cultivation of its improved basmati rice varieties in Pakistan. The issue came to the fore after the emergence of promotional YouTube videos, featuring recently-released IARI varieties, by Pakistani seed firms in places such as Multan, Bahawalnagar and Hafizabad.

The threat relates to the alleged seed piracy and unlawful cultivation in Pakistan of improved high-yielding varieties of basmati rice developed by IARI.

What is so special about the IARI-bred varieties?
Traditional tall basmati varieties — the likes of Taraori (HBC-19), Dehraduni (Type-3), CSR-30 and Basmati-370 — were low-yielding, producing barely 10 quintals of paddy (rice with husk) per acre over 155-160 days from nursery sowing to harvesting. IARI varieties, having shorter plant heights, yield more grain, and in less number of days.

The first IARI variety — PB-1, released for commercial cultivation in 1989 — yielded 25-26 quintals/acre and matured in 135-140 days.

PB-1121, released in 2003, yielded less (20-21 quintals) with slightly longer maturity (140-145 days). Its USP was the grain quality — an average kernel length of 8 mm (versus 7.2-7.4 mm for Taraori and PB-1) that elongated to 21.5 mm (versus 14-14.75 mm) on cooking.

This was followed by PB-6 (a cross of PB-1 and PB-1121, released in 2010) and PB-1509 (2013). The last one yielded as much as PB-1, but with a seed-to-grain duration of just 115-120 days. IARI subsequently also unveiled improved versions of PB-1121 (PB-1718 and PB-1885), PB-1509 (PB-1692 and PB-1847) and PB-6 (PB-1886), incorporating genes conferring resistance to bacterial blight and rice blast fungal disease.

PB-1121 was "released" in Pakistan in 2013 — as PK-1121 Aromatic variety, and marketed as Kainat 1121 Basmati ('Kainat' being Urdu for 'cosmos'). PB-1509 was, likewise, registered and renamed as Kissan Basmati in 2016. More recent are YouTube videos of Pakistani seed companies and so-called research farms and agro consultants, discussing new IARI varieties — including PB-1847, PB-1885 and PB-1886, which were notified under India's Seeds Act only in January 2022. It is the surfacing of these videos that alerted the authorities in India, especially IARI scientists.

Is this concerning?
On the face of it, not much. Pakistan's basmati exports are a fraction of India's. That said, India still has multiple reasons to be concerned.

To start with, basmati rice is grown only in India and Pakistan. Pakistan predominantly exports Super Basmati, a high-yielding variety (similar to IARI's PB-1) bred by the Rice Research Institute at Kala Shah Kaku, near Lahore. This variety, released in 1996, has helped Pakistan gain a 66-70% share in the European Union-United Kingdom market for brown (unpolished/husked) basmati rice. That share has further gone up to 85% in the new marketing year from September 2023.

Moreover, while India is a clear market leader in Saudi Arabia, Iran, Iraq, United Arab Emirates and other West Asian countries, it has largely to do with consumer preference there for parboiled basmati rice. This rice — where paddy is soaked in water and partially boiled in the husk before milling — has harder grains, less susceptible to breakage after cooking for long than regular white rice. But with Pakistan mills increasingly adopting parboiling technology — and its farmers planting superior IARI basmati varieties — there could be challenges going forward.

A weak Pakistani currency (Rs 279 to the US dollar, against India's Rs 83.5) only adds to its competitive advantage.

What should India do?

India enacted the Protection of Plant Varieties and Farmers' Rights Act in 2001. The IARI-bred improved basmati varieties are all registered under this Act, which allows only Indian farmers to sow, save, re-sow, exchange, or share the seed/grain produced from them.
However, even they cannot violate the rights of the breeder — in this case, IARI — by selling the seeds of the protected varieties in branded (packaged and labelled) form.

Moreover, the IARI varieties are notified under the Seeds Act, 1996, which allows their cultivation only in the officially demarcated Geographical Indication (GI) area of basmati rice within India. This covers seven states: Punjab, Haryana, Himachal Pradesh, Delhi, Uttarakhand, Uttar Pradesh (west) and two districts of Jammu & Kashmir (Jammu and Kathua).

The sale of seeds and cultivation of the above protected basmati varieties in Pakistan would arguably qualify as an intellectual property rights (IPR) violation, which India can raise in relevant bilateral forums and at the World Trade Organisation.

Relevance: GS Prelims & Mains Paper II; Bilateral Relations
Source: Indian Express

9. Who are ISIS-K, allegedly behind the Russia concert attack?

Why in news?
Multiple gunmen went on a shooting rampage in Moscow's famous Crocus City Hall, killing at least 143 people, and injuring hundreds more. So far, at least 11 people, including four suspected gunmen, have been arrested, the Kremlin said.

Earlier, the Islamic State Khorasan (ISIS-K) claimed responsibility for the attack in a statement posted on social media. However, it is still early to say beyond doubt what the group's motivations were, or whether at all the group was behind the attack.

Who are the ISIS-K?

Islamic State Khorasan (ISIS-K), emerged in eastern Afghanistan in late 2014, and is currently one of the most active ISIS-affiliates. 'Khorasan' refers to an ancient caliphate in the region that today encompasses parts of Afghanistan, Iran, Pakistan and Turkmenistan.

The group's membership is said to have declined since 2018, with the United States and Taliban inflicting heavy losses. However, Al Jazeera noted that it still remains one of the greatest threat to Taliban's authority in the region.

What attacks has ISIS-K carried out?
The group has been responsible for a host of high-profile attacks since its inception.

These include:
• The Kabul international airport attack in 2021, during the US's Afghanistan withdrawal. The attack killed 13 US troops, and at least 175 Afghan civilians.
• The suicide bombing at the Russian embassy in Kabul, in 2022.
• The twin bombings in Kerman, Iran, earlier in 2024, which killed nearly 100 people.

Why attack Russia?
The Moscow attack is the group's most notable activity outside its home turf in Afghanistan and Iran. However, the group has openly opposed Putin due to his alleged mistreatment of Muslims in Russia, for years.

Relevance: GS Prelims & Mains Paper II; International Issues
Source: Indian Express

10. Pakistan may 'seriously examine' resuming trade with India: Why it paused, what it constituted

Why in News?
Pakistan's Foreign Affairs Minister Ishaq Dar said recently that the country will "seriously examine" the question of resuming trade with India. Bilateral trade between India and Pakistan has been halted since 2019.

Pakistani newspaper Dawn reported on Dar's press conference in London, where he said all stakeholders would sit together, citing his recent discussions with Pakistani traders. He said, "Everyone's appeal was the same — that our imports, which are still ongoing, arrive via Dubai or Singapore, [resulting in] extra freight, extra transhipment, transportation costs, etc."

TRADE BETWEEN INDIA AND PAKISTAN

	EXPORT	IMPORT	TOTAL TRADE
2017-2018	1,924.28	488.56	2,412.83
2018-2019	2,066.56	494.87	2,561.44
2019-2020	816.62	13.97	830.58
2020-2021	326.87	2.39	329.26
2021-2022	513.82	2.54	516.36

All figures in $ Million

Why was India-Pakistan trade paused?
Pakistan suspended bilateral trade with India in August 2019, after the Indian government abrogated Article 370 of the Indian Constitution. The now-scrapped article gave a special status to the erstwhile state of Jammu and Kashmir, following its accession with India in 1947. "As a party to this international dispute, Pakistan will exercise all possible options to counter the illegal steps," said Pakistan's Foreign Office at the time, referring to its claims on the region. However, an underlying reason for suspending trade was the 200 per cent tariff imposed by New Delhi on Pakistani imports earlier that year after India revoked Pakistan's Most Favoured Nation (MFN) status.

India took this step in the aftermath of the Pulwama terrorist attack the same year. On February 14, 2019, a terrorist from the Pakistani group Jaish-e-Muhammad rammed an explosives-laden car into a convoy of the Central Reserve Police Force (CRPF) at Lethpora, a village in Pulwama,

on the Srinagar-Jammu National Highway. It led to the deaths of 40 personnel. India withdrew Pakistan's MFN status within 24 hours of the attack.

What was the composition of India-Pakistan trade?
Despite having MFN status since 1996, Pakistan maintained a Negative List of 1,209 products that were not allowed to be imported from India. Only 138 products were allowed to be imported from India through the Wagah-Attari border land route.

Still, India maintained a significant trade surplus over Pakistan, meaning the total value of goods and services it exported to Pakistan was much larger than the value of goods and services it imported from Pakistan.

Even this number was not very significant compared to the status of trade with other countries. In FY17, India-Pakistan trade was a mere $2.29 billion, or about 0.35% of India's overall trade. In 2018-19, cotton ($550.33 million) and organic chemicals ($457.75 million) accounted for around half of Pakistan's imports from India. Other major Pakistani imports from India that year included plastic ($131.19 million), tanning/dyeing extracts ($114.48 million), and nuclear reactors, boilers, machinery, and mechanical appliances ($94.88 million).

Meanwhile, India's imports from Pakistan in 2018-9 included mineral fuels and oils ($131.29 million), edible fruits and nuts ($103.27 million), salt, sulphur, stone and plastering materials ($92.84 million), ores, slag and ash ($17.18 million) and raw hides and leather ($16.27 million).

What was the fallout?
After the ban, Pakistan's imports of these five products fell drastically between April 2020 and January 2021, while cotton imports stopped altogether. The only increase was in pharmaceutical products, as Pakistan looked to ensure sufficient supplies of medicines during the Covid-19 pandemic.

Earlier this year, the government said some amount of trade with Pakistan is being conducted through land and sea routes but all business through the land border has been stopped by the neighbouring country "unilaterally".

Previously, whatever trade had happened, everything was done through the Wagah-Attari border and Karachi port, according to Union Minister of State for Commerce and Industry Anupriya Patel.

Has anything changed since then?
This is not the first time that Pakistan has spoken of resuming trade. In 2021, Pakistan's Economic Coordination Council, a top decision-making body, allowed the import of cotton and yarn from India. A low domestic yield and the high cost of imports from the likes of Brazil and the United States were believed to be the reasons behind the change of stance.

However, it again took a U-turn, with then Prime Minister Imran Khan saying trade could not continue given the circumstances of that time.

Why might Pakistan be reconsidering trade with India?

Although Dar did not equivocally speak about the resumption of trade, several factors may be behind a softening in Pakistan's stand. For one, there has been a change of face, if not regime, since Imran Khan following elections held earlier this year. While the Pakistani military remains firmly in control, a new government indicates the possibility of a new policy.

It could also be done given the context of Pakistan's economy, which has been in dire condition. Devastating floods in 2022, high inflation, and political instability alongside structural issues, have led to multiple crises related to meeting the food and energy needs of the population.

The country has had to frequently approach the International Monetary Fund (IMF) or friendly countries like Saudi Arabia and China for billions of dollars in loans. With the pause in trade with India, Importing goods from faraway countries further depletes its low foreign exchange reserves.

Some Indian traders, particularly in Punjab, have also expressed the hope for trade to continue.

Relevance: GS Prelims & Mains Paper II; Bilateral Relations
Source: The Indian Express

11. India and Bhutan relations in the light of recent PM Modi's visit

Why in news?

Prime Minister Narendra Modi's visited Bhutan last week. Bhutan's Prime Minister Tshering Tobgay's lengthy bilateral with Mr. Modi a week earlier in Delhi, obviated the need for such a second back-to-back visit.

The fact that Mr. Modi went ahead with the visit, despite India's electoral Model Code of Conduct in place, his campaign schedule, and inclement weather in Bhutan nearly derailing the programme, indicates how important it was.

Outcomes of this visit

1. The announcement of India's doubling of support for Bhutan's Five-Year Plan, from ₹5,000 crore to ₹10,000 crore, was significant.
2. The highlight of the visit, of Bhutan's King conferring Bhutan's highest civilian award on Mr. Modi, had been announced in 2021 for India's support during the COVID-19 pandemic.
3. India is fully committed to Bhutan's development, particularly the upcoming Gelephu Mindfulness City, a project likely to benefit from India's increase in financial support to its neighbour.
4. Bhutan is an integral part of India's infrastructure initiatives for road, rail, integrated check points, and also for energy exchanges on India's grid, both of which are pushing sub-regional trade and travel among India, Bangladesh, Bhutan and Nepal.

5. India is mindful of Bhutan's increased engagement with China, for the boundary agreement they hope to forge soon, but that it does not intend to give Beijing space in areas of engagement such as trade and investment, where China has made inroads with India's other close neighbours.

Disputed areas between Bhutan and China

China-Bhutan talks about the possible swap of land at Doklam to Bhutan's west are, in fact, seen as a threat to India's Siliguri Corridor, whereas China's claim to areas on Bhutan's east could imperil India's border connectivity projects in Arunachal Pradesh. Recent reports, which the Ministry of External Affairs has not denied, indicate that Bhutan may have even asked India to go slow on those projects until its boundary talks with China are complete. As a result, the most important message from Mr. Modi's sojourn was one of a united front at a time of change.

Relevance: GS Prelims & Mains Paper II; Bilateral Relations
Source: The Hindu

12. Jacob Zuma banned from running in South Africa elections

Why in News?

South Africa's Election Commission recently barred former President Jacob Zuma from contesting in the country's upcoming polls in May.

While the commission did not provide a specific reason for the decision, it is likely to do with Zuma's 2021 conviction and imprisonment. South Africa's constitution does not allow an individual convicted for more than a year to hold public office. Zuma now has until April 2 to appeal against his ineligibility.

Why is the ban a big deal?
The African National Congress (ANC) came to power in 1994, on the back of its struggle against apartheid. Much like the Indian National Congress in the 1950-60s, it has had a strong stranglehold over South African politics since then.

While ANC's popularity has waned in recent years, it has still managed to maintain an over 50 per cent voteshare every national election. Jacob Zuma, and his new uMkhonto weSizwe (MK) party, however, are poised to change that. MK party is getting more popular among people at cost of ANC.

Who is Jacob Zuma?
Zuma, 81, served as modern South Africa's fourth president, from 2009 to 2018. In his youth, as a member of the ANC, he fought to end the apartheid, and was even imprisoned in Robben Island with other anti-apartheid leaders, such as Nelson Mandela.

He served as deputy president of South Africa from 1999 to 2005, under Thabo Mbeki, Mandela's successor to the presidency. However, he was dismissed after receiving dubious payments in connection to a high-profile arms deal. He was also acquitted on rape charges in a very public trial in 2006.

Nonetheless, Zuma, in 2007 managed to win over the ANC's left-wing coalition and was elected president in 2009. Multiple criminal charges against him were formally withdrawn the

very same week. While Zuma did win some acclaim for his populist policies which especially appealed to South Africa's poorest, his two-term presidency was marred by allegations of corruption and wrongdoing.

By 2016, allegations emerged that Zuma had allowed the Gupta family to acquire immense influence over his administration. The Gupta family was a wealthy Indian-origin business family, with interests ranging from IT and engineering, to mining, real estate, and leisure.

Having cultivated a relationship with Zuma since 2003, the Guptas held sway at all levels of South African government and public life under Zuma, in what was described by many observers as a "state capture".

Under mounting pressure, and a looming no confidence vote (the fifth that he would face) Zuma resigned in 2017. His successor, current President Cyril Ramaphosa, effectively sidelined him from the ANC. In 2021, Zuma was arrested and sentenced to 15 months in prison for refusing to appear in court during a corruption inquiry. His arrest sparked riots which ended up killing around 300 people. Zuma was eventually released after a couple of months on medical parole.

In December 2023, while still technically an ANC member, he founded the MK party, named after ANC's former military wing. Zuma still sees himself as the true heir to the anti-apartheid movement's revolutionary roots. The ANC has since suspended Zuma.

Relevance: GS Prelims & Mains Paper II; International Issues
Source: Indian Express

Economics

1. Giant leap for India Semiconductor Mission: Cabinet approves three more semiconductor units

The Union Cabinet chaired by Prime Minister Shri Narendra Modi approved the establishment of three semiconductor units under 'Development of Semiconductors and Display Manufacturing Ecosystems in India. All three units will start construction within next 100 days.

The Programme for Development of Semiconductors and Display Manufacturing Ecosystem in India was notified on 21.12.2021 with a total outlay of Rs. 76,000 crore.

In June, 2023, the Union Cabinet had approved the proposal of Micron for setting up a semiconductor unit in Sanand, Gujarat.

Construction of this unit is progressing at a rapid pace and a robust semiconductor ecosystem is emerging near the unit.

The approved three semiconductor units are:

1. Semiconductor Fab with 50,000 wfsm capacity:
Tata Electronics Private Limited ("TEPL") will set up a semiconductor fab in partnership with Powerchip Semiconductor Manufacturing Corp (PSMC), Taiwan.
Investment: This fab will be constructed in Dholera, Gujarat. Investment in this fab will be Rs.91,000 crore.
Technology partner: PSMC is renowned for its expertise in logic and memory foundry segments. PSMC has 6 semiconductor foundries in Taiwan.
Capacity: 50,000 wafer starts per month (WSPM)
Segments covered:
• High performance compute chips
• Power management chips for electric vehicles (EV), telecom, defence, automotive, consumer electronics, display, power electronics, etc. Power management chips are high voltage, high current applications.

2. Semiconductor ATMP unit in Assam:
Tata Semiconductor Assembly and Test Pvt Ltd ("TSAT") will set up a semiconductor unit in Morigaon, Assam.
Investment: This unit will be set up with an investment of Rs.27,000 crore.
Technology: TSAT semiconductor is developing indigenous advanced semiconductor packaging technologies including flip chip and ISIP (integrated system in package) technologies.
Capacity: 48 million per day
Segments covered: Automotive, electric vehicles, consumer electronics, telecom, mobile phones, etc.

3. Semiconductor ATMP unit for specialized chips:
Crompton Greaves (CG) Power, in partnership with Renesas Electronics Corporation, Japan and Stars Microelectronics, Thailand will set up a semiconductor unit in Sanand, Gujarat.
Investment: This unit will be set up with an investment of Rs.7,600 crore.
Technology partner: Renesas is a leading semiconductor company focussed on specialised chips. It operates 12 semiconductor facilities and is an important player in microcontrollers, analog, power, and System on Chip ('SoC') products.
Segments covered: The CG power semiconductor unit will manufacture chips for consumer, industrial, automotive and power applications.
Capacity: 15 million per day

Strategic importance of these units:
• Within a very short time, India Semiconductor Mission has achieved four big successes. With these units, the semiconductor ecosystem will get established in India.
• India already has deep capabilities in chip design. With these units, our country will develop capabilities in chip fabrication.
• Advanced packaging technologies will be indigenously developed in India with today's announcement.

Employment potential:
• These units will generate direct employment of 20 thousand advanced technology jobs and about 60 thousand indirect jobs.
• These units will accelerate employment creation in downstream automotive, electronics manufacturing, telecom manufacturing, industrial manufacturing, and other semiconductor consuming industries.

Relevance: GS Prelims & Mains Paper III; Economics
Source: PIB

2. State of employment in India: What a new report says about youths and women, concerns and caution

Why in news?
The India Employment Report 2024, prepared jointly by the Institute of Human Development (IHD) and the International Labour Organization (ILO), and released on March 26, revolves around "youth employment, education and skills." It has analysed trends and patterns of the Indian labour market for two decades, including the COVID-19 years, and listed the "emerging characteristics of the employment challenges now confronting the economy as well as the impact of growth on employment."

The big picture
The report has flagged concerns about poor employment conditions: the slow transition to non-farm employment has reversed; women largely account for the increase in self-

employment and unpaid family work; youth employment is of poorer quality than employment for adults; wages and earnings are stagnant or declining.

STATUS OF EMPLOYMENT (UPSS) OF YOUTHS AND ADULTS

■ Self-Employed ■ Regular ■ Casual   in %

	YOUTH			ADULT		
	Self-Employed	Regular	Casual	Self-Employed	Regular	Casual
2000	50	13	37	54	16	31
2012	46	21	33	55	17	28
2019	42	32	26	55	23	23
2022	47	28	25	58	19	22

SHARE OF UNEMPLOYED EDUCATED YOUTHS (SECONDARY OR HIGHER) IN TOTAL UNEMPLOYED PERSONS (UPSS)

■ All   ■ Secondary and higher   in %

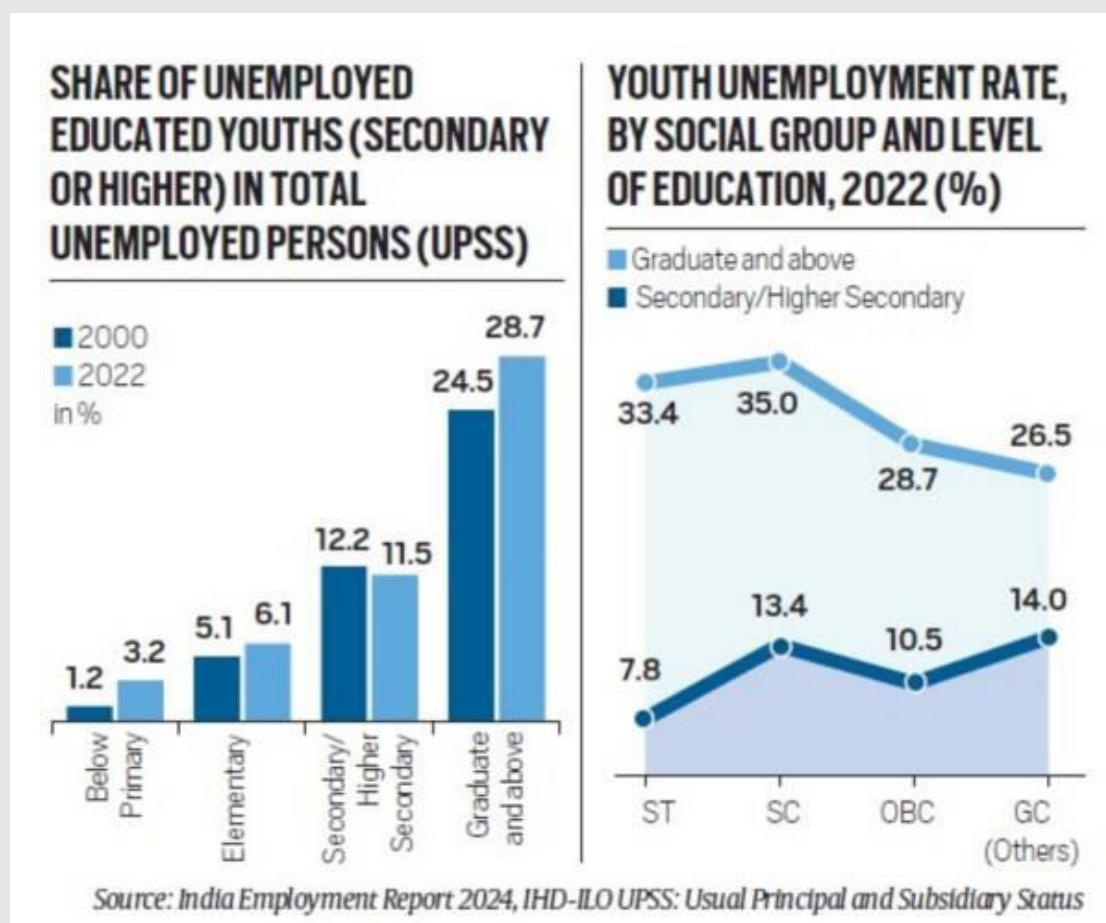| Year	All	Secondary and higher
2000	88.6	54.2
2012	87.1	58.9
2019	83.1	59.4
2022	82.9	65.7

State wise performance
The 'employment condition index' has improved between 2004-05 and 2021-22. But some states — Bihar, Odisha, Jharkhand, and UP — have remained at the bottom throughout this period, while some others — Delhi, Himachal Pradesh, Telangana, Uttarakhand, and Gujarat — have stayed at the top.

Employment quality
Informal employment has risen — around half the jobs in the formal sector are of an informal nature. Self-employment and unpaid family work has also increased, especially for women. Almost 82% of the workforce is engaged in the informal sector, and nearly 90% is informally employed, the report said.

Self-employment remains the primary source of employment — 55.8% in 2022. Casual and regular employment accounted for 22.7% and 21.5% respectively.

SHARE OF UNEMPLOYED EDUCATED YOUTHS (SECONDARY OR HIGHER) IN TOTAL UNEMPLOYED PERSONS (UPSS)

■ 2000
■ 2022
in %

Below Primary: 1.2 (2000), 3.2 (2022)
Elementary: 5.1 (2000), 6.1 (2022)
Secondary/Higher Secondary: 12.2 (2000), 11.5 (2022)
Graduate and above: 24.5 (2000), 28.7 (2022)

YOUTH UNEMPLOYMENT RATE, BY SOCIAL GROUP AND LEVEL OF EDUCATION, 2022 (%)

■ Graduate and above
■ Secondary/Higher Secondary

Graduate and above: ST 33.4, SC 35.0, OBC 28.7, GC (Others) 26.5
Secondary/Higher Secondary: ST 7.8, SC 13.4, OBC 10.5, GC (Others) 14.0

Source: India Employment Report 2024, IHD-ILO UPSS: Usual Principal and Subsidiary Status

The share of self-employment remained almost stable around 52% between 2000 and 2019, while regular employment increased by almost 10 percentage points, to 23.8% from 14.2%. This reversed by 2022, with self-employment increasing to 55.8%, while the share of regular employment declined to 21.5%. Casual employment consistently declined to 22.7% in 2022 from 33.3% in 2000.

Regular employment is generally seen as providing better-quality jobs due to the regularity of employment and associated social security benefits, while casual work is linked with relatively poor-quality jobs due to its irregular nature and lower daily earnings.

Participation of women
The female labour force participation rate (LFPR) in India remains among the world's lowest. Female LFPR declined by 14.4 percentage points (compared to 8.1 percentage points for males) between 2000 and 2019. The trend reversed thereafter, with female LFPR rising by 8.3 percentage points (compared to 1.7 percentage points for male LFPR) between 2019 and 2022.

There is a considerable gender gap — women's LFPR (32.8%) in 2022 was 2.3 times lower than men's (77.2%). India's low LFPR is largely attributed to the low female LFPR, which was much lower than the world average of 47.3% in 2022, but higher than the South Asian average of 24.8%, as per ILO data.

Structural transformation

There has been a reversal of the slow transition towards non-farm employment after 2018-19. The share of agriculture in total employment fell to around 42% in 2019 from 60% in 2000.

This shift was largely absorbed by construction and services, the share of which in total employment increased to 32% in 2019 from 23% in 2000. The share of manufacturing in employment has remained almost stagnant at 12-14%.

Since 2018-19, this slow transition has stagnated or reversed with the rise in the share of agricultural employment.

Youth employment

There has been a rise in youth employment, but the quality of work remains a concern, especially for qualified young workers.

Youth employment and underemployment increased between 2000 and 2019 but declined during the pandemic years. However, unemployment among youths, especially those with secondary-level or higher education, has intensified over time.

In 2022, the share of unemployed youths in the total unemployed population was 82.9%. The share of educated youths among all unemployed people also increased to 65.7% in 2022 from 54.2% in 2000.

The unemployment rate among youths was six times greater for those who had completed secondary education or higher (18.4%) and nine times higher for graduates (29.1%) than for persons who could not read or write (3.4%) in 2022. This was higher among educated young women (21.4%) than men (17.5%), especially among female graduates (34.5%), compared to men (26.4%).

The unemployment rate among educated youths grew to 30.8% in 2019 from 23.9% in 2000, but fell to 18.4% in 2022.

The way forward

• There are five key policy areas for further action: promoting job creation; improving employment quality; addressing labour market inequalities; strengthening skills and active labour market policies; and bridging the knowledge deficits on labour market patterns and youth employment.

• The rise of artificial intelligence (AI) could have an impact on employment, the report said, noting that the outsourcing industry in India could be disrupted because some back-office tasks would be taken over by AI.

• Investment and regulations are required in the emerging care and digital economies, which could be an important source of productive employment. The lack of job security, irregular wages, and uncertain employment status for workers pose significant challenges for gig or platform work.

• Economic policies are required to boost productive non-farm employment, especially in the manufacturing sector, with India likely to add 7-8 million youths annually to the labour force during the next decade.

• More support needs to be provided to micro, small and medium-sized enterprises, especially by providing tools such as digitalisation and AI and a cluster-based approach to manufacturing.
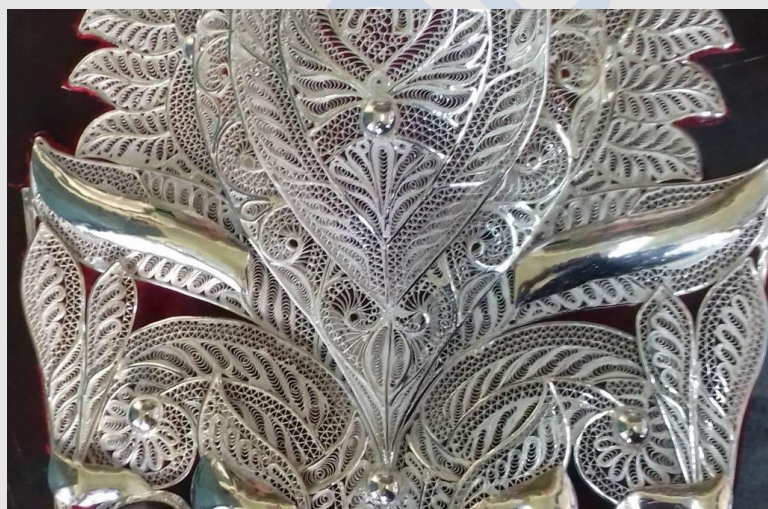
3. Cuttack's famed silver filigree work, which recently received GI tag

Why in News?
The famous Rupa Tarakasi, or silver filigree work of Odisha's Cuttack, has received the geographical indication (GI) tag.

The Odisha State Cooperative Handicrafts Corporation Limited (Utkalika) had applied for the tag.

Why is GI Tag conferred?
A GI tag is conferred upon products originating from a specific geographical region, signifying unique characteristics and qualities. Essentially, it serves as a trademark in the international market.

Rupa Tarakasi
Odisha's Cuttack is known for its silver filigree work, of intricate design and fine craftsmanship.

In Odia, "tara" means wire and "kasi" means to design. Thus, as part of Rupa Tarakasi, silver bricks are transformed into thin fine wires or foils and used to create jewellery or showpieces.

4. GI tag for Majuli masks and Majuli Manuscript Painting of Assam

Why in News?

Adding to their growing national and international recognition, the traditional Majuli masks in Assam were given a Geographical Indication (GI) tag by the Centre. Majuli manuscript painting got the GI label.

A GI tag is conferred upon products originating from a specific geographical region, signifying unique characteristics and qualities. Essentially, it serves as a trademark in the international market.

About Majuli Island

Majuli, the largest river island in the world and the seat of Assam's neo-Vaishnavite tradition, has been home to the art of mask-making since the 16th century. Today, many of its traditional practitioners are working to take the art out of their traditional place in sattras, or monasteries, and give them a new, contemporary life.

What are these masks?

The handmade masks are traditionally used to depict characters in bhaonas, or theatrical performances with devotional messages under the neo-Vaishnavite tradition, introduced by the 15th-16th century reformer saint Srimanta Sankardeva. The masks can depict gods, goddesses, demons, animals and birds — Ravana, Garuda, Narasimha, Hanuman, Varaha Surpanakha all feature among the masks.

Why is the art practised in monasteries?

Sattras are monastic institutions established by Srimanta Sankardev and his disciples as centres of religious, social and cultural reform. Today, they are also centres of traditional performing arts such as borgeet (songs), xattriya (dance) and bhaona (theatre), which are an integral part of the Sankardev tradition.

Majuli has 22 sattras, and the patent application states that the mask-making tradition is by and large concentrated in four of them — Samaguri Sattra, Natun Samaguri Sattra, Bihimpur Sattra and Alengi Narasimha Sattra.

The masks are made of bamboo, clay, dung, cloth, cotton, wood and other materials available in the riverine surroundings of their makers.

What is Majuli manuscript painting, which also received the GI tag?

It is a form of painting — also originating in the 16th century — done on sanchi pat, or manuscripts made of the bark of the sanchi or agar tree, using homemade ink.

The earliest example of an illustrated manuscript is said to be a rendering of the Adya Dasama of the Bhagwat Purana in Assamese by Srimanta Sankardev. This art was patronised by the Ahom kings. It continues to be practised in every sattra in Majuli.

5. How RBI's new directions on credit cards could benefit customers

Why in News?
The Reserve Bank of India (RBI) has directed credit card issuers to give customers an option to choose from multiple card networks. The regulator has restricted card issuers from entering into any kind of exclusive arrangements with a card network for the issuance of credit cards. The move is beneficial for customers as they will get the freedom to choose from multiple card networks.

RBI NEW GUIDELINE ON CREDIT CARDS

What does the announcement entail?
The RBI has ordered banks and non-banks that issue credit cards not to enter into any arrangement or agreement with card networks that restrain them from availing the services of other card networks.

The card issuers should provide an option to their eligible customers to choose from multiple card networks at the time of issue, it said. The regulator has given a timeline of six months to card issuers to follow the new norms.

Why have new directions been issued?
There are five authorised card networks in India: American Express Banking Corp, Diners Club International Ltd, MasterCard Asia/ Pacific Pte Ltd, National Payments Corporation of India–Rupay, and Visa Worldwide Pte Ltd.

These authorised card networks tie up with banks or non-banks (card issuers) for the issuance of credit cards. The choice of network for a card issued to a customer is decided by the card issuer and is linked to the arrangements that the card issuers have with card networks in terms of their bilateral agreements.

After a review, the RBI found that some of these arrangements existing between card networks and card issuers are not conducive to the availability of choice for customers.

How will the new norms benefit customers?
With the new directions in place, eligible customers will get to choose one among the multiple card networks. Banks and non-banks will not be able to force customers to take credit cards issued by a particular card network with whom they have any tie-ups. The move will boost competition among card networks as they will have to issue cards with attractive features.

What happens to existing credit card customers?
The RBI said for existing cardholders, the option to choose the card network should be provided at the time of the next renewal of the credit card.

Is there any exclusion?
The regulator said the new directions are not applicable to credit card issuers with the number of active cards issued by them being 10 lakh or less in number.

The RBI also said that card issuers such as American Express, who issue credit cards on their own authorised card network, are excluded from the new norms.

What is the total number of credit cards in India?
The number of outstanding credit cards at the end of January 31, 2024, stood at 9.95 crore, as per the RBI's latest data. Some of the top credit card issuers include HDFC Bank (2.01 crore), SBI Cards (1.86 crore), ICICI Bank (1.68 crore) and Axis Bank (1.37 crore).

Relevance: GS Prelims & Mains Paper III; Economics
Source: The Indian Express

6. India-EFTA Trade and Economic Partnership Agreement

Why in news?
India-European Free Trade Association signed a Trade and Economic Partnership Agreement (TEPA) on 10th March 2024.

About EFTA

EFTA countries comprise of Switzerland, Iceland, Norway & Liechtenstein. EFTA is an inter-governmental organization set up in 1960 for the promotion of free trade and economic integration for the benefit of its four Member States.

Importance

For the first time, India is signing FTA with four developed nations - an important economic bloc in Europe. For the first time in history of FTAs, binding commitment of $100 bn investment and 1 million direct jobs in the next 15 years has been given. The agreement will give a boost to Make in India and provide opportunities to young & talented workforce.

Agreement Details

The agreement comprises of 14 chapters with main focus on market access related to goods, rules of origin, trade facilitation, trade remedies, sanitary and phytosanitary measures, technical barriers to trade, investment promotion, market access on services, intellectual property rights, trade and sustainable development and other legal and horizontal provisions. EFTA is an important regional group, with several growing opportunities for enhancing international trade in goods and services. EFTA is one important economic block out of the three (other two - EU &UK) in Europe. Among EFTA countries, Switzerland is the largest trading partner of India followed by Norway.

The highlights of the agreement are:
• EFTA has committed to promote investments with the aim to increase the stock of foreign direct investments by USD 100 billion in India in the next 15 years, and to facilitate the generation of 1 million direct employment in India, through such investments.

• For the first ever time in the history of FTAs, a legal commitment is being made about promoting target-oriented investment and creation of jobs.

• EFTA is offering 92.2% of its tariff lines which covers 99.6% of India's exports. The EFTA's market access offer covers 100% of non-agri products and tariff concession on Processed Agricultural Products (PAP).

• India is offering 82.7% of its tariff lines which covers 95.3% of EFTA exports of which more than 80% import is Gold.

7. The big promise of small-scale LNG as fuel for India, with first SSLNG plant commissioned

Increased share of natural gas
The government has an ambition to turn India into a gas-based economy by pushing adoption and use of natural gas across sectors and across the country.

India aims to increase the share of natural gas in its primary energy mix to 15 per cent by 2030 from a little over 6 per cent at present. Why? Because natural gas is far less polluting than conventional hydrocarbons like oil and coal, and is cheaper than oil, for which India depends on imports to meet over 85 per cent of its requirement. As the country moves towards green energy and future fuels, natural gas is seen as a key transition fuel in that journey.

Challenges
Among the biggest challenges of scaling up gas consumption in India has been the transportation of gas to areas that are not connected by the country's natural gas pipeline grid. This distribution-related challenge has also been hindering the adoption of technologies like using liquefied natural gas (LNG) directly as a fuel for long-haul trucks and inter-city buses, and even as marine fuel, which are seen as key growth areas for gas demand in the country.

Even as large-scale pipeline projects are in the works, they will take years to be completed and even then, last-mile delivery challenges may remain in numerous parts of the country. In such a scenario, a few new-age solutions with fast turnaround times can play a pivotal role in vastly expanding natural gas reach, access, as well as consumption.

One such promising solution is small-scale LNG (SSLNG). India's largest gas utility GAIL (India) Ltd recently commissioned the country's first SSLNG unit at its Vijaipur complex in Madhya Pradesh. According to Petroleum Minister Hardeep Singh Puri, many such plants are expected to come up in the coming years, which could potentially change the country's natural gas landscape.

THE SMALL-SCALE LNG JOURNEY
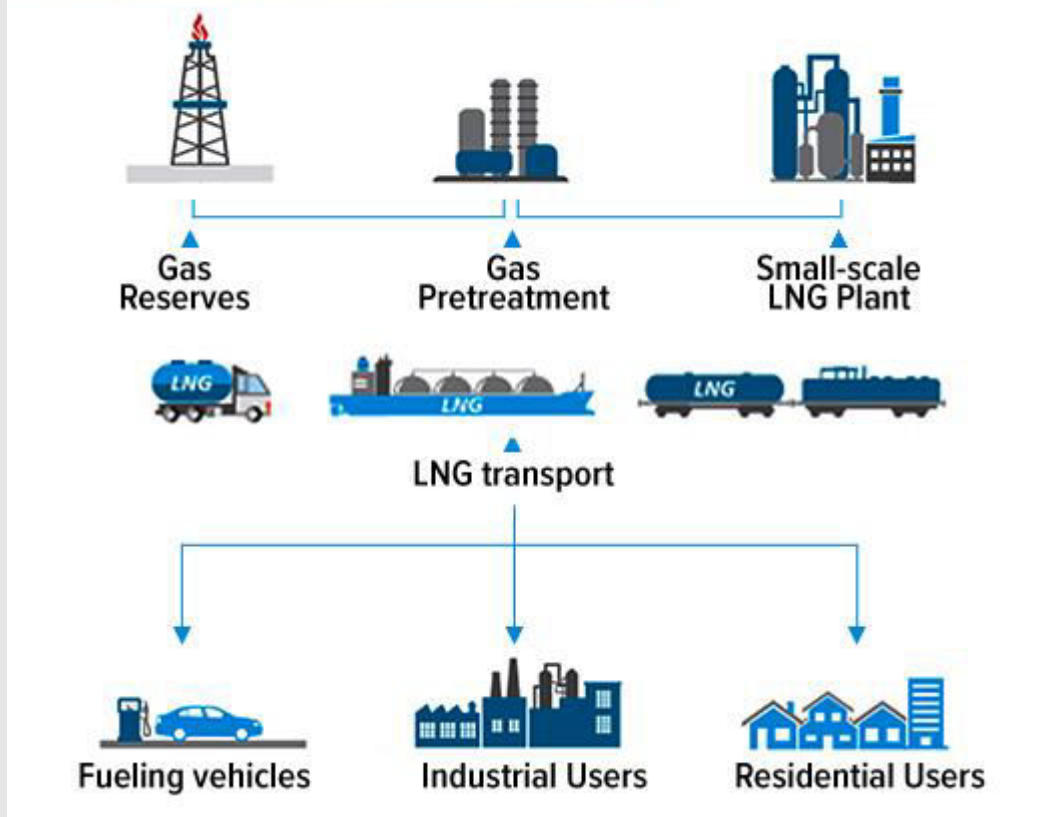
Soon after commissioning the SSLNG plant, GAIL also announced a planned investment of Rs 650 crore to develop LNG dispensing stations along the Golden Quadrilateral and other major highways to provide LNG as an automotive fuel.

What is small-scale LNG?
Still seen as a nascent industry globally, SSLNG refers to liquefaction and transportation of natural gas at a significantly smaller scale and using unconventional transportation mediums as compared to the regular large-scale liquefaction, regasification, and transportation infrastructure and processes.

While there is no standard or specific definition of SSLNG internationally, it basically pertains to supplying gas in its liquid or super-chilled form—LNG—to industrial and commercial consumers through specialised trucks and small vessels in regions that do not have pipeline connectivity.

In the relatively traditional use cases like supplying compressed natural gas (CNG) for vehicles and piped gas for households and manufacturing units, the buyer would regasify the LNG using small vapourisers, and then supply it to end users. In cases where the fuel is to be used directly in its liquid form, it would be supplied to end users as it is without regasification.

The SSLNG chain can start from an existing large-scale LNG import terminal, from where LNG is transported to consumers by cryogenic road tankers or small vessels, instead of being regisfied and supplied through pipelines. It can also start from a location that has ample natural gas supply or production by setting up small liquefaction plants there. GAIL's SSLNG unit at Vijaipur is essentially an example of the latter. GAIL's Vijaipur complex is the company's largest gas processing facility.

Mechanics of GAIL's Vijaipur SSLNG facility
Built at a cost of Rs 150 crore, the Vijaipur facility has SSLNG skids with a combined capacity of 36 tonnes per day and associated liquid handling systems. The plant includes treatment skids—zeolite pretreatment skids (ZPTS)—and liquefaction skids, known as cryo boxes, for converting natural gas to LNG.

The natural gas is first processed in the ZPTS at a pressure of approximately 15 bar for removal of the non-desirable components such as nitrogen, water, sulphur, and carbon dioxide (CO_2). It is then fed to the cryo box, where it is compressed through a four-stage compressor to a pressure of around 260 bar.

The temperature of the gas is then cooled down through the propane-based external refrigeration system to around -60 to -70 degrees celsius, and is subjected to an expansion such that the temperature drops to below minus 140 degrees celsius, thus allowing it to liquefy. This small-scale LNG unit is controlled by an automated web-based supervisory control and data acquisition (SCADA) system.

The LNG produced from the plant will be dispatched through cryogenic LNG tankers to nearby areas for use in city gas distribution (CGD) networks as CNG and piped gas, and for proposed LNG filling stations for fuelling medium and heavy-duty vehicles.

SSLNG's use case and business case
Even as GAIL has emerged as the first Indian company to set up an SSLNG unit in India, and followed it up with a major investment announcement to retail LNG as an automotive fuel, it is not the only one that has its eyes set on this potentially high-growth segment. Almost all the major oil and gas companies in India are eyeing it.

In fact, the first strong push for the idea of SSLNG in India came years ago from Petronet LNG Ltd, the country's largest importer of LNG. Petronet has, in fact, been supplying LNG directly to some of its small industrial consumers from its large LNG import terminals at Dahej in Gujarat and Kochi in Kerala.

The LNG importer, which is jointly promoted by GAIL and three other public sector oil and gas companies, has also been pushing for greater adoption of LNG as a fuel for long-haul trucks and inter-city buses, as well as a marine fuel, apart from the regulation use cases like in the CGD sector and other industries that use natural gas as feedstock or fuel.

Petronet's push for SSLNG and use of LNG as a direct fuel for road and marine transportation seemingly had two broad objectives—raising LNG consumption in India by positioning it as an alternative fuel to the likes of diesel, and increasing the LNG volumes at its Kochi terminal, which was struggling due to lack of pipeline connectivity to major consumers.

LNG as fuel for long-haul trucks, buses

Heavy duty trucks and inter-city buses are seen as a potential growth segment for LNG as an automotive fuel. As compared to diesel, which is the dominant fuel in India in these segments, LNG is a significantly cleaner fuel with reduced CO_2 emissions and negligible amounts of other pollutants like particulate matter, nitrogen oxide, and sulphur dioxide, while providing slightly higher range with a similar-sized fuel tank.

LNG has been used aggressively and successfully as a fuel for medium and heavy commercial vehicles in various countries, most notably in China. It is also usually notably cheaper than crude oil, from which diesel is derived. Although India depends on imports to meet around half of its natural gas requirement, the dependency level is much lower than in the case of crude oil.

If LNG indeed is able to replace a significant chunk of India's diesel consumption volumes, it could lead to substantial foreign exchange savings for the country.

There are, of course, teething troubles in India when it comes to use of LNG as a long-haul commercial vehicle fuel, despite its evident advantages. These challenges include lack of easy availability of LNG-powered vehicles, a virtually non-existent LNG retail network, higher initial price of LNG vehicles as compared to those powered by diesel, and absence of an LNG vehicle financing ecosystem.

A few Indian companies, including GAIL and Petronet, are evidently working to build the ecosystem and make it viable and attractive for transporters to shift from diesel-guzzling vehicles to LNG-powered ones.

Petronet has collaborated with commercial vehicle manufacturers and other public sector oil and gas companies for trials and pilot projects for LNG-fuelled trucks and buses. According to the company's website, it is in discussions with various state roadways corporations, truck fleet operators, and other transporters to run vehicles on LNG. Petronet has also established a few LNG dispensing stations, mainly along highways.

Bigger players like GAIL and Indian Oil Corporation (another promoter of Petronet), who have a lot more experience in liquid fuel and gas retail, are looking to build LNG dispensing stations along major highways. GAIL's Vijaipur SSLNG unit is also being seen as a key first step in taking SSLNG distribution deep inside the country.

Relevance: GS Prelims & Mains Paper III; Economics
Source: The Indian Express

Why in News?
Markets regulator Securities and Exchange Board of India (SEBI) has directed mutual fund houses to stop accepting any more inflows in schemes that invest in overseas exchange-traded funds (ETFs), starting April 1, 2024. SEBI has issued these directions as inflows in these overseas ETFs have come close to the mandated investment limit of $1 billion in foreign ETFs.
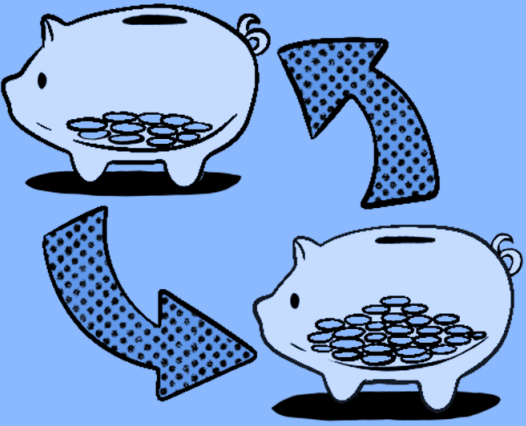
Why is SEBI's direction to MFs?
The capital market regulator has asked asset management companies (AMCs) not to accept funds in mutual fund plans that invest in overseas exchange-traded funds (ETFs) as the upper limit of $1 billion for these investments is close to being breached. The regulator has asked to stop fresh inflows in such schemes from April 1.

What is the overall limit for mutual funds to invest in overseas ETFs?
Currently, there is an overall cap of $7 billion set by the Reserve Bank of India (RBI) for fund houses to invest in overseas stocks or mutual funds. MFs are also permitted to invest up to $1 billion in overseas exchange traded funds. Mutual fund industry has been demanding the RBI to hike the overseas investment limit of $7 billion.

In January this year, when RBI Governor Shaktikanta Das was asked about plans to revisit the limit on the overseas investment by mutual funds, he said the call on it will be taken when RBI is confident that the rupee has stabilized on a durable basis.

ETF

[ē-ˈtē- ˈef]

An exchange-traded fund (ETF) is a type of pooled investment security that holds multiple underlying assets, rather than only one.

What is an exchange traded fund?
An ETF, or exchange traded fund, is a marketable security that tracks an index, a commodity, bonds, or a basket of assets like an index fund. Unlike regular mutual funds, an ETF trades like a common stock on a stock exchange. The traded price of an ETF changes throughout the day like any other stock, as it is bought and sold on the stock exchange. The trading value of an

ETF is based on the net asset value of the underlying stocks that an ETF represents.

ETFs typically have higher daily liquidity and lower fees than mutual fund schemes, making them an attractive alternative for individual investors. ETFs are considered to be more tax efficient compared to other mutual fund schemes. There are mainly five types of ETFs – equity ETF (ETF in which investment is made in shares), bonds ETF (ET in which investment is made in bonds), commodity ETF (ETF in which investment is made in commodity), international ETF (ETF in which investment is made abroad) and sectoral/thematic ETF (ETF in which investment is made in particular sector).

Relevance: GS Prelims; Economics
Source: The Indian Express

9. How will T+0 settlement cycle benefit investors, which securities are eligible?

Why in news?
The BSE and NSE introduced trading in the T+0 rolling settlement cycle in the equity segment on an optional basis. The beta version of the optional T+0 settlement cycle, or same-day settlement, was launched for a set of 25 scrips, and with a limited set of brokers.

What is the T+0 trading settlement cycle?
In December last year, the capital markets regulator SEBI proposed to introduce a facility for clearing and settlement of funds and securities on T+0 (same day) on an optional basis, in addition to the existing T+1 settlement cycle.

Under the T+0 trade cycle, the settlement of trades will happen on the same day after the closure of the T+0 market. If investors sell a share, they will get the money credited to their account the same day, and the buyer will also get the shares in their demat account on the very day of the transaction.

What are the benefits of T+0 trade settlement?
A shortened settlement cycle will bring cost and time efficiency, transparency in charges to investors, and strengthen risk management at clearing corporations and the overall securities market ecosystem.

The T+0 trade cycle is expected to provide flexibility in terms of faster pay-out of the funds against the securities to the sellers and faster pay-out of securities against the funds to the buyers. It will allow better control over funds and securities by the investors.

For the securities market ecosystem, a shorter settlement cycle will further free up capital in the securities market, thereby enhancing the overall market efficiency. It will enhance the overall risk management of Clearing Corporations (CCs) as the trades are backed by upfront funds and securities.

What are the trade timings?
For the optional T+0 settlement cycle, there will be one continuous trading session from 09:15 AM to 1:30 PM. The settlement of funds and securities will be completed on the same day by 4:30 PM.

Relevance: GS Prelims & Mains Paper III; Economics
Source: Indian Express

10. PM Modi speaks of returning Rs 3,000 crore attached by ED to West Bengal's poor: How ED attaches cash

Why in News?
Prime Minister Narendra Modi recently said he was exploring "legal options" to return nearly Rs 3,000 crore attached by the Enforcement Directorate (ED) in its raids in the state to the poor people of West Bengal.

During a phone call with Amrita Roy, BJP's Krishnanagar candidate for the upcoming Lok Sabha elections, the PM said: "This is poor man's money. Someone gave money to be a teacher, someone gave money to be a clerk…. I am taking legal advice, and if my legal advice is given to the new government, they will have to make legal arrangements, rules, and ways to return the money of the poor," the PM told Roy. The BJP released the audio clip of the conversation. Later, the TMC claimed that the conversation "severely violates the Model Code of Conduct" and that the PM made "unwarranted monetary promises…"

How are seizures made?
ED is mandated to conduct searches at the premises of suspects in a case under the Prevention of Money Laundering Act (PMLA). ED generally approaches the suspect with a search warrant and conducts searches. The recoveries made during the searches are seized in the presence of independent witnesses who have to sign the seizure memo.

What does ED do with the seized cash and gold?

Earlier, the cash seized by the agency was deposited by the concerned administrative zone into fixed deposit accounts opened by them. The money remained in the account until the case was decided. If the accused got convicted, the cash so attached (given that it was proved to be proceeds of crime), would be deposited in the government treasury. If the case ended in acquittal, the entire amount, along with interest, would be returned to the accused.

Seized gold or other valuables would be deposited in a locker. In 2018, however, the entire system was rationalized and now the money gets deposited directly in the treasury through personal deposit accounts. Concerned zones now open deposit accounts in the name of Enforcement Directorate with the State Bank of India. These accounts do not generate any interest on deposits. The rest of the procedure for both cash and gold remains the same.

What happens after seizure or attachment?

The purpose of attachment is to deprive an accused of the benefits of the attached asset. The law also provides for the property to remain out of bounds for the accused until the trial is complete.

After ED attaches or seizes any property, including cash, it has 180 days to get a confirmation on the said seizure from the Adjudicating Authority of the agency. Once the attachment has been confirmed, the ED can take possession of the seized property. In case it is an immovable property, the ED can issue eviction notice to the property owner and take possession of it.

The Adjudicating Authority order, however, can be challenged in the Prevention of Money Laundering Act (PMLA) Appellate Tribunal and further in the high court which can stay the order, restore the property to the owner or clear the way for ED's possession of the asset.

What happens when ED attaches a running business, such as a hotel?

As a rule, running businesses are not shut down or taken possession of following confirmation by the Adjudicating Authority. However, if the accused does not get legal protection from the tribunal or the high court, the ED has powers to claim all the profits from the operation of the commercial premises, such as a hotel. These profits are again deposited in deposit accounts of the agency. The entire money would be returned to the accused if he/she is acquitted.

Relevance: GS Prelims & Mains Paper III; Economics
Source: Indian Express

Environment

1. Establishment of International Big Cat Alliance (IBCA)

Approval for Establishment

The Union Cabinet approved the establishment of International Big Cat Alliance (IBCA) with headquarters in India with a one-time budgetary support of Rs.150 crore for a period of five years from 2023-24 to 2027-28.

Unique list of Big Cat Range Countries

Range Country		
1. India	33. Ivory Coast	65. Kyrgyz Republic
2. Bangladesh	34. Mozambique	66. Mongolia
3. Bhutan	35. Rwanda	67. Tajikistan
4. Cambodia	36. South Africa	68. Uzbekistan
5. Vietnam	37. Tanzania	69. Libya
6. China	38. Oman	70. Algeria
7. Indonesia	39. Saudi Arabia	71. Argentina
8. Lao PDR	40. Yemen	72. Belize
9. Malaysia	41. Angola	73. Bolivia
10. Myanmar	42. Equatorial Guinea	74. Brazil
11. Nepal	43. Ghana	75. Suriname
12. Russia	44. Kenya	76. Colombia
13. Thailand	45. Namibia	77. Costa Rica
14. Pakistan	46. Senegal	78. Ecuador
15. Sri Lanka	47. South Sudan	79. French Guiana
16. Djibouti	48. Uganda	80. Venezuela
17. Ethiopia	49. Benin	81. Guatemala
18. Guinea - Bissau	50. Botswana	82. Guyana
19. Malawi	51. Burkina Faso	83. Honduras
20. Nigeria	52. Cameron	84. Mexico
21. Somalia	53. Central African Republic	85. Nicaragua
22. Swaziland	54. Chad	86. Panama
23. Zimbabwe	55. Congo	87. Paraguay
24. Afghanistan	56. Democratic Republic of the Congo	88. Peru
25. Armenia	57. Eritrea	89. Burundi
26. Azerbaijan	58. Guinea	90. Zaire
27. Iran	59. Liberia	91. Mali
28. Iraq	60. Niger	92. Canada
29. Turkey	61. Sierra Leone	93. Chile
30. Turkmenistan	62. Sudan	94. El Salvador
31. Egypt	63. Zambia	95. United State of America
32. Gabon	64. Kazakhstan	96. Uruguay

Announcement

Acknowledging India's leading role in conserving tigers, other big cats and many of its endangered species, the Prime Minister of India during his speech on the occasion of Global Tiger Day, 2019 called for an Alliance of Global Leaders to curb poaching in Asia. He reiterated this on the occasion of Commemorating 50 years of India's Project Tiger in 2023 and formally announced launch of an International Big Cat Alliance aiming at securing the future of big cats and landscapes they thrive. The pioneering and long standing tiger and other big cat conservation good practices evolved in India may-be replicated in many other range countries.

Big Cats in India

Seven big cats include Tiger, Lion, Leopard, Snow Leopard, Puma, Jaguar and the Cheetah out of these five big cats viz. Tiger, Lion, Leopard, Snow Leopard and Cheetah are found in India.

Constituents

The International Big Cat Alliance has been conceived as a multi-country, multi-agency coalition of 96 big cat range countries, non-range countries interested in big cat conservation, conservation partners and scientific organizations working in the field of big cat conservation besides business groups and corporates willing to contribute to the cause of big cats, to establish networks and develop synergies in a focused manner so as to bring to a common platform a centralized repository of successful practices and personnel, backed by financial support which can be leveraged to

strengthen the conservation agenda in the field to arrest decline in big cat population and reverse the trend.

This will be a demonstrative step in leadership position on big cat agenda, to bring range countries and others on a common platform.

2. Status of Leopards in India

Status of Leopards in India, 2022
There are an estimated 13,874 leopards in India, up from 12,852 in 2018, according to the 'Status of Leopards in India, 2022' report, released by the Union Environment Ministry recently.

Importance
Indian leopards (Panthera pardus fusca) are distributed across a variety of forested habitats in India, Nepal, Bhutan, and parts of Pakistan. Being apex predators, they sit at the top of the food chain, and thus play a crucial role in maintaining a balanced ecosystem. Like lions (Panthera leo), leopards came to India from the west, most likely Ethiopia.

Regional Trends
According to the recently released report, Central India and Eastern Ghats has the highest population of leopards (8,820), followed by the Western Ghats (3,596), and the Shivalik Hills and Gangetic Plains (1,109). Statewise, Madhya Pradesh boasts of the largest population of leopards (3,907), followed by Maharashtra (1,985), Karnataka (1,879) and Tamil Nadu (1,070).

The data shows that the leopard population hasn't grown the same way the tiger population has grown. It is a marginal increase.

Decrease in population in some regions
Nonetheless, leopard populations declined in a few regions. The report showed that the Shivalik Hills and Gangetic Plains recorded a worrying 3.4% per annum decline, going down from 1,253 in 2018 to 1,109 in 2022.

Several states too reported a decline in leopard population. In Odisha the number of leopards dropped from 760 in 2018 to 562 in 2022, and in Uttarakhand, the population declined from 839 in 2018 to 652 in 2022. Kerala, Telangana, Chhattisgarh, Bihar, and Goa too reported population declines.

One factor behind this decrease can be the increase in tiger populations. For instance, Uttarakhand Forest officials said that some regions have recorded a significant decline in leopard population possibly due to increased tiger density.

Other factors include a number of external threats, such as poaching and habitat loss. Road accidents are also a significant cause of leopard fatalities.

Table E.1: *Estimated leopard numbers in each landscape from 2018 and 2022 (Number in parenthesis are one standard error limit of the mean).*

State	2018 Population (SE)	2022 Population (SE)
Bihar	98 (8)	86 (3)
Uttarakhand	839 (48)	652 (77)
Uttar Pradesh	316 (39)	371 (54)
Shivalik Hills & Gangetic Plains	**1,253 (95)**	**1,109 (134)**
Andhra Pradesh	492 (31)	569 (41)
Telangana	334 (16)	297 (20)
Chhattisgarh	852 (39)	722 (45)
Jharkhand	46 (10)	51 (10)
Madhya Pradesh	3,421 (150)	3,907 (215)
Maharashtra	1,690 (99)	1,985 (122)
Odisha	760 (33)	568 (35)
Rajasthan	476 (39)	721 (112)
Central India & Eastern Ghats	**8071 (417)**	**8,820 (600)**
Goa	86 (3)	77 (13)
Karanataka	1,783 (71)	1,879 (261)
Kerala	650 (28)	570 (76)
Tamil Nadu	868 (40)	1,070 (132)
Western Ghats	**3387 (142)**	**3,596 (482)**
Arunachal Pradesh	11 (3)	42 (10)
Assam	47 (9)	74 (11)
North Bengal	83 (17)	233 (21)
North Eastern Hills, and Brahmaputra Floodplains	**141 (26)**	**349 (42)**
India	**12,852 (680)**	**13,874 (1,258)**

Benefits from tiger conservation efforts

While a rise in the tiger population has been known to adversely impact the habitat and resources available to leopards and other creatures lower down the predator chain, tiger conservation efforts have also helped grow leopard populations.

Take, for instance, the Central India and Eastern Ghats landscape, which boasts of the largest leopards population. Wildlife officials told that the leopard population in this landscape is growing, largely due to protective measures under the umbrella of tiger conservation.

The report stated that "leopard densities are higher in the Tiger Reserves compared to outside Protected Areas, despite the fact that tigers exert regulatory pressure on leopards."

For instance, Madhya Pradesh Principal Chief Conservator said, Tiger in Madhya Pradesh is an umbrella species. When we conserve the tiger, we also conserve the co-predators, the vegetation, and the whole habitat as a whole.

Leopard-human conflict remains a worry
Leopards' adaptability in terms of habitat and dietary preferences help them to thrive in agro-pastoral areas, plantations, and near human settlements. This, however, has led to increasing leopard-human conflict.

According to the report, in the Shivalik region, roughly 65% of the leopard population is present outside protected areas. The Uttarakhand Forest Department said that 30% of all wildlife-caused human deaths and injury cases were due to leopards (570 of nearly 2,000 cases from the last five years).

Relevance: GS Prelims & Mains Paper III; Environment
Source: Indian Express

3. Annual State of the Climate report published by the World Meteorological Organisation

Why in news?
The new annual State of the Climate report, published by the World Meteorological Organisation (WMO) found that 2023 was the hottest year on record. Numerous records for indicators of the climate system, including greenhouse gas levels (GHGs), surface temperatures, ocean heat, sea level rise, Antarctic Sea ice cover, glacier retreat, etc., were broken, the report added.

Greenhouse gases
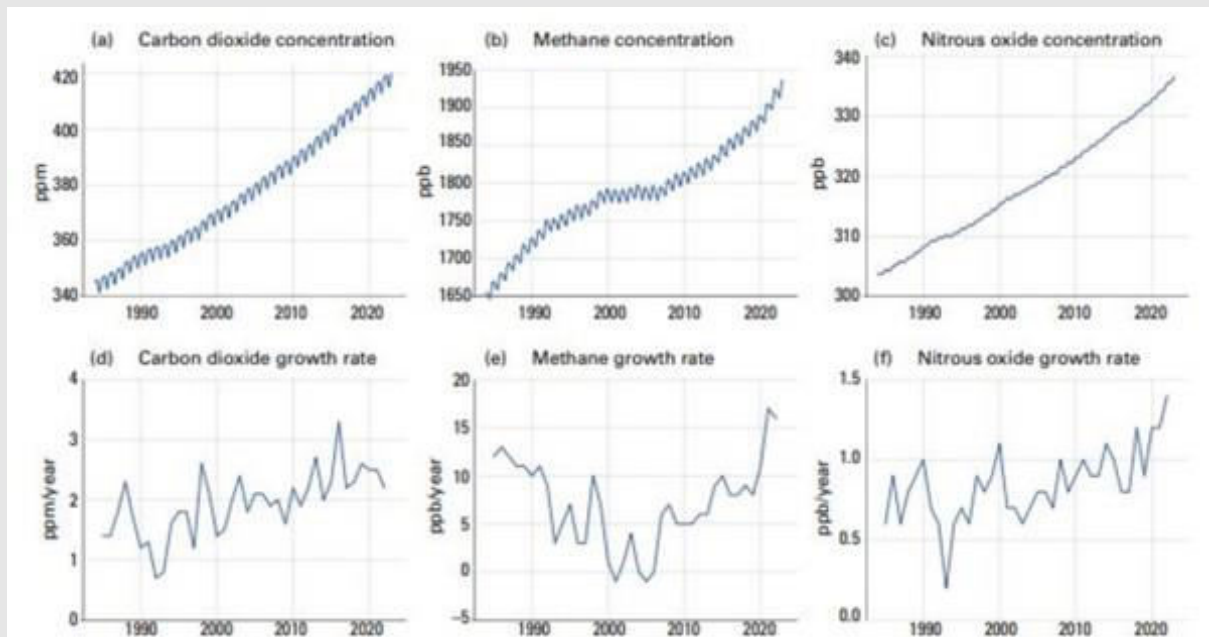
Top row: (a) Carbon dioxide in parts per million, (b) Methane in parts per billion and (c) Nitrous oxide in parts per billion. Bottom row: the growth rates representing increases in successive annual means of (d) Carbon dioxide in parts per million per year, (e) Methane in parts per billion per year and (f) Nitrous oxide in parts per billion per year.

The unprecedented levels of GHGs in the atmosphere are the main culprit behind the rapid warming of the planet. Gases such as carbon dioxide, methane, and nitrous oxide trap the incoming solar radiation in the atmosphere and contribute to global warming. The concentration of aforementioned GHGs reached record-high observed levels in 2022 — the latest year for which consolidated global values are available (1984–2022) — according to the WMO report.

Surface Temperature
The global average near surface temperature for 2023 spiked to 1.45 degree Celsius — the highest ever on record — above the pre-industrial levels. Although the rise in GHG concentrations in the atmosphere is the primary reason for soaring global temperatures, the onset of El Niño last year also contributed to the increase in mercury.
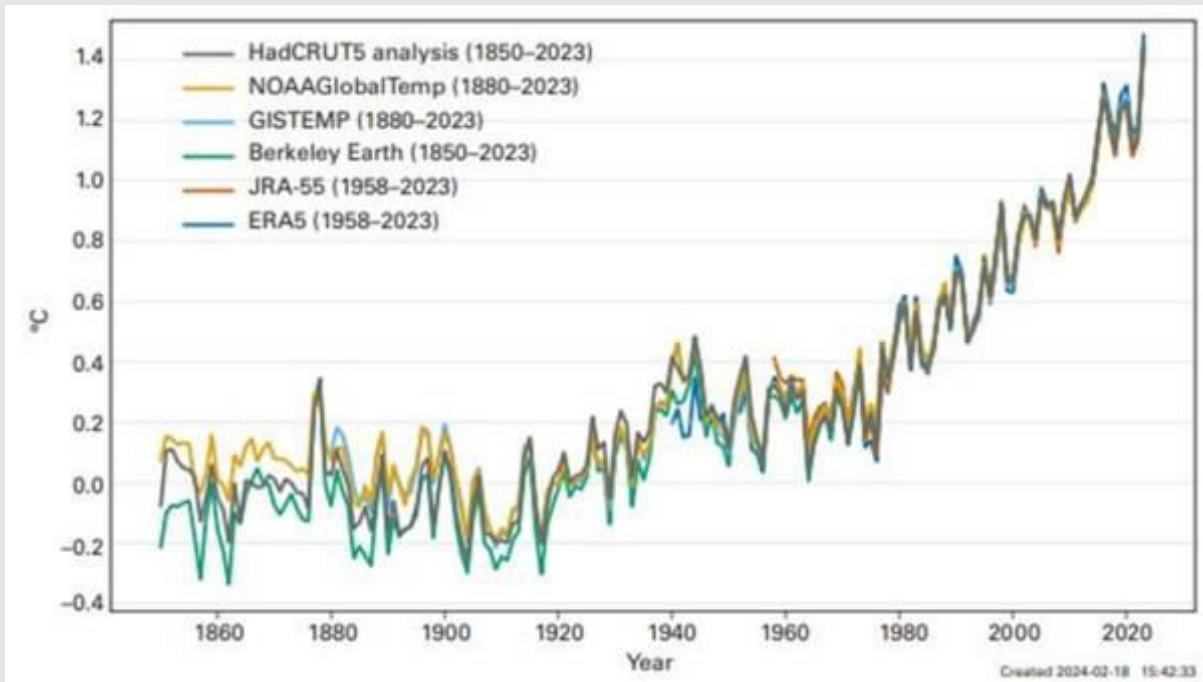
Annual global mean temperature anomalies (relative to 1850–1900) from 1850 to 2023. Data are from six data sets as indicated in the legend. Source: WMO

El Niño refers to an abnormal warming of surface waters in the equatorial Pacific Ocean. It increased the likelihood that temperature records would be broken, and there would be more extreme heat in many parts of the world and the ocean.

Ocean Heat Content
As the oceans have absorbed nearly 90 per cent of the extra heat trapped by GHGs since 1971, they steadily become warmer and their heat content has increased.

In 2023, the ocean heat content (OHC) — the total amount of heat stored by the oceans — reached its highest level in the 65-year observational record, according to the report.
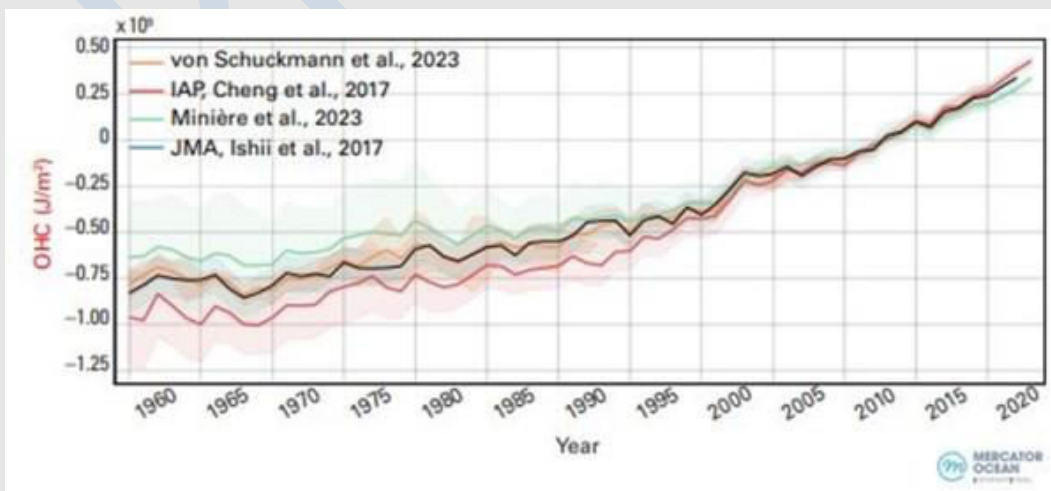
Marine Heat Waves
Due to warmer temperatures, the global ocean experienced an average daily marine heatwave (MHWs) coverage of 32%, well above the previous record of 23% in 2016, the report added. MHWs occur when the surface temperature of a particular region of the sea rises to 3 or 4 degree Celsius above the average temperature for at least five days.

Antarctic Sea-ice extent
Antarctic sea-ice extent plummeted to 1.79 million km^2 in February 2023 — a new record low since the satellite era began in 1979. The extent remained at a record low for the time of year from June till early November, according to the WMO report.

Glacier
In the hydrological year 2022-2023, the global set of reference glaciers suffered the largest loss of ice on record. Glaciers in North America and Europe were particularly impacted.

According to the WMO report, the annual mass balance — the amount of mass gained or lost by the glacier and expressed in metres of water equivalent (m w.e.) — of the reference glaciers dropped to a new low in 2022-2023, which was –1.2 m w.e.

Relevance: GS Prelims & Mains Paper III; Environment
Source: Indian Express

4. India to generate 600 kilotonnes of solar waste by 2030

Why in news?
India generated about 100 kilotonnes (kt) of solar waste in the financial year (FY) 2022-2023, according to a new study. The amount of solar waste produced by the country is expected to reach 600 kt by 2030, the study said.

The analysis, 'Enabling a Circular Economy in India's Solar Industry – Assessing the Solar Waste Quantum', was done by the Ministry of New and Renewable Energy (MNRE) and the Council on Energy, Environment and Water (CEEW), a climate think tank.

The current solar capacity of India stands at 66.7 GW as of March 2023 — it has increased by 23 times in the past 10 years — and is slated to jump to 292 GW of installed solar capacity by 2030. Therefore, the management of solar waste is crucial for environmental, economic, and social reasons.

But first, what is solar waste?
Solar waste refers to the waste generated during the manufacturing of solar modules and waste from the field (project lifetime), according to the study.

Manufacturing involves two streams of waste, including the scrap that's produced and the waste generated from PV modules failing quality tests. Meanwhile, waste from the field

involves three streams of waste. One, waste generated during transporting and handling — the damaged modules are considered as waste. Two, waste produced due to the damage incurred by solar modules during their lifetime. Three, when the modules reach their end-of-life and are not usable anymore.

The study only focused on waste from the field (project lifetime) category and excluded waste generated during manufacturing.

What are the findings of the study?
By 2030, India's current installed solar capacity will generate about 340 kt — three times more than the present. Around 67 per cent of this waste is expected to be produced by five states, including Rajasthan, Gujarat, Karnataka, Tamil Nadu, and Andhra Pradesh. This is because these five states currently have more solar capacity than other states and therefore, will produce more solar waste.

The cumulative waste from existing and new capacity (deployed between FY24 and FY30) will reach about 600 kt by 2030, according to the report. By 2050, it will increase to about 19,000 kt and 77 per cent of which will be generated from new capacities.

Figure 5 India's cumulative solar waste would increase about 32 times between 2030 and 2050
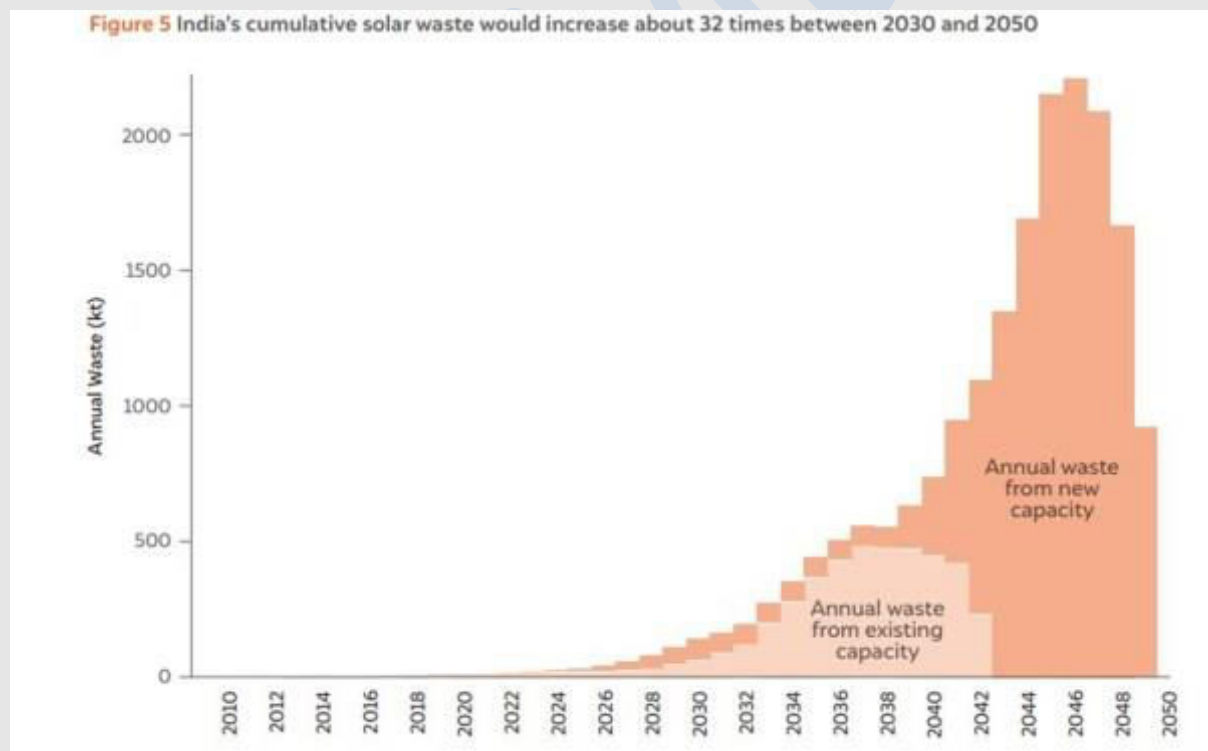
Credit: Council on Energy, Environment and Water (CEEW)

As the discarded modules contain minerals such as silicon, copper, tellurium, and cadmium — which have been classified as critical minerals for the country's economic development and national security by the Indian government — the study focused on them also. The 340 kt waste expected to be produced by 2030 would consist of 10 kt of silicon, 12-18 tonnes of silver, and 16 tonnes of cadmium and tellurium.

How to deal with solar waste?

The report gave several recommendations for managing solar waste. It urged the policymakers to maintain a comprehensive database of the installed solar capacity, which would help in estimating solar waste in the following years. The report also said the policymakers should incentivise recyclers, and push stakeholders to effectively manage the growing solar waste.

The report talked about two broad ways of recycling solar panels. First is conventional recycling or bulk material recycling, which involves mechanical processes like crushing, sieving, and shearing of the waste. While the majority of recycled materials consist of glass, aluminium, and copper, more valuable materials like silver and silicon cannot be recovered through this method.

The other way of recycling is known as high-value recycling. It involves the use of a combination of mechanical, chemical, and thermal processes to recycle the modules. Unlike conventional recycling, this method can recover silver and silicon also with the help of chemical processes.

Relevance: GS Prelims & Mains Paper III; Environment
Source: Indian Express

5. What are the new rules for elephant transfers?

Why in News?

The Centre has notified a set of rules called the Captive Elephant (Transfer or Transport) Rules, 2024 that liberalises the conditions under which elephants may be transferred within or between States.

new rules for elephant transfers
(Transfer or Transport) Rules, 2024

What are the rules around the transfer and transport of elephants?

Elephants are, according to the provisions of the Wildlife Protection Act, a Schedule 1 species and therefore, be it wild or captive, cannot be captured or traded under any circumstances. Section 12 of the Act allows Schedule I animals to be translocated for 'special purposes' such as education and scientific research. They can also be translocated for population management of wildlife without harming any wild animal and collection of specimens for recognised zoos/museums.

Captive elephants because of their historical role in forest management, timber transport, presence in estates of erstwhile royal families and in temple precincts for religious purpose can be owned and therefore come under a special category. However, strict rules guide the transfer of such elephants.

Section 40 (2) of the Wildlife Protection Act, 1972 prohibits the acquisition, possession and transfer of a captive elephant without the written permission of the Chief Wildlife Warden of the State.

Until 2021, however, these laws explicitly said that such transactions ought not to be of a 'commercial nature'. The Environment Ministry in 2021 brought in an amendment that allowed the transfer of elephants for 'religious or any other purposes'.

Such a broad interpretation, activists and researchers said, could accelerate trafficking and illegal commercial transactions. A standing committee, led by former Environment Minister, Jairam Ramesh, opposed this section but it was passed into law.

What do the updated rules say?
These rules provide new relaxations under which captive elephants can change owners or be transferred. These include, for instance, situations when an owner is no longer in a position to maintain the elephant or when a state's Chief Wildlife Warden "deems it fit and proper" to transfer the elephant in circumstances which call for better upkeep of the elephant. Before a transfer within the State, an elephant's health has to be ratified by a veterinarian, and the Deputy Conservator of Forests has to establish that the animal's current habitat and prospective habitats are suitable. The Chief Wildlife Warden on receipt of such documents may choose to reject or approve the transfer.

If the transfer involves moving the elephant outside of a State, similar conditions apply. Before a transfer is effected, the "genetic profile" of the elephant has to be registered with the Ministry of Environment, Forest and Climate Change.

Earlier rules required that an elephant being transferred from say, Assam to Gujarat would need permissions from the Chief Wildlife Wardens of every State that the elephant would pass through in the process of being ferried by road. Now only the originating and recipient States' permissions are required.

What do the updates mean?

The Wildlife Protection Act is essentially a prohibitive law. It puts in a variety of restrictions to curb the trafficking of wild animals. However independent researchers say that with regard to elephants the law has become lax. The establishment of India's largest private zoo in Jamnagar, Gujarat which is affiliated to the Reliance Foundation, has brought some of these questions to the fore. The facility, which is a rescue centre and ostensibly exists to rehabilitate traumatised and injured elephants, among other wildlife, hosts a reported 200 elephants and controversially also hosts "healthy animals," according to a recent journalistic investigation published in the periodical Himal Southasia. There are also concerns that some of these elephants aren't captive but sourced from the wild.

6. The push for nuclear energy as climate solution

Nuclear Energy Summit

Last week, Brussels hosted a first-of-its-kind Nuclear Energy Summit that was billed as the most high-profile international meeting on nuclear energy ever, boasting the attendance of representatives from 30 countries, including a few heads of state. This day-long meeting on March 21 was the latest in a series of efforts being made in the last few years to pitch nuclear energy as an important solution to global problems like climate change and energy security. The International Atomic Energy Agency (IAEA), which organised last week's event, called it a "landmark" and a "turning point" in the efforts to expand the use of nuclear energy for generating clean electricity.

The meeting was not meant to produce any decisions or finalise any agreement. Rather, it was another attempt to build momentum for a greater acceptance of nuclear energy which many countries continue to have apprehensions about.

Concerns about nuclear energy use

Such apprehensions were aggravated by the Fukushima accident in 2011. The continuing crisis at the Zaporizhzhya nuclear power plant in Ukraine, the first nuclear facility to have been caught in a dangerous armed conflict, has also been a source of grave concern.

But global nuclear advocates, led by the IAEA, an intergovernmental organisation that works for the safe and peaceful use of nuclear science and technology, have been very active in the last few years in highlighting the potential of nuclear power to accelerate the clean energy transition that the world so desperately needs to achieve its climate change goals.

The IAEA has launched an 'Atoms4Climate' initiative to talk about this and has begun an engagement with the climate community, especially at the COPs or the annual year-ending climate conferences. Two years ago, at COP27 in Sharm el-Sheikh, IAEA set up a pavilion for the first time, and at COP28 in Dubai last year, about 20 countries pledged to work towards tripling global nuclear energy installed capacity by 2050.

The case for nuclear energy

The case for nuclear energy as a possible substitute for fossil fuels, at least for electricity generation, is not without merits. It is a clean source of energy with a minimal carbon footprint. There is negligible release of emissions during the electricity generation process.

Even when the entire life cycle is considered – accounting for activities like reactor construction, uranium mining and enrichment, waste disposal and storage, and other processes – greenhouse gas emissions are only in the range of 5 to 6 grams per kilowatt hour, according to IAEA. This is more than 100 times lower than coal-fired electricity, and about half the average of solar and wind generation.
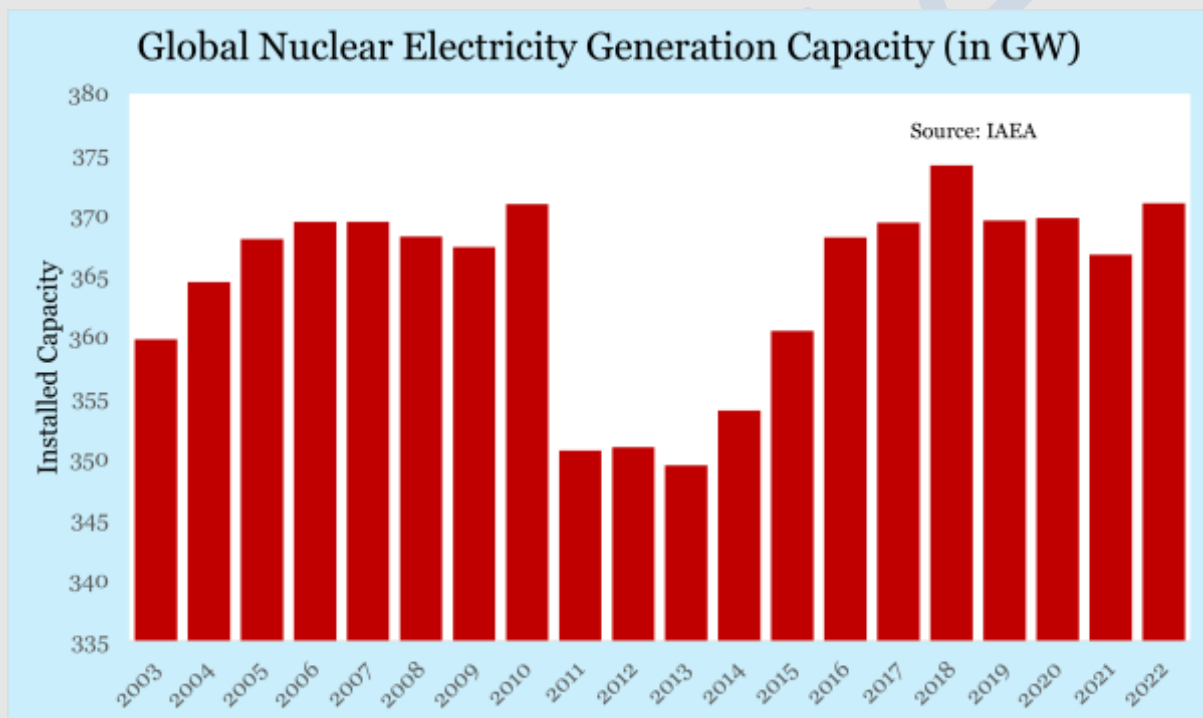

Chart 1 shows the global nuclear energy generation capacity in GW.

The other great advantage of nuclear is its perennial availability, unlike wind or solar which are season or time-dependent. It is thus suitable for baseload electricity generation that solar or wind projects are unable to do unless breakthroughs in battery storage technologies come along.
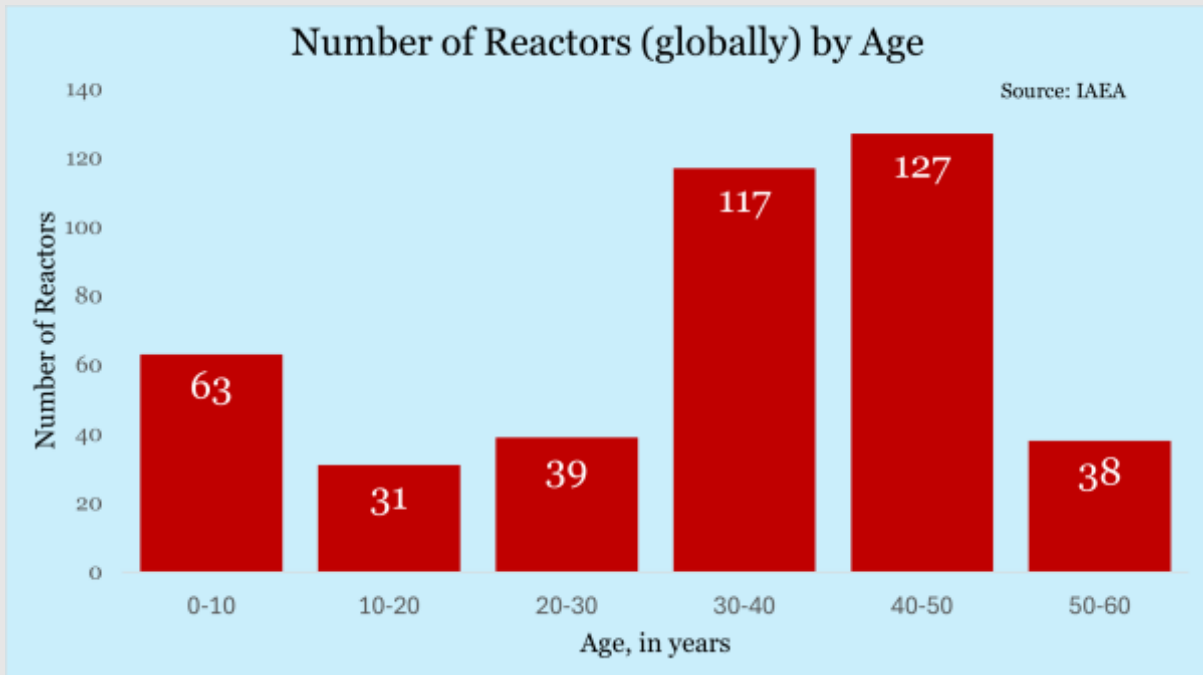
Number of Reactors (globally) by Age

Source: IAEA

Chart 2 shows the number of reactors worldwide by age.

What explains the poor uptake of nuclear energy?

But despite these advantages, there has been a serious lack of enthusiasm for the accelerated deployment of nuclear energy. Only 31 countries in the world use nuclear energy for generating electricity. And barely seven more are working towards joining this club.

Nuclear Electricity Generation (in GWh) and its Share in Global Electricity Generation
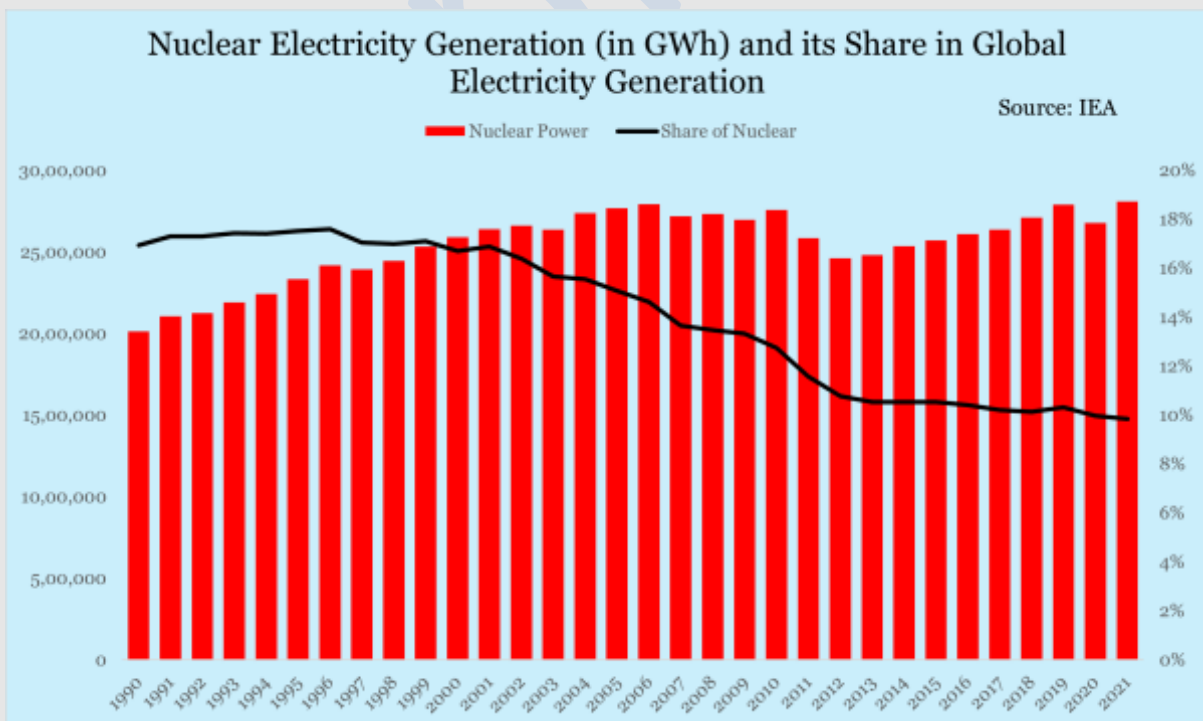
Source: IEA

Nuclear Power — Share of Nuclear

Chart 3 shows the nuclear energy generation (in GWh) and its share in global electricity generation.

The number of operational nuclear reactors has actually come down in the last 20 years, from 437 in 2003 to 411 now, IAEA data shows. The average life of these reactors is more than 31 years, which highlights the fact that few new reactors have come onboard in the last decade. The total installed electricity generation capacity has shown only a marginal increase during this period, from about 360 GW in 2003 to 371 GW now. Nuclear energy accounts for less than 10 per cent of global commercial electricity generation, and its share has been declining for almost three decades now.

Safety concerns are not the only reason for the poor uptake of nuclear energy in recent years, though those would be some of the most important, particularly after the Fukushima accident. Nuclear power also happens to be the costliest electricity right now.

Nuclear reactors require high investments and technology base, take years to build, and have to operate under a variety of regulations and constraints, making them unattractive for countries wanting to quickly ramp up their electricity generation in an affordable manner.

The kind of technology breakthroughs that have driven down the costs of solar and wind in the last decade, thus enabling rapid adoption, have not happened in the nuclear sector. The much-discussed technology of small modular reactors is far from being mature.

What is India's position on nuclear energy?
India, which currently has 23 operational nuclear reactors, does acknowledge the role of nuclear energy in its decarbonisation plan and is planning for a rapid expansion in the coming years, even though the share of nuclear energy in electricity generation is likely to remain extremely modest in the foreseeable future.

The currently operational reactors have a combined installed electricity generating capacity of 7,480 MW (about 7.5 GW). At least ten more reactors are under construction, and the capacity is supposed to triple to 22,480 MW by 2031-32. The share of nuclear energy in total electricity generation capacity is just about 3.1 per cent, among the lowest in countries that do use nuclear energy.

Only Brazil and Iran have a lower share of nuclear energy in their electricity generation mix. Even after expansion, this share is not expected to go beyond 5 per cent.

Relevance: GS Prelims & Mains Paper III; Environment
Source: Indian Express

7. With less than 150 Great Indian Bustards remaining in the wild, what's driving their extinction?

Why in News?
The Supreme Court last week said it will review its April 2021 order to bury underground all power lines in the habitat of the Great Indian Bustard (GIB), after the Centre found the order "practically impossible to implement" over long distances.

The court created a seven-member committee that will suggest steps to protect and conserve the GIB, identifying critical areas where power lines may have to go underground.

With fewer than 150 individuals of this large, ostrich-like bird species left in the wild, the critically endangered GIB is caught in a deadly maze of power lines that criss-cross its last refuge in the Kutch and Thar deserts of western India. As these vast, open landscapes also carry the promise of abundant solar and wind energy, the high-tension networks evacuating power are only getting denser with new projects proposed every year.

A dead GIB in Rajasthan's Khetloi village. Even four power line-induced deaths can make the species go extinct within 20 years, according to an assessment made by WII in 2020.

Following the deaths of a number of birds due to collisions with power lines over the years, the top court three years ago ordered that the overhead transmission network should be sent underground in key habitats of the GIB.

Why power lines kill bustards
Power lines pose a risk to all flying birds. In 2020, a study carried out by the Wildlife Institute of India (WII) in 4,200 sq km of GIB habitat in and around Desert National Park (DNP) in Rajasthan estimated that power lines killed around 84,000 birds of multiple species every year. GIBs are especially vulnerable because of their narrow frontal vision and large size. Unlike some birds that have a panoramic vision around the head, species like raptors and bustards have extensive blind areas above their heads. When they stretch their head forward to scan the ground below, they fly blind in the direction of travel.

In an affidavit submitted in court in March 2021, the Ministry of Power said: "They cannot detect power lines ahead of them from far. As they are heavy birds, they are unable to manoeuvre across power lines within close distances."

The 2020 WII study estimated that a "conservative estimate of 4 power line induced mortalities per year was sufficient" to cause the extinction of the GIB within 20 years. Acknowledging the urgency, the SC in April 2021 ordered the lines to be buried "irrespective of the cost factor".

Arguments of the Centre
In an affidavit submitted to the SC this February, the Centre said taking lines of 66 KV and higher voltage underground was not feasible for the evacuation of bulk power due to constraints such as transmission losses, maintenance challenges, multiple cable joints, increased time requirements, and concerns of safety.

"The cost implications of undergrounding of all power lines in the large area identified are very heavy — running into many thousands of crores," the Centre said. "The cost of externalities that will burden the nation", it said, were "huge" and "disproportionate".

The affidavit also said that harnessing renewable power from high-potential areas of Rajasthan and Gujarat was "essential for meeting rising power demand...and...India's international commitments on climate change".

Other threats faced by GIB
Power lines are not the only threat to the GIB. Free-ranging dogs have proliferated alarmingly in the Thar landscape. While GIBs continue to be hunted sporadically, the widespread use of pesticides in farmlands poses a greater risk to the bird. Loss of grassland, particularly nesting sites, and an erosion of support from local communities are other concerns.

In its affidavit, the Centre said the government was working to save the bustard through initiatives such as captive breeding and habitat restoration and protection. Despite teething troubles, efforts at captive breeding succeeded at Sam in Jaisalmer district, when two GIB females laid eggs in captivity and a chick was hatched through artificial incubation in March 2023.

However, the purpose of captive breeding is to supplement the wild population, which is possible only when a sizable habitat is freed of hostile infrastructure. "Burying cables is the priority, since bird diverters are not foolproof. Where undergrounding is not feasible, we should buy the best diverters and spend well on their maintenance." a former member of the Rajasthan State Wildlife Board said.

Relevance: GS Prelims & Mains Paper III; Environment
Source: Indian Express

Leopard Population in India

India's leopard numbers rose by 8% from 12,852 in 2018 to 13,874 in 2022, according to a report made public by the Environment Ministry.

Trends among States

While the highest number of leopards were reported in Madhya Pradesh (3,907), only three other States reported over 1,000 animals each — Maharashtra (1,985), Karnataka (1,879) and Tamil Nadu (1,070). While Uttarakhand reported a 22% decline in the big cat numbers — reportedly due to poaching and man-animal conflict, Arunachal Pradesh, Assam and West Bengal saw a collective 150% rise to 349 animals.

About Survey

The survey covered 20 States of India, and focused on about 70% of the animals' expected habitat, which are India's tiger reserves and protected forest areas. Unlike tigers, which are largely confined to forest reserves, leopards are far more adaptable and tend to be found in

significant numbers, in villages and sometimes, even in cities. They are also known to prey on cattle and thus be involved in conflict, resulting in higher mortality.

9. Why has India developed an atmospheric testbed near Bhopal?

Why in News?
On March 12, the first phase of India's Atmospheric Research Testbed in Central India (ART-CI) was inaugurated at Silkheda in Sehore district, located about 50 km northwest of Bhopal in Madhya Pradesh.

Funded by the Ministry of Earth Sciences (MoES), the facility will house 25 high-end meteorological instruments for studying vital cloud processes associated with the monsoons over central India's Monsoon Core Zone (MCZ).

What is the Atmospheric Research Testbed (ART)?
The ART is an open-field, focused observational and analytical research programme at Silkheda.

The facility aims to conduct ground-based observations of weather parameters like temperature, wind speeds, etc. and in-situ (on-site) observations of the transient synoptic systems – like low-pressure areas and depressions that form in the Bay of Bengal – during the southwest monsoon season from June to September.

Studying these systems and their associated cloud parameters will be used to generate high volumes of data over a long period. It can then be compared with the existing weather models so that improvements can be made to obtain accurate rainfall predictions.

The setup at ART will also be used for calibrating and validating various satellite-based observations, part of weather predictions and forecasting.

Spread over 100 acres, the ART has been developed by the Ministry of Earth Sciences for Rs 125 crore. The Indian Institute of Tropical Meteorology (IITM), Pune, is in charge of the operations.

Under the first phase, remote sensing-based and in-situ measurements using 25 meteorological instruments have commenced. In the second phase, ART will deploy instruments such as a radar wind profiler and balloon-bound radiosonde, and soil moisture and temperature measuring equipment.

Why is having an Atmospheric Research Testbed important?
At present, 45% of India's labour force is employed in the agriculture sector. Much of Indian agriculture is rain-fed, as is cultivation along the Monsoon Core Zone (MCZ), which spans the central India region from Gujarat to West Bengal.

The southwest monsoon season accounts for 70 per cent of the country's annual average rainfall (880mm). Throughout India, the majority of Kharif cultivation is undertaken between July and August, which see an average monthly rainfall of 280.4mm and 254.9mm (1971–2020 average), respectively.

During this four-month-long season, several rain-bearing synoptic systems, namely the low pressures or depressions, develop in the Bay of Bengal. Inherently, these systems move westwards/northwestwards over to the Indian mainland and pass through the MCZ, causing bountiful rainfall.

Why is it important to have data about monsoons over central India?
Studies have correlated the all-India rainfall performance to the rainfall received over the central India region, highlighting its importance.

The India Meteorological Department (IMD) issues rainfall forecasts for the country's four homogeneous regions – north, west, east and south peninsular India. In addition, it issues a special rainfall forecast for the MCZ, which is considered India's food bowl.

However, there is still limited understanding about the role of these synoptic systems, their associated cloud physics, cloud properties and their overall role in enhancing the monsoon rainfall.

Central India, therefore, acts as a natural laboratory for scientists and meteorologists to perform a hands-on study of the Indian monsoons. They can record data and make observations about the allied systems, clouds, and other associated physical and atmospheric parameters.

Additionally, climate change is driving erratic rainfall patterns in the tropical regions, like India. It has also strengthened the low-pressure systems, which are aided by high temperatures. This results in very heavy rainfall recorded along their trajectory during the monsoons.

Now, with ART, scientists will be able to generate and obtain long-term observations on cloud microphysics, precipitation, convection, and land-surface properties, among a host of other parameters.

This information will be assimilated and fed into the numerical weather models to enhance forecast output, especially the rainfall forecasts. More accurate forecasts will ultimately help the farming community plan their activities better.

Why Madhya Pradesh?
The ART has been established at Silkheda, a location that falls directly in line with the path of major rain-bearing synoptic systems. This will facilitate direct monitoring and tracking.

Besides, the locality is pristine and free of anthropogenic and other pollutants, making it the best site in central India for setting up sensitive, high-end meteorological instruments and observatories for recording data.

What instruments are ART equipped with?
To obtain continuous observations of convection, clouds, and precipitation, and monitor the major modes of variabilities, the ART is equipped with over two dozen high-end instruments, radars and more. At 72 metres, ART will house India's tallest meteorological tower.

Some of the instruments deployed are an aethalometer for performing aerosol studies, a cloud condensation nuclei counter, a laser ceilometer to measure cloud sizes, a micro rain radar to calculate raindrop size and its distribution, and a Ka-band cloud radar and a C-band doppler weather radar to help track the movement of rain-bearing systems over this zone.

Relevance: GS Prelims; Environment
Source: The Indian Express

10. Kerala declares man-animal conflict a state-specific disaster: What changes with this?

Why in News?
Amid repeated deaths from animal attacks and rising anger over them, Kerala recently declared man-animal conflict as a state-specific disaster, becoming the first state in the country to do so.

Human-animal conflict declared as State-Specific Disaster in Kerala

What changes

At present, managing man-animal conflict is the responsibility of the forest department, which acts as per the Wild Life Protection Act. Once the issue is declared a state-specific disaster, the onus to deal with it shifts to the state disaster management authority, which, powered by the Disaster Management Act, can take quicker and more decisive action.

At the state level, the Chief Minister is the ex officio chairman of the body, and several departments, including the forest department, are stakeholders. In the districts, the district disaster management authority is headed by the district collector, who is also the executive magistrate.

Once an issue is declared a state-specific disaster or a national disaster, the disaster management authority can take quick decisions and actions overriding all other norms. Also, district collectors can directly intervene in their capacity as the chairman of the district disaster body.

Why the change

In the past few weeks, every time a life has been lost to man-animal conflict, there has been a mounting chorus to tranquilise/capture/kill the animals responsible.

At present, the chief wildlife warden — there is only one such post in the state — is the only authority to take a call on a wild animal wreaking havoc in human settlement. Also, in the past, there have been cases where the decision to tranquilise a killer animal, such as a wild elephant, has been questioned in court.

Once the issue is under the disaster management authority, it can take actions overriding other norms, including those under the Wildlife Protection Act.

As per section 71 of the Disaster Management Act, no court (except the Supreme Court or a High Court) shall have jurisdiction to entertain any suit or proceeding in respect of anything done by relevant authorities in pursuance of any power conferred by this Act. Section 72 of

the Act says that the provisions of this Act will have an overriding effect on any other law during the specific period that a disaster has been declared.

Other state-specific disasters
In 2015, Odisha had declared snakebite a state-specific disaster. In 2020, Kerala declared Covid as a state specific disaster. Besides, heat waves, sunburn and sunstroke have been declared so in 2019, the phenomenon of soil piping in 2017, and lightning and coastal erosion in 2015.

Relevance: GS Prelims & Mains Paper III; Disaster Management
Source: The Indian Express

Science & Technology

1. PM Modi launches hydrogen-powered ferry: features, significance

Built at a cost of Rs 18 crore, the ferry will be handed over to the Inland Waterways Authority of India by the CSL after rigorous trials.

Why in news?
Prime Minister Narendra Modi virtually launched India's first indigenously developed hydrogen fuel cell ferry. The vessel, manufactured by Cochin Shipyard Limited (CSL), will be deployed for service at Varanasi in Uttar Pradesh.

Built at a cost of Rs 18 crore, the ferry will be handed over to the Inland Waterways Authority of India by the CSL after rigorous trials. The Ministry of Ports, Shipping and Waterways met 75 per cent of the project cost.

What are the special features of the vessel?
The Hydrogen fuel cell vessel is a 24-meter-long catamaran, which can carry 50 people in its air-conditioned passenger area. The accommodation area has been constructed with high-quality fiberglass reinforced plastic, similar to metro train coaches.

Hydrogen fuel cell vessels do not use conventional batteries as the primary storage house of electrical energy. The vessels run on hydrogen fuel, which is stored in cylinders. This boat has five hydrogen cylinders that can carry 40kg of hydrogen and support eight hours of operations. The vessel is also fitted with a 3-kW solar panel.

The hydrogen fuel cell-powered vessel has zero emission, zero noise and is energy-efficient, which makes it more environment-friendly. Since there are no moving parts, the ferry requires less maintenance than combustion vessels.

How do hydrogen fuel cells work?

A hydrogen fuel cell generates electricity by utilising the chemical energy contained in hydrogen. It releases only pure water, not discharging pollutants. Hydrogen is loaded into cells. The energy within the hydrogen is converted into electricity and heat, which is then used to power the vessel's propulsion mechanism. In the fuel cell, the hydrogen reacts with the oxygen in the air to produce electricity. Unlike batteries, hydrogen fuel cells do not require recharging. Provided uninterrupted supply of fuel and oxygen, these cells would work continuously.

What type of cells have been used in the vessel?

This vessel uses a 50-kW PEM (proton-exchange membrane) fuel cell, with Lithium-Ion Phosphate batteries. The advantage is that the cells can quickly change their output depending upon the power demand. PEM fuel cells are popular in automotive applications because they operate at a lower temperature, and are lighter and more compact.

How was it developed?

India has now indigenously developed hydrogen fuel cells and their related systems. The vessel has been built completely by the CSL. The hydrogen fuel cell system was developed by KPIT Technologies, Pune, in collaboration with the Council of Scientific and Industrial Research Labs, under the Union Ministry of Science and Technology.

While hydrogen fuel cell technology has been under development for maritime applications, only a few countries globally have done demonstration projects. This ferry, thus, has given India an early mover advantage to tap the potential of hydrogen as an emerging green fuel in the marine sector.

The 'Harit Nauka' (green boat) initiative of the Ministry of Ports, Shipping and Waterways envisages a green transition of inland vessels. In line with this, the ferry can be replicated in other parts of the country for urban mobility. It is also a boost to the National Green Hydrogen Mission.

What is the Harit Nauka initiative?

In January 2024, the shipping ministry unveiled the Harit Nauka guidelines for inland vessels. As per the guidelines, all states have to make efforts to use green fuels for 50 per cent of inland waterways-based passenger fleets in the next one decade, and 100 per cent by 2045. This is to reduce greenhouse gas emissions as per the Maritime Amrit Kaal Vision 2047.

Globally, the shipping industry is increasingly transitioning to green fuels due to environmental regulations, sustainability goals, and advancements in green fuel technologies. Hydrogen and its derivatives are gaining attention for promising zero-emission fuels for the industry.

Relevance: GS Prelims & Mains Paper III; Science & Technology
Source: The Indian Express

2. How to bring about White Revolution 2.0?

Findings of latest Household Consumption Expenditure Survey
The government's latest Household Consumption Expenditure Survey (HCES) for 2022-23 shows milk emerging as India's top food spend item, both in rural and urban areas.

The monthly value of milk and dairy products consumed by an average person in rural India, at Rs 314, was ahead of vegetables (Rs 203), cereals (Rs 185), egg, fish & meat (Rs 185), fruits (Rs 140), edible oil (Rs 136), spices (Rs 113) and pulses (Rs 76).

The HCES data reveals the same for urban India: Milk (Rs 466), fruits (Rs 246), vegetables (Rs 245), cereals (Rs 235), egg, fish & meat (Rs 231), edible oil (Rs 153), spices (Rs 138) and pulses (Rs 90).

The challenge
Indians spending more on milk – viewed as a "superior" food – is good news for the dairy industry, especially farmers. But this could face headwinds from two sources.

The first relates to consumer demand itself from inflation. The all-India modal (most-quoted) price of milk has gone up from Rs 42 to Rs 60 per litre in the last five years, according to the department of consumer affairs. Much of the increase – from Rs 52 to Rs 60 – has happened in the last one year alone.

The second has to do with the cost of fodder, feed and raw materials/ingredients. As these have increased significantly, dairies have had to hike procurement prices paid to farmers and, in turn, pass-through the same to consumers.
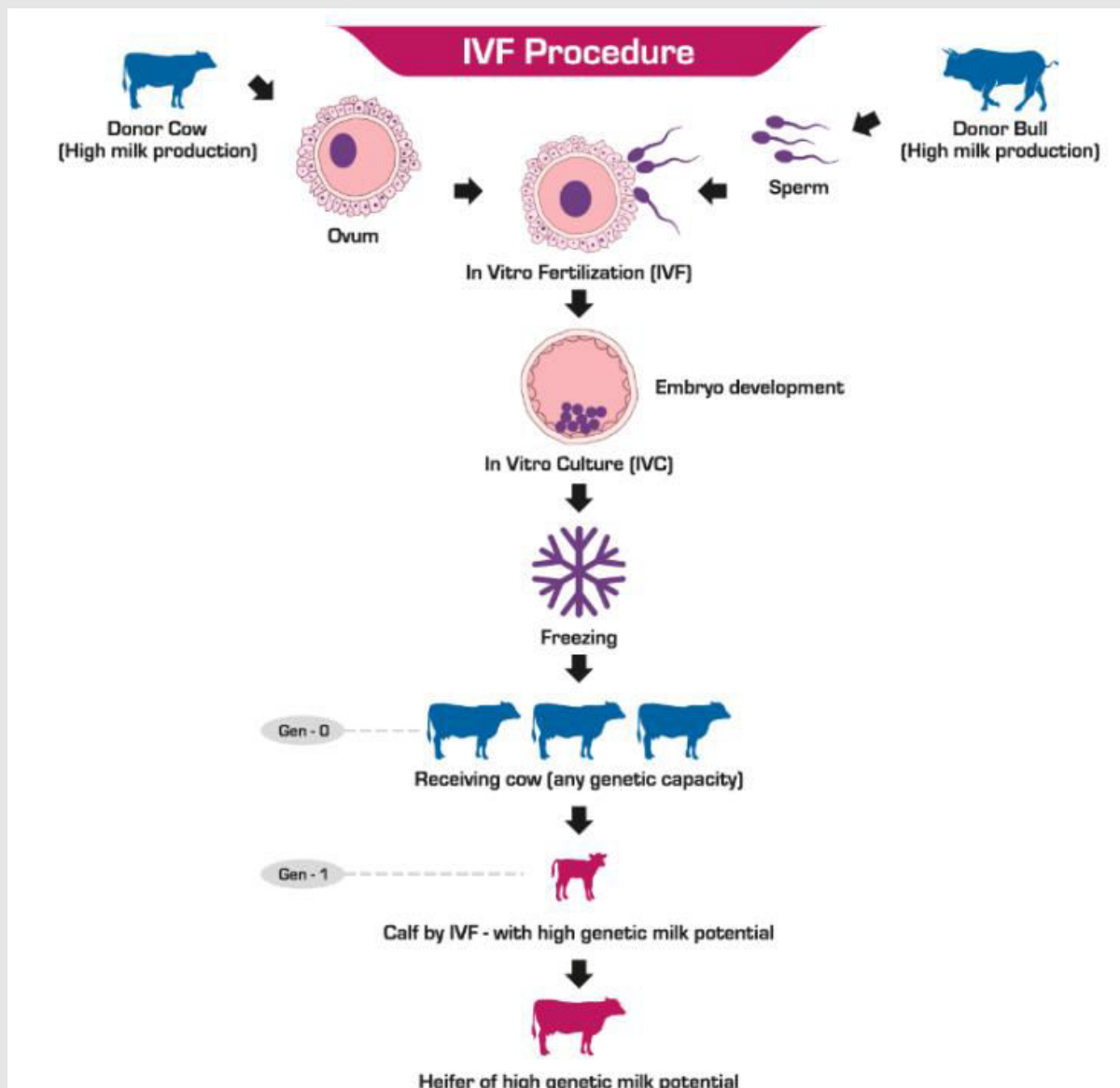
Solution required
There's a limit to how much more the consumer can pay for milk without it causing demand destruction. If farmer incomes are to be raised without shrinking domestic demand and eroding the global competitiveness of the Indian dairy industry, the only solution is to reduce the cost of milk production.

How can that be achieved?
One way is to boost milk yield per animal through genetic improvement and new breeding technologies.

A typical crossbred cow giving birth first at 24-30 months can produce 5-7 calves over its lifetime. The normal breeding route, whether natural or via artificial insemination (AI), would result in only 50% of these being female calves or future milk-producing cows. But with the use of sex-sorted (SS) semen, there is a 90%-plus probability of only female calves being born, as against 50:50 with conventional semen.

IVF Procedure

Donor Cow (High milk production) → Ovum → In Vitro Fertilization (IVF) ← Sperm ← Donor Bull (High milk production)

Embryo development — In Vitro Culture (IVC)

Freezing

Gen - 0 — Receiving cow (any genetic capacity)

Gen - 1 — Calf by IVF - with high genetic milk potential

Heifer of high genetic milk potential

ET and IVF

A good cow, even with SS semen, can produce, at best, 5-6 as-good future milkers. That's where embryo transfer (ET) technology, to exploit the high genetic merit (HGM, i.e. milking potential) of an existing cow, comes in.

ET entails injecting follicle-stimulating hormone in cows to make them release multiple ova (eggs) in a single estrous cycle. These ova – numbering 4-6 in Jersey, 6-8 in Holstein Friesian (HF) and 10-15 in Gir cows – are fertilised by sperms from the semen of a proven genetically-superior bull. The fertilised eggs (zygotes) are, then, collected from inside the donor cow and transferred for implanting in the uteruses of multiple recipient animals.

Multiple ovulation and ET, thus, enables production of several calves from a single HGM cow. With 6 such procedures, each yielding 6 viable embryos, and 33-35% conception rate, it would result in some 12 calves being born from every donor cow per year.

A more recent technology involves extracting the oocytes or immature ova directly from the cow's ovaries using an aspiration pump. The oocytes – about 10-50 can be collected from each ovary at a time – are kept in an incubator for 24 hours to develop into ova. In this case, the fertilisation of the mature ova takes place in vitro, i.e. outside the cow's body, in a petri-dish where the sperms are introduced. The zygotes formed remain in the in vitro culture medium for another six days, before ready for transfer to the recipient cows. With 20 procedures, 5 viable embryos per procedure and 33-35% conception, there can be 33-35 calves per donor cow per year. This is as compared with 5-7 calves during its entire lifetime through normal breeding!

Taking to farmer
Amul, in March 2020, opened a Bovine Breeding Centre at Mogar in Gujarat's Anand district. The objective was to breed a nucleus herd of HGM bulls and cows, whose superior semen and in vitro-fertilised embryos frozen at minus 196 degrees Celsius, could be used for Artificial Insemination or transferring into the animals of farmers.

Animal nutrition
Genetics apart, there is intervention required to bring down feeding costs of animals. This should be done by farmers cultivating high-yielding protein-rich green fodder grasses and reducing reliance on expensive compound cattle feed and oil-meal concentrates.

For this, Amul is putting up a 30-tonnes-per-day Total Mixed Ration (TMR) plant at Sarsa in Anand. TMR will contain dry and green fodder, along with concentrates, vitamins and mineral mixtures, in a ready-to-eat mashed form for animals. It would save farmers the cost of purchasing and storing fodder separately, and administering it in addition to cattle feed.

The focus of White Revolution 2.0 would clearly have to be on lowering the cost of producing milk at the farm-gate, as opposed to increasing procurement prices year after year.

Relevance: GS Prelims & Mains Paper III; S&T
Source: The Indian Express

3. Apple's PQ3 post-quantum cryptographic protocol seeks to protect messages on iMessage from hackers using quantum computers. The protocol can protects communications against current and future decryptions
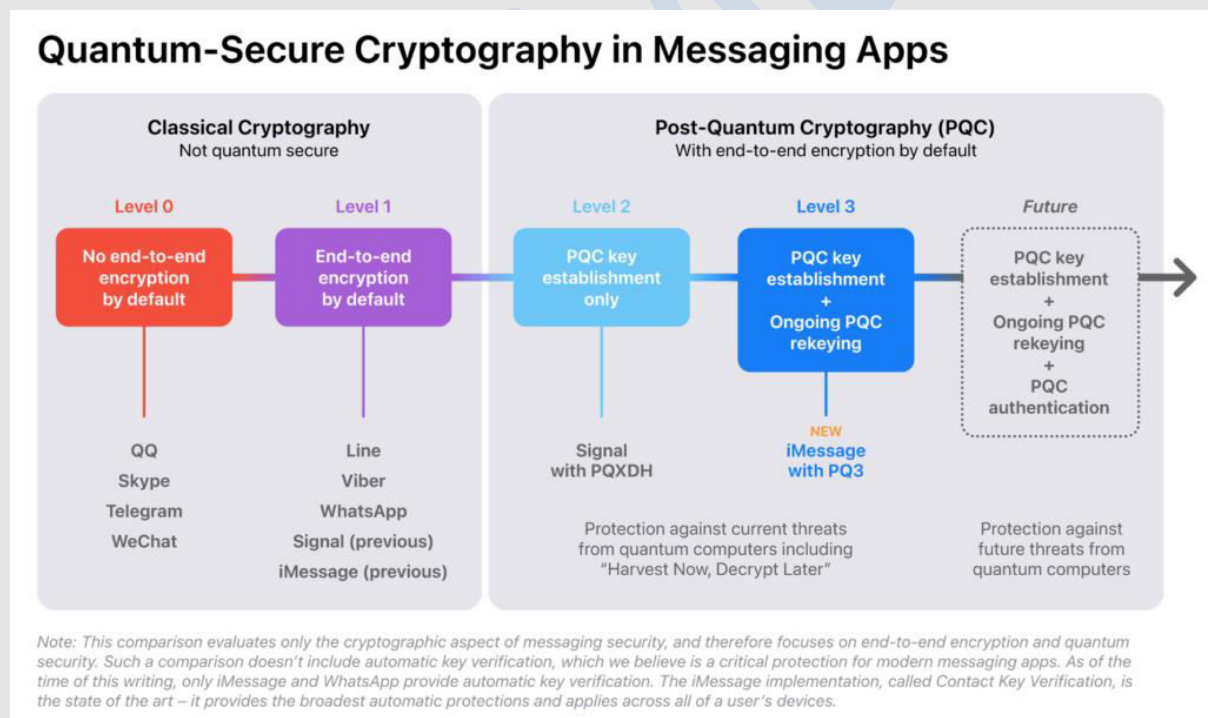
Why in news?
On February 21, Apple announced PQ3, a post-quantum cryptographic protocol, to encrypt conversations in iMessage. The company called it the "first messaging protocol to reach Level 3 security" and claimed it can defend "highly sophisticated quantum attacks." As per Apple, this protocol's security layer will surpass those available in all widely used messaging apps.

What is the PQ3 protocol, and how does it work?

Currently, most messaging apps have standard encryption methods which use public and private keys to securely deliver messages. There are two encryption methods. In the public key encryption method, a user's message is encrypted by the public key before transmission and then the private key is used to decrypt messages. In the private key method, while both keys are required, they are basically the same, and both the sender and the recipient are allowed to encrypt or decrypt the message.

Apple's PQ3 protocol uses a hybrid design combining traditional encryption methods with post-quantum encryption both during the initial key establishment between devices and during rekeying, which essentially rechecks the cryptographic keys between devices to ensure continued protection.

Under the PQ3 protocol each device generates public keys locally and then transmits them to Apple servers as part of the iMessage registration process using the Module Lattice-based Key Encapsulation Mechanism or ML-KEM. This enables the sender device to get the receiver device's public keys and generate post-quantum encryption keys for the first message. Apple has also included a periodic post-quantum rekeying mechanism within the conversation which is capable of self-healing from key compromise and safeguarding future messages.

Quantum-Secure Cryptography in Messaging Apps

Classical Cryptography — Not quantum secure

Post-Quantum Cryptography (PQC) — With end-to-end encryption by default

Level 0	Level 1	Level 2	Level 3	Future
No end-to-end encryption by default	End-to-end encryption by default	PQC key establishment only	PQC key establishment + Ongoing PQC rekeying	PQC key establishment + Ongoing PQC rekeying + PQC authentication
QQ Skype Telegram WeChat	Line Viber WhatsApp Signal (previous) iMessage (previous)	Signal with PQXDH	NEW iMessage with PQ3	
		Protection against current threats from quantum computers including "Harvest Now, Decrypt Later"		Protection against future threats from quantum computers

Note: This comparison evaluates only the cryptographic aspect of messaging security, and therefore focuses on end-to-end encryption and quantum security. Such a comparison doesn't include automatic key verification, which we believe is a critical protection for modern messaging apps. As of the time of this writing, only iMessage and WhatsApp provide automatic key verification. The iMessage implementation, called Contact Key Verification, is the state of the art – it provides the broadest automatic protections and applies across all of a user's devices.

Why is Apple shifting to PQ3 protocol?
Currently, Apple's iMessage supports end-to-end encryption by default. This mode of protection relies on mathematical problems that could potentially be solved by powerful quantum computers.

Over the years, Apple has made improvements to encryption, enhancing its platform's overall protection against hackers. However, current cryptographic problems can be solved by quantum computers, though such computers are still in the works. Apple says extremely well-resourced attackers can mount attacks by taking advantage of the drop in data storage costs. Essentially, attackers can store large amounts of today's encrypted data and file it for future reference. And though attackers may not be able to decrypt this data today, they can retain it until it can be decrypted at a later date by making use of a quantum computer.

Are other messaging services also using methods like PQ3?
Currently in beta, PQ3 will start to roll out with the public release of iOS 17.4, iPadOS 17.4, macOS 14.4, and watchOS 10.4. However, this is not the first time a tech company has announced post-quantum encryption protocols.

Earlier in September 2023, Signal announced advancements in quantum resistance for the Signal Protocol.

The upgrade called PQXDH added a layer of protection against the threat of quantum computers being built for the future. The upgrade used a new post-quantum cryptosystem that implemented one-way functions that cannot be advantageously reversed by a quantum computer.
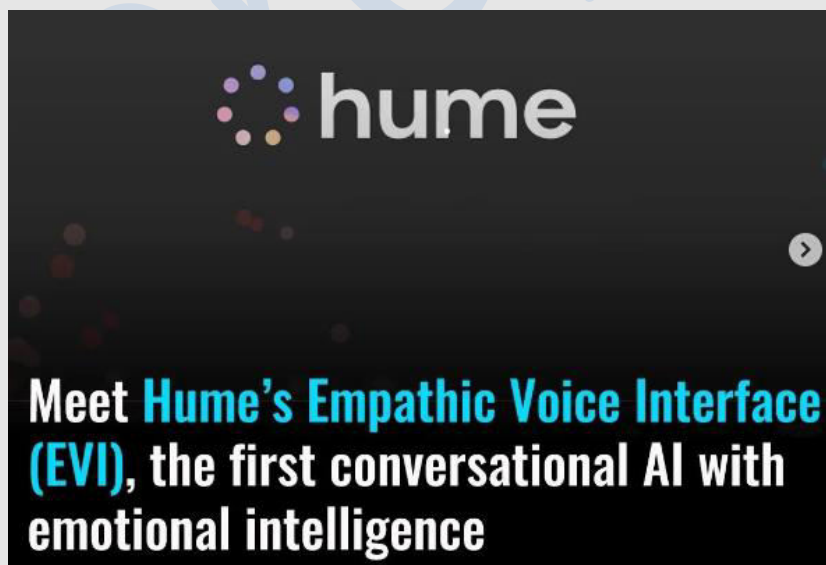
Relevance: GS Prelims; Science & Technology
Source: Indian Express

4. The world's 1st conversational AI with emotional intelligence from Hume

Why in News?
Artificial Intelligence is doing wonders. From turning text prompts to images with Dall.E to turning them into entire videos with Sora, some of AI's latest achievements push the envelope of plausibility. But not everyone is worried about just generating content, some innovators are using the technology to create great companions. The "intelligent and kind" chatbot Pi from Inflection AI is one of them.

Now, Hume, a New York-based research lab and

technology company, has introduced what can be called the 'first conversational AI with emotional intelligence'.

What is an AI with emotional intelligence?
To put this into perspective, all recent AI apps follow instructions. Now, imagine if they could also understand the user's feelings and the meanings behind their words. This is what Hume's new AI voice interface does. The company claims that it is building empathic AI that could 'serve human well-being' through an application programming interface (API) that can interpret emotional expressions and come up with empathic responses.

How can it be used?
Perhaps, the most standout feature of Hume's conversational AI technology is its integration capability, rather than being just a solitary application. Based on the claims, it seems the technology may revolutionise several fields by powering applications with humanlike interactions.

Potential future uses include AI assistants who can converse in a humanlike manner, customer support agents who can provide a more natural and relatable service, and therapists adept at comprehending a wide range of human emotions and thoughts.

About Hume AI
The company believes that its mission is to ensure that AI is built to serve human goals and emotional well-being. The company is named after the late Scottish philosopher and historian David Hume. "Hume argues that emotions drive choice and well-being. At Hume AI, we take this as a guiding principle behind ethical AI: in order to serve our preferences, algorithms should be guided by our emotions," reads the bio of the company.

Relevance: GS Prelims & Mains Paper III; Science & Technology
Source: Indian Express

5. Why is the core-loading event of the Prototype Fast Breeder Reactor being hailed as a milestone? What does the reactor do? Why has the event taken so long to materialise?

Why in news?
On March 4, Prime Minister Narendra Modi witnessed the start of the process of core-loading the indigenous Prototype Fast Breeder Reactor (PFBR) at the Madras Atomic Power Station in Kalpakkam, Tamil Nadu. A statement from his office called the occasion "a historic milestone in India's nuclear power programme".

What is the PFBR?
The PFBR is a machine that produces more nuclear fuel than it consumes. Its core-loading event is being hailed as a "milestone" because operationalisation of the PFBR will mark the start of stage II of India's three-stage nuclear power programme.

In the first, India used Pressurised Heavy Water Reactors (PHWRs) and natural uranium-238 (U-238), which contains minuscule amounts of U-235, as the fissile material.

Only U-235, not U-238, can sustain a chain reaction but it is consumed fully in stage I. In stage II, India will use Pu-239 together with U-238 in the PFBR to produce energy, U-233, and more Pu-239. The Department of Atomic Energy (DAE) set up a special-purpose vehicle in 2003 called Bharatiya Nabhikiya Vidyut Nigam, Ltd. (BHAVINI) to implement stage II.

In stage III, Pu-239 will be combined with thorium-232 (Th-232) in reactors to produce energy and U-233. Homi J. Bhabha designed the three-stage programme because India hosts roughly a quarter of the world's thorium. The three stages are expected to make the country completely self-sufficient in nuclear energy.

Why was the PFBR delayed?
The PFBR saga in India has been associated with numerous delays, cost overruns, and broken promises, and has accrued many critics.

The fast breeder test reactor (FBTR) at Kalpakkam is a testing ground for PFBR technologies. It was built by 1977 but sanctions against India's 'Smiling Buddha' nuclear test forced the use of a mixed carbide fuel over enriched uranium (which France was to deliver). The former lowered the power output and changed operating conditions. By the time the Indian government green-lit the PFBR in 2003, most people who worked on the FBTR were also nearing or had completed retirement.

Three Stage Indian Nuclear Programme
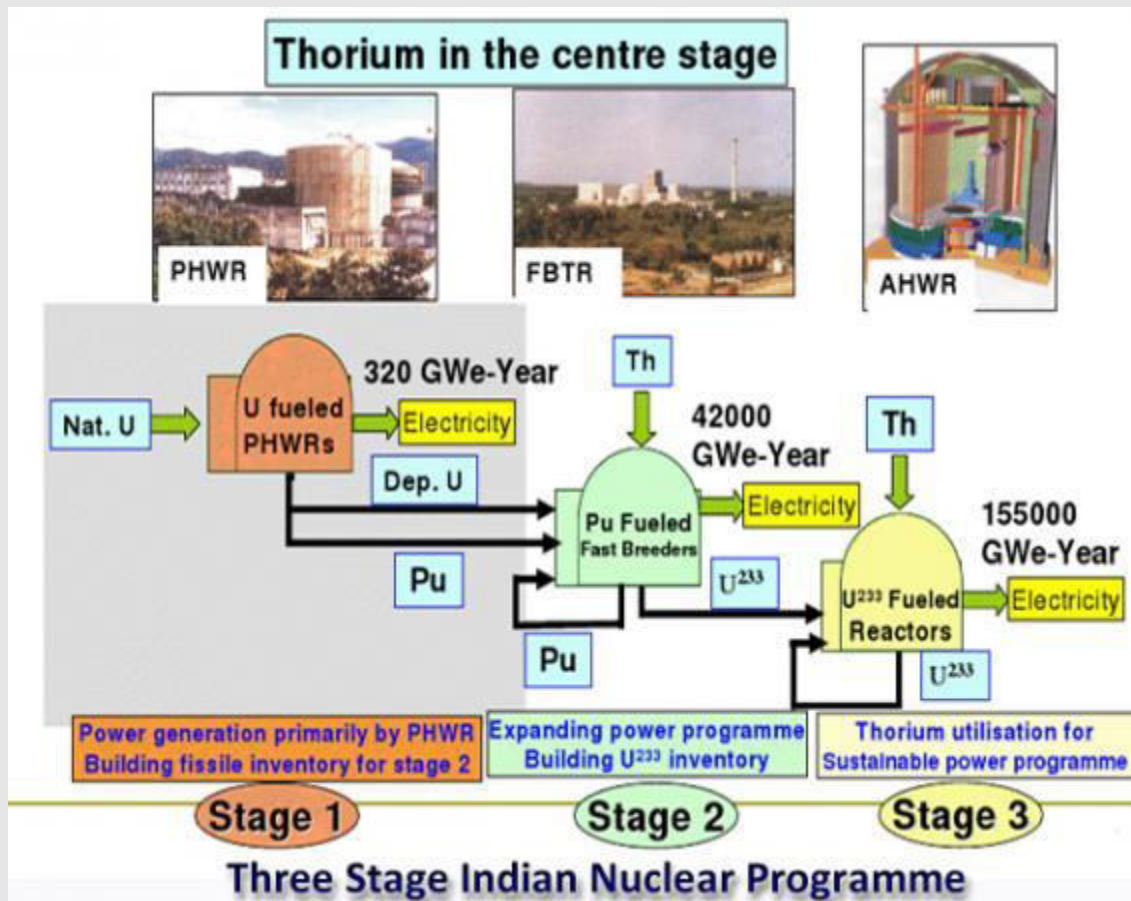
The Indira Gandhi Centre for Atomic Research (IGCAR), Kalpakkam, designed the PFBR. Its original cost was ₹3,492 crore and the original deadline, 2010. Six years later, the DAE sought more funds and an extended deadline, which the government granted in 2012 — ₹5,677 crore and commercial operations by March 2015. The nuclear power establishment further pushed the deadline to the next year, then the year after that, and so on until by March 2020, the new deadline to commercialise was October 2022. Even by 2019, its cost had ballooned to ₹6,800 crore. In a 2014 audit, the Comptroller and Auditor General found BHAVINI had fumbled the procurement of some PFBR components by becoming inordinately dependent on the Nuclear Power Corporation of India, Ltd. The result: the placement of a hundred purchase orders had a "median delay" of 158 days per order. Other causes of delay included technical difficulties with the reactor coolant.

What are the challenges of stage II?

On the flip side, bigger challenges await. FBRs are harder to handle than other reactor designs, whereas the DAE has acquired an unfavourable public reputation over its often heavy-handed response to safety concerns.

Further, the civilian nuclear programme's nodal regulatory body, the AERB, was set up by executive order and reports ultimately to the DAE secretary. In 2015, the International Atomic Energy Agency urged India to set up an independent statutory atomic regulator instead.

The DAE had responded to similar concerns with the Nuclear Safety Regulatory Authority (NSRA) Bill in 2011. It sought to replace the AERB with the NSRA. But it was criticised for allowing the Union government too much control over the NSRA's composition.

Finally, among other products, the thorium fuel cycle produces caesium-137, actinium-227, radium-224, radium-228, and thorium-230 — all isotopes radioactive in ways that complicate their handling and storage.

6. MethaneSAT, a satellite which will 'name and shame' methane emitters

Why in News?
MethaneSAT — a satellite which will track and measure methane emissions at a global scale — was launched aboard a SpaceX Falcon9 rocket from California recently.

While the satellite is not the first spacecraft to identify and quantify methane emissions, it will provide more details and have a much wider field of view than any of its predecessors.

Here is all you need to know about MethaneSAT.

But first, why do we need to track and measure methane emissions?
Methane is an invisible but strong greenhouse gas, and the second largest contributor to global warming after carbon dioxide, responsible for 30 per cent of global heating since the Industrial Revolution.

The gas also contributes to the formation of ground-level ozone — a colourless and highly irritating gas that forms just above the Earth's surface. According to a 2022 report, exposure to ground-level ozone could be contributing to one million premature deaths every year. Therefore, it is crucial to cut methane emissions.

What is MethaneSAT?
The entity behind MethaneSAT is the Environmental Defense Fund (EDF) — a US-based nonprofit environmental advocacy group. To develop the satellite, EDF partnered with Harvard University, the Smithsonian Astrophysical Observatory, and the New Zealand Space Agency.

Essentially, MethaneSAT will orbit the Earth 15 times a day, monitoring the oil and gas sector. It will create a large amount of data, which will tell "how much methane is coming from where, who's responsible, and are those emissions going up or down over time", according to a statement by EDF.

The data collected by MethaneSAT will be made public for free in near real-time. This will allow stakeholders and regulators to take action to reduce methane emissions.

The collected data will be analysed using cloud-computing and AI technology developed by Google — the company is a mission partner — and the data will be made public through Google's Earth Engine platform.

Why is it significant?
The launch of MethaneSAT has come at a moment when the world is implementing more stringent methane management policies. For instance, more than 150 countries signed the Global Methane Pledge in 2021, to cut their collective methane emissions by at least 30 per cent from 2020 levels by 2030. At last year's COP, more than 50 companies committed to virtually eliminating methane emissions and routine flaring. MethaneSAT will help them meet these targets.
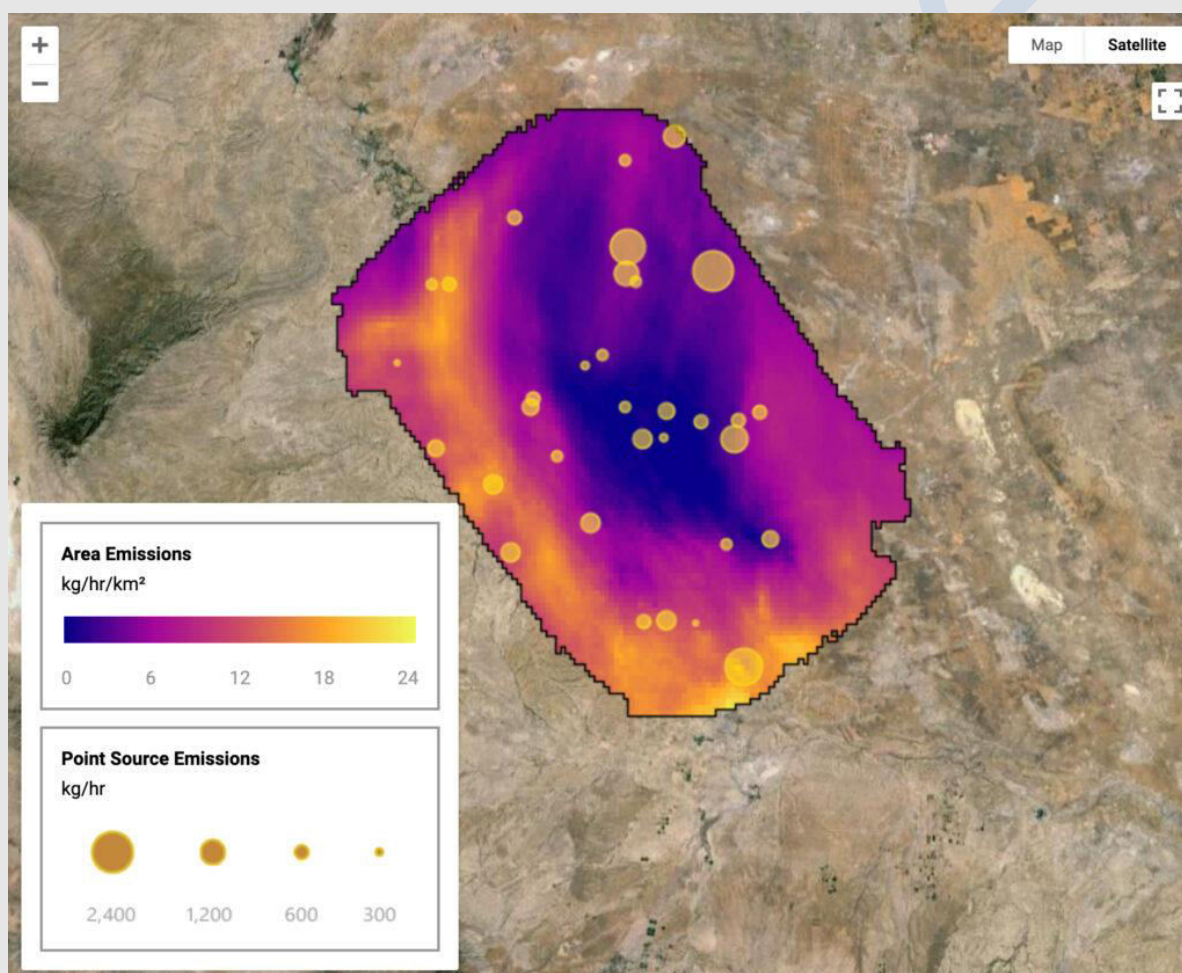
The satellite will also usher in a new era of transparency. Its publicly available data, which can be accessed by anyone in the world, will keep track of methane commitments made by governments and corporations.

Relevance: GS Prelims & Mains Paper III; Science & Technology
Source: The Indian Express

7. Why is ISRO building a second rocket launchport?

Why in news?

Prime Minister Narendra Modi laid the foundation stone of the second rocket launchport of the Indian Space Research Organisation (ISRO) at Kulasekarapattinam. Situated at a geographically advantageous location in coastal Tamil Nadu's Thoothukudi district, the facility costs Rs 986 crore. It will be extensively and exclusively used for commercial, on-demand, and small satellite launches in the future.
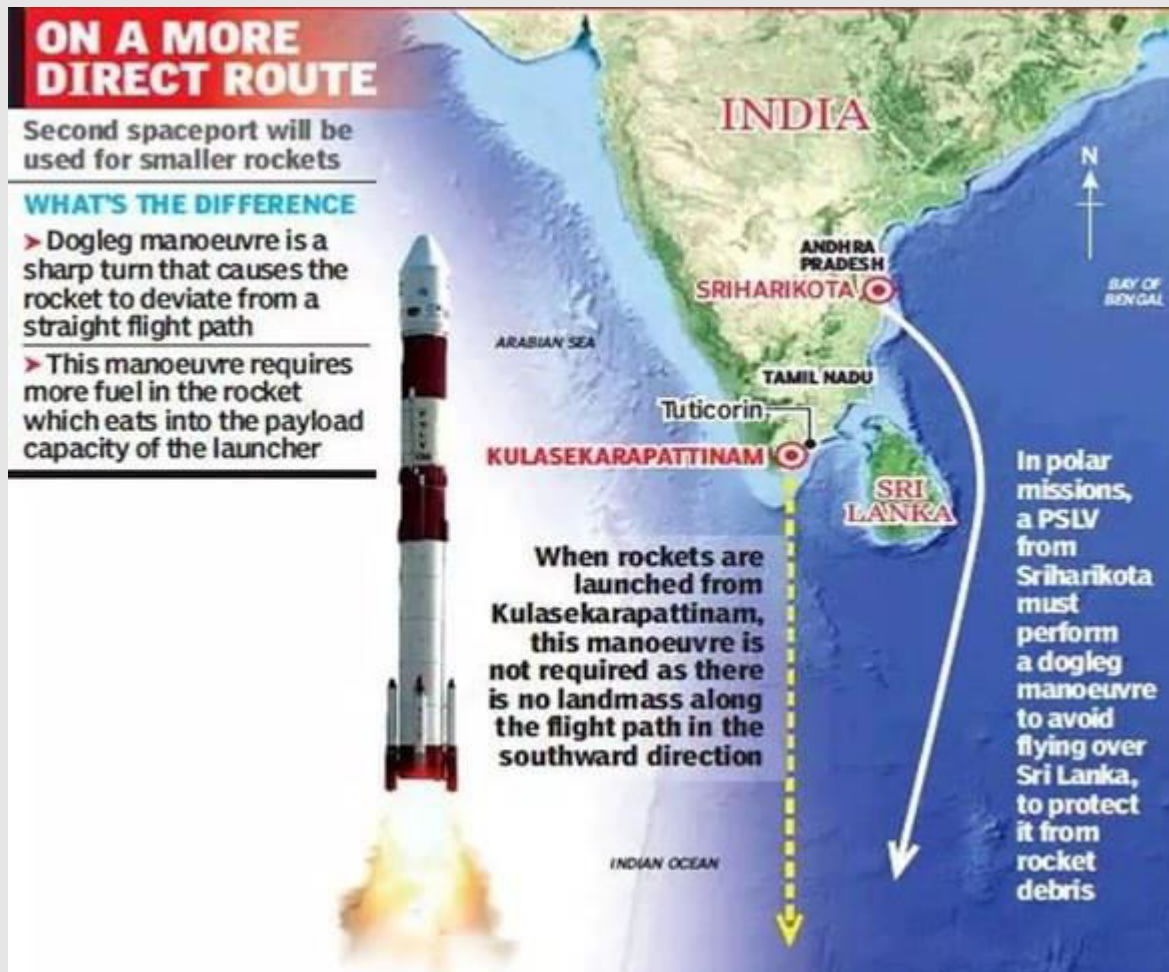
Why does India need a new launchport?

With the Union government's recent policy announcing the opening of the space sector to private players, a sharp rise in the number of commercial launches is certain. To ensure that ISRO's first launchport, the Satish Dhawan Space Centre (SDSC) SHAR in Sriharikota, is not overburdened with a high number of launches, the space agency has decided to build another facility.

While SHAR will be only used for launching bigger and heavy-lift-off missions, the Kulasekarapattinam launchport will be used to launch smaller payloads. SHAR will also be available for India's big ticket missions to the Moon, Venus, and much touted human-flight mission, the Gaganyaan.

Why is the new launchport located in Tamil Nadu?

Geographically, scientifically, and strategically, the Kulasekarapattinam launchport provides a natural advantage to ISRO's future launches pertaining to the Small Satellite Launch Vehicle (SSLV).

Allowing a direct southward and smaller launch trajectory for the light weight SSLVs carrying less fuel, the Kulasekarapattinam facility will boost ISRO's attempts to enhance payload capacities.

ON A MORE DIRECT ROUTE

Second spaceport will be used for smaller rockets

WHAT'S THE DIFFERENCE

➤ Dogleg manoeuvre is a sharp turn that causes the rocket to deviate from a straight flight path

➤ This manoeuvre requires more fuel in the rocket which eats into the payload capacity of the launcher

When rockets are launched from Kulasekarapattinam, this manoeuvre is not required as there is no landmass along the flight path in the southward direction

In polar missions, a PSLV from Sriharikota must perform a dogleg manoeuvre to avoid flying over Sri Lanka, to protect it from rocket debris

Currently, the trajectory followed by all launches from SHAR are longer as they follow a path which requires the vehicle to skirt eastwards around Sri Lanka before taking the actual southward flight. This consumes additional fuel. However, the same would not be required for future launches from Kulasekarapattinam, which is geographically located several kilometers to the west of Colombo, thereby allowing a straight southward flight and simultaneously saving the already limited fuel available onboard SSLV.

Notably, both the launchports are located on Southern India, near the equator.For a launch site close to equator the magnitude of the velocity imparted due to Earth's rotation is about 450 m/s, which can lead to substantial increase in the payload for a given launch vehicle. Geostationary satellites must necessarily be in the equatorial plane. So, for such satellites, closer the launch site is to the equator the better it is.

What is the status of the new launchport?
The Tamil Nadu government has completed the acquisition of over 2,000 acres of land in Kulasekarapattinam. This has now been handed over to ISRO.

S Somanath, chairman, ISRO, informed last week that it may take up to two years for the completion of the construction at the site. The new facility could permit anywhere between 20 to 30 SSLV launches, annually.

What are SSLVs and what are they used for?
SSLV is the new small satellite launch vehicle developed by ISRO to cater for the launch of small satellites. It has a three-stage launch vehicle, having a lift-off weight of about 120 tonnes and is 34 metres in length and 2 metres in diameter. SSLV is designed with a three-stage solid propulsion and a liquid propulsion stage, which is the terminal stage.

The SSLV missions are useful to launch small-sized satellites weighing anywhere between 10 to 500kg into the Low Earth Orbit. Going by their size and weight, these are typically referred to as mini, micro or nano satellites. They are low on cost and intended satellite insertion into orbits takes a shorter flight time.

SSLV are best suited for commercial and on-demand launches. Previously, satellite projects built by college students and private players involved in the space sector have benefitted from SSLV missions.

How has India's SSLV journey been so far?
SSLV is a relatively new development by ISRO, which is expanding its launch capabilities. The first SSLV mission — SSLV-D1 — carrying two satellites, including EOS-02 and AzaadiSat, in August 2022, was a failure. Despite a text-book launch, perfect lift-off and smooth transitioning into subsequent stages, the insertion of the two satellites after their separation took place into a 356 km circular orbit instead of the intended elliptical orbit.

Six months later, in its second attempt with the SSLV-D2 in February 2023, ISRO tasted success. The rocket inserted three satellites onboard into the intended 450 km circular orbit following a 15 minute flight.

Both these launches were from SHAR.

What are the features of SHAR?
SHAR is situated along the east coast of Andhra Pradesh and is located 80 km off Chennai. It currently provides launch infrastructure to all ISRO missions. It is equipped with a solid propellant processing setup, static testing, and launch vehicle integration facilities, telemetry services — tracking and command network to oversee the launch — and a mission control centre.

SHAR has two launch complexes that are routinely used to launch the Polar Satellite Launch Vehicle (PSLV), the Geosynchronous Space Launch Vehicles (GSLV) and the Geosynchronous Satellite Launch Vehicle Mk-III, now renamed as LVM3. The maiden launch from the First Launch Pad, built in the early 1990s, was in September 1993. Operational since 2005, the Second Launch Pad saw its maiden launch in May 2005.

8. Union Cabinet approves IndiaAI Mission with 10,372 cr outlay

Why in news?

India has made the first move to address a key shortcoming it currently has in unlocking opportunities around generative artificial intelligence (AI) — that of computing hardware.

The Union Cabinet approved the IndiaAI Mission with an outlay of Rs 10,372 crore for the next five years, under which the government will allocate funds towards subsidising private companies looking to set up AI computing capacity in the country, among other things.

Computing capacity, or compute, is among the most important elements of building a large AI system, apart from algorithmic innovation and data sets. It is also one of the most difficult elements to procure for smaller businesses looking to train and build such AI systems, given the high costs.

For example, Nvidia's A100 chip — considered to be the most cutting edge for AI applications — costs around $10,000, which means that a data centre of 10,000 such graphics processing units (GPUs) could cost at least $100 million (more than Rs 8,000 crore).

What is India's plan for setting up AI computing capacity?

Under the IndiaAI Mission, the government will look to establish a computing capacity of more than 10,000 GPUs and also help develop foundational models with a capacity of more than 100 billion parameters trained on datasets covering major Indian languages for priority sectors like healthcare, agriculture, and governance.

While the infrastructure is being set up, priority will be placed on selecting the most advanced GPUs.

The implementation of this AI compute infrastructure will be done through a public-private partnership model with 50 per cent viability gap funding. If the compute prices come down, the private entity will have to add more compute capacity within the same budgeted amount to meet increased demand. Of the total outlay, Rs 4,564 crore has been earmarked for building computing infrastructure.

Are there proposals beyond hardware too?

The Cabinet has approved the financing by the government of deeptech startups at various levels of growth. Of the total outlay, roughly Rs 2,000 crore has been earmarked towards this. As part of the programme, an IndiaAI Datasets Platform will be set up, which will look at leveraging the quality, access, and use of non-personal datasets for AI innovation. The platform will be tasked with hosting identified "high-quality" AI-ready datasets.

Together, these proposals cover two of the most crucial elements of building large language models: the hardware and access to high-quality datasets.

The government will also set up the IndiaAI Innovation Research Centre, which will undertake the development and deployment of large foundational models, with focus on indigenous Large Multimodal Models and domain-specific foundational models. Close to Rs 2,000 crore has been earmarked for this centre. There is a plan to financially support 4,000 BTech, 400 Mtech, and 600 PhD candidates who will focus on AI in premier educational institutions.

9. Haiper, the text-to-video model created by Google DeepMind, TikTok alumni

Why in News?
The race to bring out the best text-to-video AI model seems to be intensifying. Haiper — a company founded by former members of Google DeepMind, TikTok, and top labs from research academia — introduced a new text-to-video model. The announcement came just weeks after the launch of OpenAI's AI model Sora, which is capable of generating one-minute high-definition videos from text months.
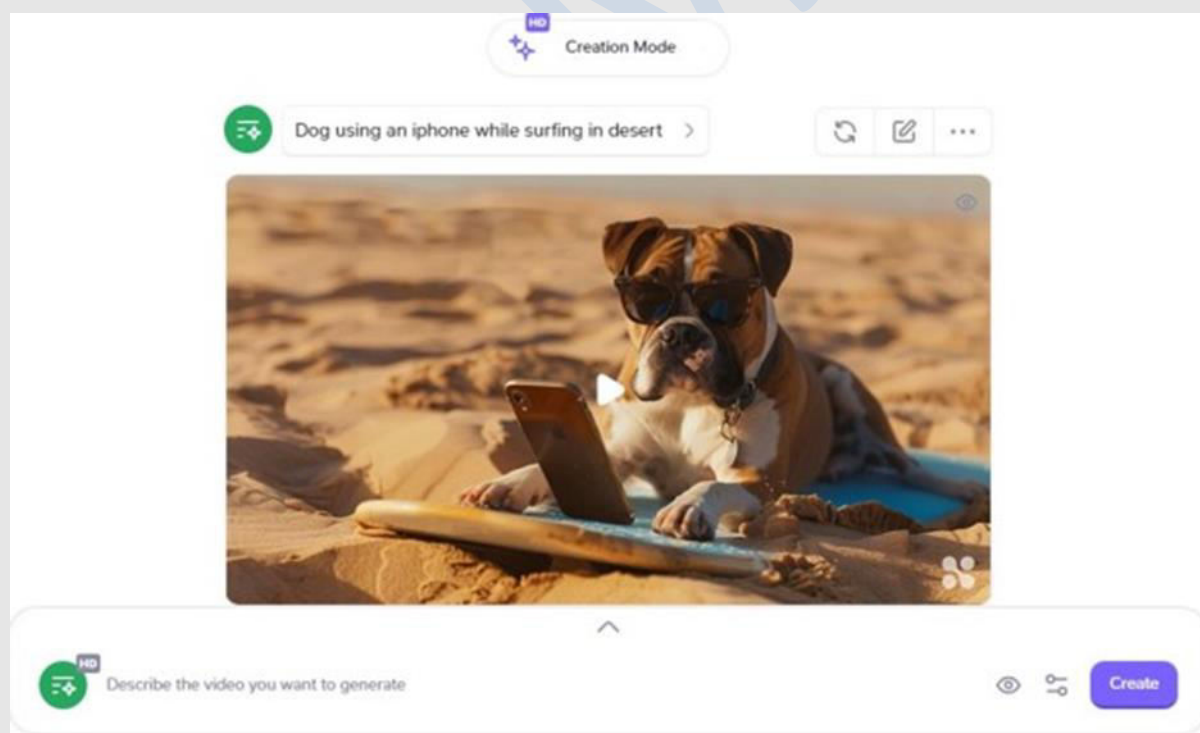
According to Haiper, its model is a powerful perceptual foundation model-driven AI that has been designed for a "new path towards AGI" (artificial general intelligence, an AI software with human-like intelligence and the ability to self-learn).

What is Haiper and who is backing it?

Haiper is an all-in-one visual foundation model that allows everyone, with or without technical training, to generate high-quality video content with ease.

Released by DeepMind alumni, Yishu Miao and Ziyu Wang, the model comes with the company's own proprietary AI model underneath. According to reports, Miao had previously worked at TikTok's Global Trust & Safety team, while Wang worked as a research scientist for Google and DeepMind. Both Miao and Wang also have PhDs in Machine Learning from Oxford University. The duo reportedly began working on their venture sometime in 2021 in London and it was formally incorporated in 2022.

10. Bengaluru's first driverless metro train, aided by AI

Why in news?

The Bengaluru Metro Rail Corporation Limited (BMRCL) received the first set of six train coaches, which are part of the Communication-based Train Control (CBTC) system for its under-construction yellow line last month. It is now set to undergo various safety tests.

What is a CBTC-enabled driverless metro train?

According to the Indian Railways' handbook, CBTC technology is a modern communication-based system that uses radio communication to transfer timely and accurate train control information. CBTC is "one train talking to another train".

The yellow line will have Unattended Train Operations (UTO), allowing full automation in tasks such as opening and closing of doors and stoppage and movement of trains, and Enhanced Supervision Capability from the Operations Control Centre (OCC).

Every morning, the train will "wake up" to a command from the OCC. This will activate the interior lights and start the engine. The train then undergoes an automatic self-check to ensure its technical fitness. It will go through automated washing plants for cleaning, before moving to the platforms. At night, the train will enter a "sleep mode".

Who has manufactured and designed these trains?

The coaches for the driverless Bengaluru Metro are manufactured by Chinese firm CRRC Nanjing Puzhen Co Ltd, along with their domestic partners Titagarh Rail Systems Ltd. as part of the Make In India Initiative. The Chinese firm won a Rs 1,578 crore contract in 2019 to supply 216 coaches to BMRCL.

How is Bengaluru Metro tapping into AI for the first time?

AI will be used to monitor tracks on the new line for the safety of operations. AI algorithms can analyse data from sensors to detect anomalies such as cracks, wear and tear or other irregularities along the track. Cameras mounted on trains can capture visual data and AI-powered systems can analyse it in real-time to detect safety concerns.

What are the other special features of the driverless metro train?

Hot axle detection system: It is a train monitoring system that detects overheating in the bearings of the trains. Temperature data and diagnostic data are transmitted to OCC via an onboard antenna, wayside wireless equipment and telecom network at designated stations.

Real-time location: The driverless train is equipped with an LCD-type dynamic route map. This will provide information on doors opening or closing and on the arrival/departure.

Front view and rear-view camera: Rear-view cameras are on both sides of the cars so that train operators can view the passengers boarding and deboarding before train departure.

The front-facing camera will record the front images for safety/security purposes during driverless operations.

Emergency Egress Device (EED) unit: During an emergency, passengers can operate the handle till it reaches the 'REQUEST' position. A request will go to the OCC/train operator, who will check the situation via CCTV camera and let the door unlock.

When will the driverless trains be operational?
The train has to undergo at least 37 tests on the mainline for four months and signalling tests for at least 45 days. The yellow line, which was set to be operational in 2022, is now expected to start only by December 2024.

Relevance: GS Prelims & Mains Paper III; Science & Technology
Source: Indian Express

11. Why Karnataka has banned food colouring used in gobhi manchurian and cotton candy

Why in news?
The Karnataka government recently "banned" the use of harmful colouring agents in gobhi manchurian and cotton candy, with a violation attracting imprisonment of up to 7 years and fine of up to Rs 10 lakhs.

Consumption of snacks containing these artificial colours may pose long-term health risks, including cancer. Artificial colouring was found in 107 of the 171 gobhi manchurian samples tested by the state government, and in 15 of the 25 cotton candy samples tested. Based on these findings, an order has been issued banning the use of prohibited artificial colours, including Rhodamine B, in Gobi Manchurian and cotton candy.

What is Rhodamine B?
While the minister said that Karnataka was banning the use of the colouring agent Rhodamine B, it is not one of the permitted food colouring agents under the country's food safety regulation. It is a chemical colour used in dyeing clothes, paper, leather, printing, and plastics. It is used to give red and pink colours.

The dye is not fit for consumption and may lead to acute toxicity. Exposure to the chemical may also damage the eye and cause irritation in the respiratory tract. While the International Agency for Research on Cancer — the World Health Organisation body that maintains a list of cancer causing agents — says it cannot be classified as carcinogenic to humans, there are some studies on rats that have shown carcinogenic effects.

Is it frequently added to food products in India?
Not commonly. Rhodamine B is usually reported from small road-side vendors in small cities. This is because of a lack of understanding about dyes that are permissible in food items. Small vendors are not aware that this dye can be harmful as effects might not always be felt immediately. They might just go to a shop and ask for a red colour, not knowing what is given to him.

It is usually "illegally" added to preparations such as gobhi manchurian, potato wedges, butter chicken, pomegranate juice, ice-creams produced in small scale, or cotton candies.

What are the food colours that are allowed by the food safety act?
The Food Safety and Standards Authority of India (FSSAI), the country's apex food safety regulator, allows the use of very few natural and synthetic colours in food items. There is also a restriction on which colours can be used in what type of food product.

Rhodamine B is a common red dye; it is even used in Holi colours. However, it is thought to be a carcinogen and its use is not permitted in food products. In fact, only about ten colours are allowed to be used in foods.

The natural food colours whose use is allowed includes carotene and carotenoids (yellow, orange), chlorophyll (green), riboflavin (yellow), caramel, Annatto (orange-red, derived from the seed of an American tree), saffron, and circumin (yellow, from turmeric). The synthetic colours allowed include red from Ponceau 4R, Carmoisine, and Erythrosine; yellow from Tartrazine and Sunset Yellow FCF, blue from Indigo Carmine and Brilliant Blue FCF, and green from: Fast Green FCF.

Even permissible food colourings, however, are not allowed in all food items. Some food items that can use these colours include ice creams, biscuits, cakes, confectionaries, fruit syrups and crushes, custard powder, jelly crystals, and carbonated or noncarbonated beverages.

12. Agni-5 missile with MIRV technology

Why in News?
India announced the successful testing of an Agni missile capable of carrying multiple warheads meant to hit multiple targets simultaneously. The success of Mission Divyastra, as the test was named, was announced by Prime Minister Narendra Modi.

What are Agni-5 missiles?
Agni is a long-range missile developed indigenously by the Defence Research and Development Organisation, DRDO. The family of Agni missiles has been in the arsenal of the Indian armed forces since the early 1990s. This latest variant of the missile is equipped with what is known as MIRV (Multiple Independently Targetable Re-entry Vehicle) technology, first developed at least five decades ago but in possession of only a handful of countries.

What is MIRV technology?
The MIRV can target multiple targets that can be hundreds of kilometers apart with a single missile. Agni, capable of carrying nuclear warheads, has a range of more than 5,000 km, making it a long-range missile, and is aimed mainly at thwarting the challenge from China.
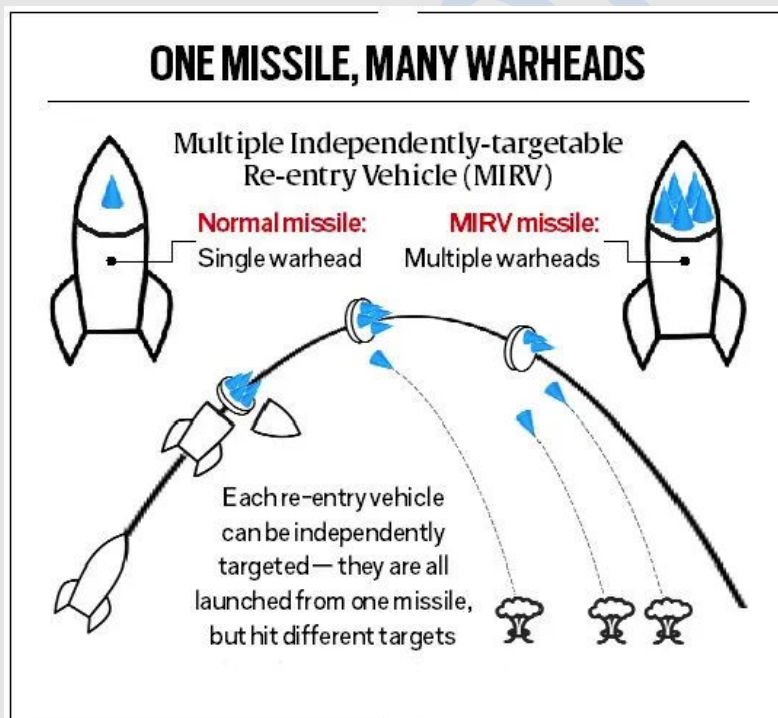
As of now, the United States, Russia, China, France and the United Kingdom are known to have MIRV-equipped missiles. These missiles can be launched from land or from sea from a submarine. While Pakistan is developing such a missile system, Israel too is suspected to either possess the missile or be developing it.

When was the Agni-5 last tested?

Agni-5 has been successfully tested multiple times since 2012. In December 2022, a successful flight test of Agni-5 was undertaken off the coast of Odisha.

Medium to Intercontinental versions of Agni missile systems 1 to 5 have varying ranges — starting from 700 km for Agni-1 to 5000 km and above for Agni-5. In June 2021, DRDO successfully tested Agni P, a canisterised missile with a range capability between 1,000 and 2,000 km. This means that the missile can be launched from road and rail platforms, making it easier for it to be deployed and launched at a quicker pace.

What makes MIRV technology specially lethal?
According to the Center for Arms Control and Non-proliferation, "In contrast to a traditional missile, which carries one warhead, MIRVs can carry multiple warheads. Warheads on MIRVed missiles can be released from the missile at different speeds and in different directions."

The MIRV is also difficult to develop, which is why very few countries have them. "The development of MIRV technology is not easy. It requires the combination of large missiles, small warheads, accurate guidance, and a complex mechanism for releasing warheads sequentially during flight," the Center for Arms Control and Non-proliferation said.

While the USA had the technology in 1970 and the Soviet Union followed suit in the same decade, since then, only a few countries have the MIRV capabilities, a club India has now joined.

Relevance: GS Prelims & Mains Paper III; Science & Technology
Source: The Indian Express

13. India's indigenous fifth-gen fighter jet Advanced Medium Combat Aircraft (AMCA)

Why in news?
The Cabinet Committee on Security (CCS) this week cleared a Rs 15,000 crore project to design and develop the Advanced Medium Combat Aircraft (AMCA), India's fifth-generation fighter multirole fighter jet.

The Aeronautical Development Agency (ADA) under the Defence Research and Development Organisation (DRDO) will be the nodal agency for executing the programme and designing the aircraft. It will be manufactured by state-owned Hindustan Aeronautics Limited (HAL).

The aircraft will put India in a select group of nations that have their own fifth-generation fighter aircraft.

Features of AMCA
STEALTH: The 25-tonne twin-engine aircraft, which will be bigger than other fighters in the Indian Air Force inventory, will have advanced stealth features to avoid detection by enemy radar.

FUEL & WEAPONS: The aircraft will have a large, concealed internal fuel tank of 6.5-tonne capacity, and an internal weapons bay for a range of weapons, including indigenous weapons, to be buried in its belly.

Stealth features such as an internal weapons bay and a bigger internal fuel tank are part of fifth-generation aircraft like AMCA. Up to four long-range air-to-air missiles and multiple precision-guided munitions can be carried in the internal weapons bay, with a payload of 1,500 kg.

External fuel tanks and externally attached weapons leave a huge signature and are easy to detect for radar. The special material that will be used on the aircraft surface will divert the radar signature instead of reflecting it back.

ENGINE: The AMCA Mk1 variant will have the US-built GE414 engine of the 90 kilonewton (kN) class, while the more advanced AMCA Mk2 will fly on the more powerful 110kN engine, which will be developed indigenously by DRDO's Gas Turbine Research Establishment (GTRE) in collaboration with a foreign defence major. India has been talking with Safran SA of France, one of the world's largest manufacturers of aircraft engines and related equipment, in order to finalise the roadmap for the development of the combat aircraft engine.

Other features such as a diverterless supersonic inlet for controlling air flow into the engines, and a serpentine air intake duct to shield the engines from radar emissions, are likely to be part of the AMCA.

Why AMCA is special

Discussions for developing the AMCA started in 2007. The initial plan was to jointly develop the aircraft with Russia under a Fifth Generation Fighter Aircraft (FGFA) programme. However, India withdrew from the FGFA project in 2018.

The AMCA will be India's indigenous fifth-generation fighter aircraft. The indigenous Light Combat Aircraft (LCA) Tejas is a 4.5-generation single-engine multirole aircraft.

What will set the fifth-generation combat aircraft apart from the existing fourth-generation is primarily its stealth features. The aircraft will have a low electro-magnetic signature, which will make it difficult for enemy radar to detected it. At the same time, it will have powerful sensors and new weapons, so it is able to register the signature of enemy aircraft and take them out.

Another important aspect would be to ensure a higher utilisation time and smaller serviceability or maintenance periods for the aircraft. This will be aided by the inclusion of a comprehensive Integrated Vehicle Health Management (IVHM) system to keep track of multiple structural components, and to assess the condition of the aircraft in real-time.

Development timeline
Following the CCS approval, which had been pending for more than a year and a half, the ADA hopes to have the first flight of the aircraft in four and a half to five years. The full development of the aircraft is expected to take around 10 years from now. Five prototypes will be built before HAL begins manufacturing the aircraft. The private industry is also expected to be involved in the manufacturing of the aircraft.

Other fifth-generation fighters
Only a few countries have built a fifth-generation stealth fighter aircraft. The list of the aircraft currently in service includes the F-22 Raptor and F-35A Lightning II of the US, the Chinese J-20 Mighty Dragon, and the Russian Sukhoi Su-57.

IAF's dwindling numbers
The IAF currently has around 30 fighter squadrons against the sanctioned strength of 42. This number is expected to go down further as squadrons of MiG-21s, MiG-29s, Jaguars, and Mirage 2000s are scheduled to be phased out by the middle of the next decade.

The IAF has indicated that it requires seven squadrons of the AMCA to begin with. Considering the IAF's requirements, the planned inductions of additional squadrons of LCAs and AMCA will not add up to the sanctioned squadron strength in a decade.

Relevance: GS Prelims & Mains Paper III; Science & Technology
Source: Indian Express

14. Pi, the world's 'friendliest' chatbot
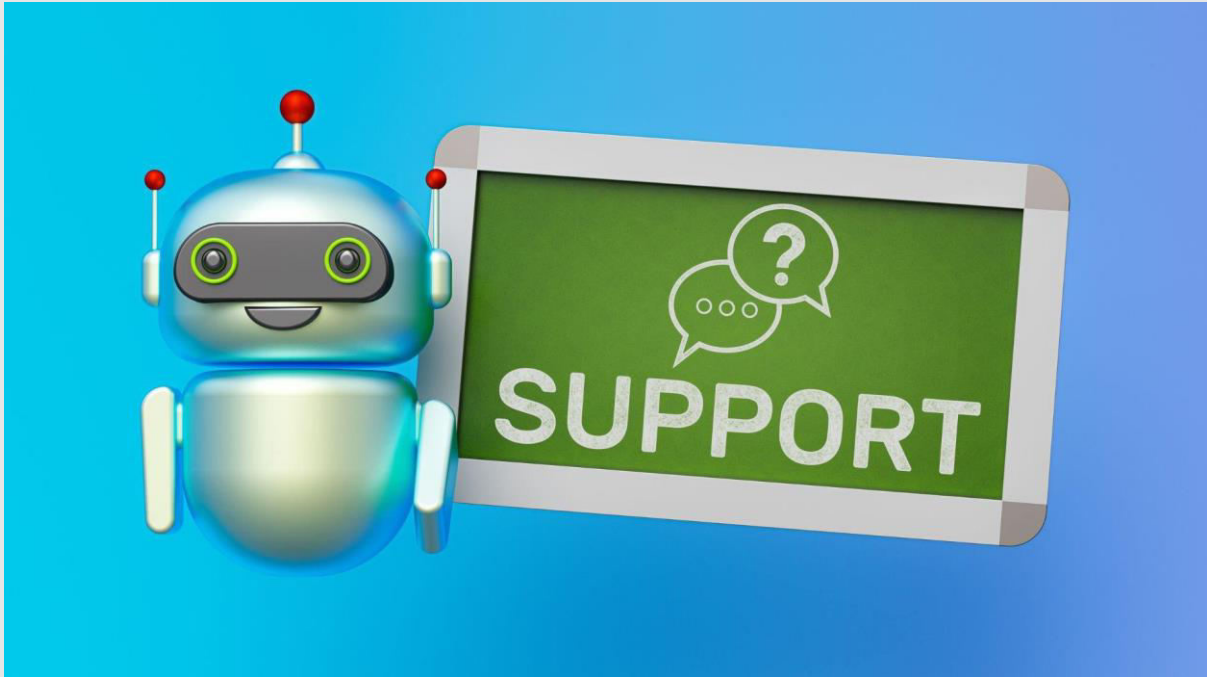
Why in News?

In less than a week, two Large Language Models (LLMs) have been launched that are closer to or even better at tasks than OpenAI's GPT-4. After Anthropic's Claude 3 captured the attention of the AI community, Inflection AI launched its latest LLM, Inflection 2.5, an upgrade to its model that powers its friendly chatbot Pi personal assistant.

Inflection AI, a California-based AI startup founded by former co-founders of DeepMind and LinkedIn, introduced Pi, their personal AI, in May 2023.

About Pi

Pi has been designed to be "empathetic, helpful, and safe", according to Inflection AI. Following the success of the chatbot, the company introduced its new major foundation model, Inflection 2, in November 2023. At the time of the launch of Inflection 2, the company claimed it to be the best LLM in the world.

Now, the company is back with an upgraded version that is claimed to be as good as GPT-4.

15. How will the recently proposed highway tolling system work? Will it be based on the U.S.'s Global Positioning System? Will it be mandatory for all vehicles to fit an on-board unit device? What about the FASTags collection system?

Why in news?

Road Transport and Highways Minister Nitin Gadkari said in Parliament in February that the government plans to implement a new highway toll collection system based on the global navigation satellite system.

What is the new proposed highway tolling system?
The global navigation satellite system is a term used to refer to any satellite-based navigation system, including the United States' Global Positioning System (GPS). It uses a large constellation of satellites to provide more accurate location and navigation information to users globally as compared to the GPS alone.

An official of the Ministry of Road Transport and Highways explained that its implementation will involve an On-Board Unit (OBU), or a tracking device, fitted inside a vehicle whose location can be mapped using GAGAN, the Indian satellite navigation system with an approximate accuracy of 10 metres. The co-ordinates of the entire length of the country's national highways will have to be logged with the help of digital image processing, and software will be used to assign the toll rate on a particular highway, calculate the toll amount for a vehicle as per the distance travelled by it and then deduct it from a wallet linked to the OBU.

The Ministry official further explained that the aim of the technology is to provide users the benefit of paying toll only for the actual distance travelled on a highway, or pay-as-you-use. The government also hopes that it will eventually allow barrier-free movement.
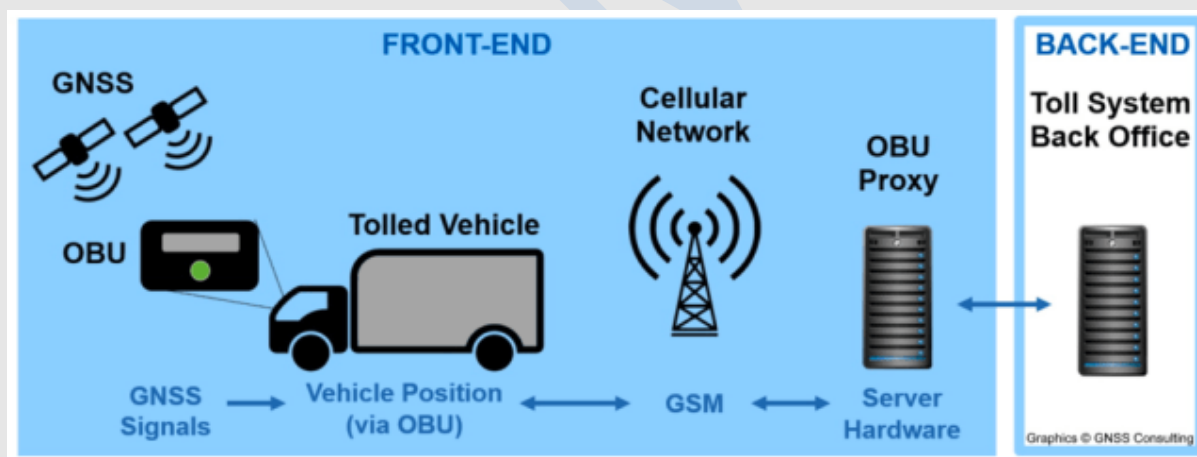
What are some of the challenges?
One of the major challenges posed by this technology is that of recovering the toll amount if a road user fails to clear his payment after completing a journey on a highway, for instance, if the digital wallet linked with the OBU is empty.

Because there are no barriers involved that can stop a non-compliant vehicle, there are other issues such as when a vehicle travels on a highway without an OBU device linked or the OBU device is deliberately switched off to avoid payment or if a car's OBU is installed on a truck to pay less toll.

16. SIMA, Google Deepmind's new AI that can play video games with you

Why in news?

Google DeepMind revealed its latest AI gaming agent called SIMA or Scalable Instructable Multiworld Agent, which can follow natural language instructions to perform tasks across video game environments. Simply, Google's new AI is all set to play video games with you.

SIMA points to a future of gaming where AI agents could play a key role. It also takes us a step closer to AI which can intelligently collaborate with humans not only in games but also in doing tasks in real-world environments.

What is SIMA?

AI research lab Google Deepmind describes SIMA as an AI Agent, which is different from AI models such as OpenAI's ChatGPT or Google Gemini. AI models are trained on a vast data set and are limited when it comes to working on their own. On the other hand, an AI Agent can process data and take action themselves.

SIMA can be called a generalist AI Agent that is capable of doing different kinds of tasks. It is like a virtual buddy who can understand and follow instructions in all sorts of virtual environments – from exploring mysterious dungeons to building lavish castles. It can accomplish tasks or solve challenges assigned to it.

It is essentially a super-smart computer programme that can be thought of as a digital explorer, having the ability to understand what you want and help create it in the virtual world.

17. What is Nvidia's Project GR00T, designed to create AI-powered humanoid robots

Why in News?
AI chip leader Nvidia announced Project GR00T or Generalist Robot 00 Technology, which promises to revolutionise the evolution of humanoid robots.

The project aims to empower humanoid robots with human-like understanding and movement using Artificial Intelligence (AI).

Nvidia's announcement comes a few days after another AI robotics company, Figure AI, showcased its humanoid robot, Figure 01. Powered by ChatGPT. Figure 01 can follow instructions and assist with tasks like cleaning up and handing over objects.

What is Project GR00T?
Project GR00T is essentially a general-purpose foundation model for humanoid robots. It is at the vanguard of Nvidia's efforts to drive breakthroughs in robotics and embodied AI (robots, virtual assistants, or other intelligent systems that can interact with and learn from a physical environment).

Project GR00T stands for Generalist Robot 00 Technology. Robots built on this platform are designed to understand natural language and emulate movements by observing human actions, such as instantly learning coordination, dexterity, and other skills. This can help the robots navigate and engage with the real world around them.

What does all of this mean?
On the face of it, job loss seems imminent, with humanoid robots potentially capable of handling various hazardous as well as repetitive tasks. For instance, Nvidia's collaboration with healthcare company Hippocratic AI to develop AI-powered healthcare agents can put some nurses' jobs at risk. However, many point out that the humanoid robots can aid humans and make their lives more comfortable, instead of replacing them.

## 18. What is Ola's Krutrim AI, dubbed as India's indigenous AI?

Why in News?

Earlier this year, Indian multinational ridesharing company, Ola, introduced Krutrim AI, claiming it as "India's own AI". Upon launch, it was revealed that the initial iteration of the product will get substantial enhancements as the company aims to expand its foundation.

What is Krutrim AI?
According to Ola, Krutrim AI is an assistant "envisioned to be your own personalised assistant, which can simplify your personal and professional life by getting a variety of tasks done for you, while keeping the aesthetic sense and sensibilities of the Indian ethos."

The company aims to develop a unique form of AI designed to cater to the diverse needs and nuances of the Indian consumer. Ola claims Krutrim is built on its own foundation model and that it is "Indian at heart."
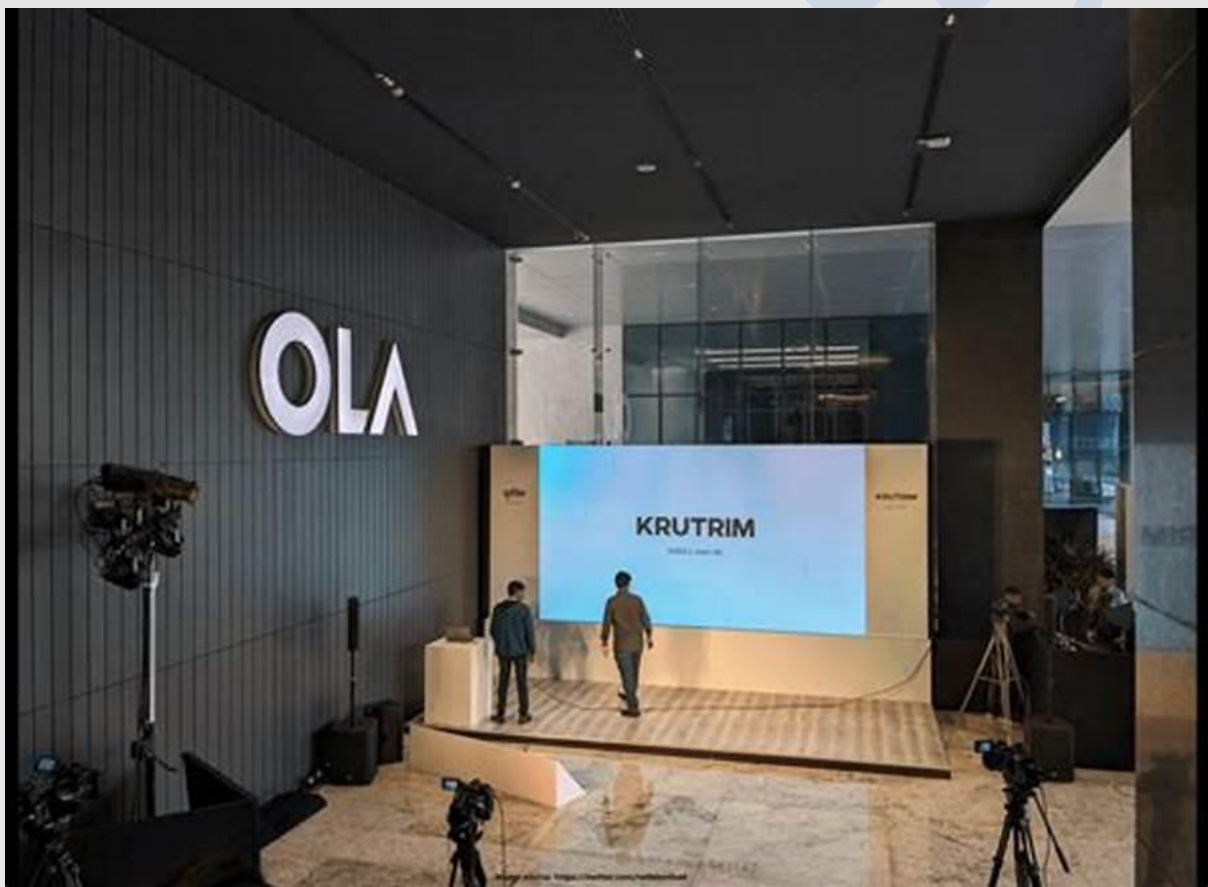
What can Krutrim AI do?
With the help of Krutrim, Ola hopes to bridge the gap between conventional AI and the specific needs based on Indian languages and culture.

Krutrim is supposed to be different from its international peers as it claims to be able to perform tasks in English, Hindi, Tamil, Telugu, Malayalam, Marathi, Kannada, Bengali, Gujarati, Kannada and Hinglish.

What is the tech behind Krutrim AI?

Krutrim AI uses Natural Language Processing (NLP) — a component of AI — to understand the nuances of human language, including colloquialisms and cultural contexts. Machine Learning (ML) algorithms enable it to learn from vast data sets and improve its responses over time. Moreover, Deep Learning, a sophisticated branch of ML, helps it recognise patterns and analyse complex data, which could be crucial for Krutrim AI's performance. While the exact technologies used are not disclosed, these methodologies align with the AI's demonstrated functions.

How can it help users?

Krutrim AI offers a wide range of applications across various sectors, significantly enhancing user experiences, according to Ola. The company said Krutrim AI-powered chatbots can also offer culturally sensitive interactions in Indian languages, improving support experiences. In education, it offers personalised learning, tailoring content to address individual needs within the Indian context.

For content creators, Krutrim AI can help with the ideation and localisation of content to make it more relatable. Besides, when it comes to administrative tasks across industries, this could help in automating repetitive tasks.

Relevance: GS Prelims; Science & Technology
Source: The Indian Express

19. It's official: 'Statio Shiv Shakti' approved as name of Chandrayaan-3 landing site

An image of the Chandrayaan-3 Vikram lander clicked by a navigation camera onboard the Pragyan rover

Why in news?

The International Astronomical Union (IAU) working group for Planetary System Nomenclature has approved the name "Statio Shiv Shakti" for the landing site of Chandrayaan-3's Vikram lander. The approval was given on March 19.

Planetary nomenclature, like terrestrial nomenclature, is used to uniquely identify a feature on the surface of a planet or satellite so that it can be easily located, described, and discussed.

Gazetteer of Planetary Nomenclature
The Gazetteer of Planetary Nomenclature "contains detailed information about all names of topographic and albedo features on planets and satellites [and some planetary ring and ring-gap systems] that the IAU has named and approved from its founding in 1919 through the present time".

The IAU is the internationally recognised authority for assigning names to planetary surface features. It follows some rules and conventions to do so.

The IAU's Rule 9 states: "No names having political, military or religious significance may be used, except for names of political figures prior to the 19th century." The citation in the gazetteer for the name of the landing site of the Vikram lander reads: "Compound word from Indian mythology that depicts the masculine ["Shiva"] and feminine ["Shakti"] duality of nature."

Relevance: GS Prelims; Science & Technology
Source: The Hindu

20. How the H5N1 bird flu threatens the existence of birds and mammals

Why in news?
Since 2020, a highly pathogenic type of bird flu, H5N1, has been spreading across the globe, posing an existential threat to birds and wildlife. The virus has infected birds in more than 80 countries (as of December 2023) and resulted in culling of millions of chickens and turkeys at commercial poultry farms. It also struck numerous species of wild birds, such as gulls and terns, killing them by thousands.

The more worrying sign, however, is the rapid spread of the flu — once largely confined to birds — among mammals. For instance, tens of thousands of seals and sea lions in different parts of the world have died due to the disease. The infection has also infiltrated mainland Antarctica for the time in history.
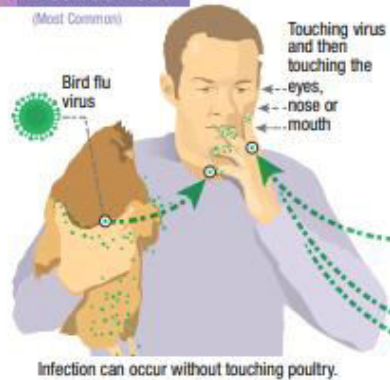
How Infected Backyard Poultry Could Spread Bird Flu to People
Human Infections with Bird Flu Viruses Rare But Possible

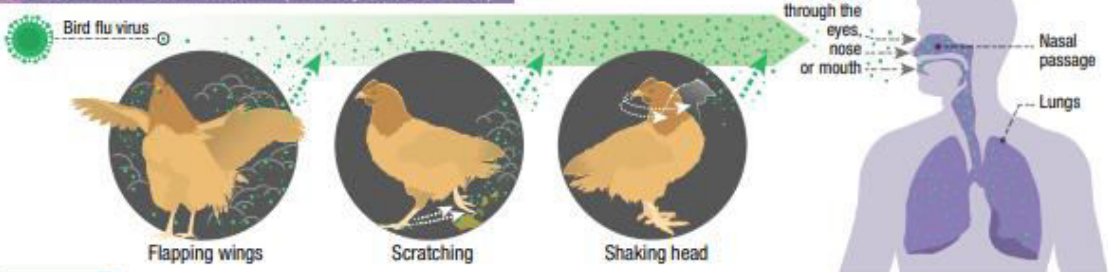Humans are also at risk but they rarely contract bird flu. Most of the cases of human infection involve people who have come in contact with a large number of sick birds at poultry farms. This means that humans are likely to get infected when there is a huge viral load.

What is bird flu?
Bird flu, also known as avian flu, refers to an infectious viral illness that mainly infects and spreads among poultry and some wild birds. There are different strains of bird flu virus, which have been circulating for a very long time among at least 100 bird species, including wild waterfowl, such as ducks and geese, without much harming them.

From time to time, a form of the flu virus jumps from wild birds to poultry farms, and replicates in cramped warehouses of farmed birds. It then quickly evolves into a highly pathogenic flu virus that causes a larger wave of illness and death than usual among birds.

The currently circulating type of H5N1 is one such highly pathogenic flu virus. It has "descended from a virus that caused an outbreak on a goose farm in Guangdong, China, in 1996. That virus — one of a type of virus known as H5N1 — was highly pathogenic and killed more than 40 per cent of the farm birds it infected.

Spread of H5N1

The new version of H5N1 first emerged in Europe in 2020 and then rapidly reached Africa, and Asia. By late 2021, it had spread to North America and in the fall of 2022, it appeared in South America. In February 2024, the virus stormed through mainland Antarctica.

1. World Bank report says women earn 77 cents for every dollar a man earns: what is the gender pay gap?

Why in News?
Earlier this month, a World Bank Group report found that globally, women earn just 77 cents for every dollar paid to men. This difference has been cited in the past as an example of the "gender pay gap" – women earning less than men on average.

Different figures have also been given over the years across various reports, with some critics even disputing the existence of such a gap. The International Labour Organisation terms the gender pay gap as a "measurable indicator" of inequality between women and men.

What exactly does this "gap" measure, and what does this tell us about women and men and the differences in the work they do?

How is the gender pay gap calculated?
According to the ILO, the gender pay gap is defined as the gap between the average wage level of all women and all men working in the labour market for a monthly salary, hourly or daily wage.

Therefore, it is distinct from the concept of "equal pay for equal work", which says if women and men have the same qualifications and do the same work, they need to be paid equally.

Further, there is no one agreed-upon method to calculate this gap. Pew Research found in 2012 that women earned 84 per cent of what men earned in the US, while the US Bureau of Labor Statistics reported that women earned 81 cents to the dollar, just a few months before that.

Why the difference?
Pew used hourly wages to calculate the difference, whereas the Labor Bureau used weekly wages, taking into account only full-time workers (defined as those who usually work at least 35 hours per week). Overall, despite some differences due to the methodology, some kind of gender pay gap does exist in most countries and industries.

What explains the gender pay gap?
First is the simple fact that women are not involved in paying jobs as much as men are, owing to notions about gender roles. The labour force participation rate gives an idea about this. It is the number of people looking for work or working already and above 15 years of age, divided by the total population.

According to ILO, the current global labour force participation rate for women is just under 47%. For men, it is 72%. In India, as per the 2011 Census, the workforce participation rate for women is 25.51% against 53.26% for men.

The second factor is the type of jobs women are employed in, once they join the workforce.

ILO's Women in Business and Management report found that "Far fewer women than men are in management and leadership positions, especially at higher levels. When women are managers, they tend to be more concentrated in management support functions such as human resources and financial administration than in more strategic roles. This brings down the average salary of female managers compared to that of male managers."

Relevance: GS Prelims & Mains Paper I; Social Issues
Source: The Indian Express

2. A new report card, where students, their friends, parents get a say: What has NCERT changed, why

Why in news?
The traditional report cards students receive in schools are set to undergo a major change, with the National Council for Educational and Research Training (NCERT) introducing a new 'holistic progress card' (HPC), which will measure, apart from academic performance, a child's progress in interpersonal relationships, self-reflection, creativity, and emotional application in classrooms.

The HPCs have been devised by Performance Assessment, Review, and Analysis of Knowledge for Holistic Development (PARAKH), a standard-setting body under the NCERT, for the foundational stage (Classes 1 and 2), preparatory stage (Classes 3 to 5) and middle stage (Classes 6 to 8), as per suggestions by the National Education Policy (NEP) 2020. Report cards for the secondary stage (beyond Class 9) are still being prepared.

What is a Holistic Progress Card?
The Holistic Progress Card, or HPC, will no longer depend on marks or grades to evaluate a student's academic performance. Instead, it will rely on a 360-degree evaluation.

Under the HPC model, the students will be regularly assessed through class activities where they are not just passive learners but active agents. The activities will prompt students to apply diverse skills and competencies that will demonstrate whether they have been able to grasp concepts. The difficulty level they experience while performing a task will also be assessed.

WHAT IS HOLISTIC PROGRESS CARD

■ New form of student evaluation based on recommendations of NEP 2020

■ Doesn't depend on marks or grades to evaluate a student's academic performance

■ Instead, it gives greater role to parents in tracking a student's achievements in class

■ Students' own perception of their performance and what they wish to achieve in school included for the first time

Teachers, thus, will be able to register the strengths of a student, such as their ability to "collaborate", "follow instructions", show "creativity" or "empathy", etc. Similarly, weaknesses like "lack of attention", "peer pressure", "lack of preparation" will help teachers identify areas where students need help.

A key feature of the HPC is that students will have a say too, evaluating their own as well as their classmates' performance. For instance, at the foundational stage, a student will circle appropriate responses like 'Yes', 'No' or 'Do not know', to descriptive statements like "I liked doing this work" or "I found this work easy". Similarly, a student will assess her peers by answering whether "my friend liked doing this work" or "my friend found this work easy".

The HPC will also link home and school by making parents an integral part of a child's learning process. Parents' inputs on their child's ability to do homework and whether a child is able to follow lessons in the classroom will be included. Even the child's ability to balance screen time with extra curricular activities at home are now part of the progress report card.

When will it be rolled out for all classes?
After PARAKH prepared the HPCs for students till Class 8, it was sent to all states and Union Territories in September 2023, with the NCERT asking them to either adopt the HPC or make modifications that suit their regional requirements. Presently, 15 to 16 states and UTs are already using the new method at the foundational and preparatory stages.

What are its benefits?

The HPC goes beyond numerical grades, focusing on descriptive and analytical evaluations that encompass academic achievements as well as the development of critical skills in a child. It promotes a shift from summative to formative assessment, fostering competency-based evaluation and holistic growth. Additionally, it seeks to provide teachers and parents with insights to support each student in learning.

1. INS Jatayu, India's new naval base in Lakshadweep

Why in News?

Naval Detachment Minicoy will be commissioned as INS Jatayu, an upgraded naval base, marking an important milestone in the Indian Navy's resolve to incrementally augment security infrastructure at the strategic Lakshadweep Islands.

While India has had a naval detachment in Minicoy, the southernmost atoll of the Lakshwadeep archipelago, since the 1980s, INS Jatayu will effectively be the country's second naval base in Lakshadweep. The Navy's first base on the islands, INS Dweeprakshak in Kavaratti, was commissioned in 2012.
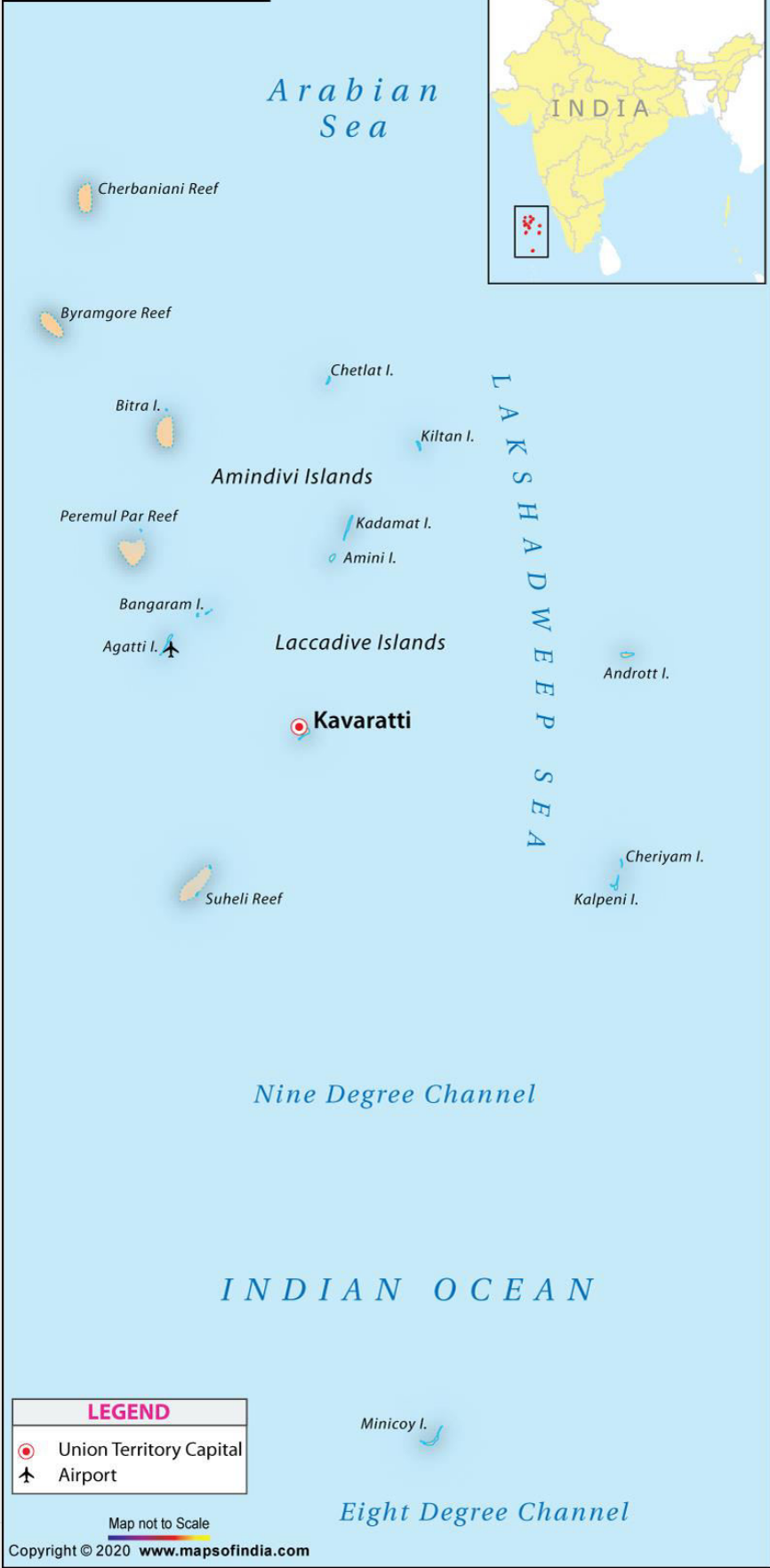
It is to be noted that Names of ships, bases, and detachments of the Indian Navy carry the prefix INS.

The Lakshadweep Islands

Lakshadweep, 'a hundred thousand islands' in Sanskrit and Malayalam, is an archipelago of 36 islands located between 220 km and 440 km from Kochi. The islands, only 11 of which are inhabited, have a total area of only 32 sq km.

The Lakshadweep are part of a chain of coralline islands in the Indian Ocean that includes Maldives to the south, and the Chagos archipelago farther beyond, to the south of the equator. Given their location in the Indian Ocean, the Lakshadweep are of huge strategic importance to India.

LAKSHADWEEP

A r a b i a n
S e a

INDIA

Cherbaniani Reef

Byramgore Reef

Chetlat I.

Bitra I.

Kiltan I.

Amindivi Islands

*L
A
K
S
H
A
D
W
E
E
P

S
E
A*

Peremul Par Reef

Kadamat I.

Amini I.

Bangaram I.

Agatti I. ✈

Laccadive Islands

Andrott I.

⦿ **Kavaratti**

Cheriyam I.

Suheli Reef

Kalpeni I.

Nine Degree Channel

I N D I A N   O C E A N

LEGEND	
⦿	Union Territory Capital
✈	Airport

Minicoy I.

Map not to Scale

Eight Degree Channel

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7 5 9 7 9 - 0 0 0 0 0

Minicoy straddles vital Sea Lines of Communications (SLOCs) — the world's main maritime highways — including the Eight Degree Channel (between Minicoy and Maldives) and the Nine Degree Channel (between Minicoy and the main cluster of Lakshadweep islands). In consequence, the Lakshadweep Islands are also vulnerable to marine pollution.

INS Jatayu naval base
The existing Naval Detachment Minicoy, which is under the operational command of the Naval Officer-in-Charge (Lakshadweep), will be commissioned as INS Jatayu.

A naval detachment has administrative, logistics, and medical facilities. INS Jatayu will be upgraded to a naval base with additional infrastructure such as an airfield, housing, and personnel, after obtaining the requisite environmental and other clearances.

Relevance: GS Prelims & Mains Paper III; Internal Security
Source: The Indian Express

2. All-weather link to Tawang, new Sela Tunnel

Why in News?
The Sela Tunnel, which was "dedicated to the nation" by Prime Minister Narendra Modi, is a key border infrastructure project as it connects Guwahati to the strategic Tawang sector round-the-year, thus aiding faster military movement to the Line of Actual Control (LAC).

Constructed by the Border Roads Organisation (BRO) at an altitude of around 13,000 feet and a cost of Rs 825 crore, the construction of the tunnel was aimed at providing all-weather connectivity to Tawang across Sela Pass on the Balipara-Chariduar-Tawang (BCT) Road, which connects Tezpur in Assam to Tawang in Arunachal Pradesh.

Tezpur is the home of the Indian Army's IV Corps which looks after Assam and western Arunachal Pradesh.

Need for Sela Runnel

The Sela Tunnel will thus be a major boost to India's operational preparedness along the LAC, aiding quick military mobilisation to the bordering Tawang sector, saving nearly 10 km of road distance, translating into nearly almost an hour of travel time for convoys. Heavy artillery guns can be transported through the tunnel.

Preceded by similar projects earlier

This comes months after the inauguration of the Nechiphu tunnel by Defence Minister Rajnath Singh last September.

Both the tunnels would provide all-weather connectivity to Tawang, bypassing the foggy stretches on Nechiphu and the snow on Sela passes, together cutting down distance by about 15 km, thus aiding faster military deployment to Tawang.

Importance of Tawang

With China seeking to claim Tawang as part of larger Tibet, while calling Arunachal Pradesh southern Tibet, India has always kept the region militarily fortified.

During the 1962 India-China war, Beijing had captured Tawang within the first few days. Tawang's historical significance lies in it being the birthplace of the sixth Dalai Lama, making it an important seat of Tibetan Buddhism after Lhasa.

From the military and strategic point of view, Tawang provides geographical access up to the Brahmaputra plains and provides the shortest axis to Tezpur in Assam. The lines of communication from Tawang stretch to Guwahati and the extended Siliguri corridor, amplifying its military importance.

Relevance: GS Prelims & Mains Paper III; Internal Security

1. Venice Biennale, 'the Olympics of the art world', set to open on April 20

Why in news?
The 60th edition of the Venice Biennale, known as "the Olympics of the art world", will open on April 20. The international art exhibition will showcase 333 artists under curator Adriano Pedrosa's central theme "Stranieri Ovunque" or "Foreigners Everywhere". Notably, works of Indian artists and a public collective will also be displayed at the exhibition.

The Venice Biennale is one of the biggest and most prestigious art fairs in the world. It reportedly attracts over six lakh visitors each year, including some of the most distinguished names in art.

But first, what is a biennale?
Biennale is an Italian word which means 'every other year'. Over the years, however, it has come to mean a large international exhibition that takes place every two years.

A biennale exhibition is different from a regular exhibition as it is organised on a large scale and involves multiple venues.

How did the Venice Biennale start?
In 1893, Venice's city government proposed to mark the silver anniversary of King Umberto I of Italy and Margherita of Savoy by establishing a "national biennial exhibition of art". The Biennale was scheduled to open in 1894 but due to some delays, it was finally inaugurated on April 30, 1895 — both King Umberto and Queen Margherita attended the event.

According to the Biennale's website, over two lakh visitors attended the first exhibition and special train tickets were arranged for the event.

The exhibition showcased the works of foreign and Italian painters and sculptors. Each one of them was allowed to display two of their works. Although initially the Biennale displayed only selected works of artists and there were no overarching themes or concepts, this changed in the following years.

When did India first participate in the Venice Biennale?

India made its debut at the Biennale in 1954. The Embassy of India in Rome organised the country's first official exhibition at the event. Recording robust sales, the exhibition comprised over 50 paintings of masters such as M F Husain, S H Raza, Jamini Roy, Amrita Sher-Gil, and Francis Newton Souza.

Will India have a presence at the 2024 Venice Biennale?

Works by Indian artists will also feature in this central exhibition. This includes the late modernists Ram Kumar, B Prabha, SH Raza, Jamini Roy, Amrita Sher-Gil, FN Souza, and Goa-based Monika Correa. Representing the contemporary will be the public art collective Aravani Art Project, led by trans and cis women.

Relevance: GS Prelims
Source: Indian Express

2. The 'Architecture Nobel': 2024 Pritzker prize

Figure 1 Japanese architect Riken Yamamoto

Why in News?

Japanese architect Riken Yamamoto was declared winner of the 2024 Pritzker Architecture Prize, the highest international award in the field, which is sometimes referred to as the "Architecture Nobel". The prize has been awarded every year since its founding in 1979, and Yamamoto is the ninth laureate from Japan. Architects from Japan have won the largest number of Pritzkers.

The Nobel of Architecture

The Pritzker Architecture Prize was instituted by Jay A Pritzker, the late founder of the Hyatt Hotels chain, and his wife Cindy, "to honour a living architect whose built work demonstrates talent, vision and commitment, who has produced consistent and significant contributions to humanity and the built environment through the art of architecture".

The award comes with a purse of $100,000, a citation, and a bronze medallion based on designs by Louis Sullivan, the Chicago architect known as the father of the skyscraper, which bears the words firmness, commodity, and delight, recalling the Roman architect and engineer Marcus Vitruvius's prescription for a well-built structure.

The winner is picked from a field of more than 500 on average, nominated by experts including past laureates, academics, and professionals, by a jury who make visits to sites of the projects. The prize is awarded in May, at a ceremony that is modelled on the Nobel Prizes.

3. Devin AI, the world's 'first fully autonomous' AI software engineer

Why in News?

US-based applied AI lab, Cognition, has introduced what it claims is the world's first AI software engineer. The makers say that the AI agent, named Devin, has passed practical engineering interviews held by leading AI companies. It has also completed real jobs posted on Upwork, an US-based freelancing platform, according to Cognition.

What can Devin do?

The AI agent comes with some advanced capabilities in software development, including coding, debugging, problem-solving, etc. Devin uses machine learning algorithms to constantly learn and improve its performance and adapt according to new challenges. In simple words, Devin can build and deploy apps end-to-end and can also train and fine-tune its own AI models.

Devin can plan and execute complex engineering tasks that would require thousands of decisions. This is possible owing to Cognition's advances in long-term reasoning and planning. According to the company, Devin can recall relevant context at each step, self-learn over time, and even fix mistakes.

Besides, the makers have also endowed the AI software engineer with the ability to proactively collaborate with the user. It reports progress in real-time, is capable of accepting feedback, and works along with the user through design choices as needed.

4. How did Indians end up in the Russia-Ukraine war? What did the CBI uncover with respect to the illegal recruitment of Indian youth to the Russian military?

Why in News?
The deaths of two Indian nationals in the ongoing Russia-Ukraine war and the recent raids by the Central Bureau of Investigation (CBI) which uncovered a human trafficking network recruiting Indians as "security helpers" and other personnel for the Russian military have sparked widespread concern. This has highlighted the plight of dozens of Indians stuck on the frontlines of the Russia-Ukraine war after they were deceived into working with the Russian military under false pretences.

What happened?
The presence of Indians in combat roles on the Russian side, first surfaced in February this year. Initially hired as "army security helpers," Indians were compelled to fight against their will after their passports and documents were seized.

One of the men, a resident of Uttar Pradesh, told that he went to Russia with the help of an agent in November last year after he was assured that there would be no deployment in the war zone. However, he was sent to the frontline in January after some basic training in handling

weapons. "We were categorically told that we would not be sent to the battlefield and promised ₹1.95 lakh salary and ₹50,000 additional bonus per month. Except for the ₹50,000 bonus for two months, I have not received any money," he said. The U.P. resident claimed that he tried to contact the Indian Embassy in Moscow but all his pleas went in vain.

In the subsequent days, more Indian citizens and their families came forward to seek the government's intervention. A group of seven Indians from Punjab and Haryana released a set of videos, claiming that they arrived in Russia on tourist visas but were forced to join the Russian Army as "helpers" after being detained.

How did the agents con people?
A multi-State human trafficking network busted by the CBI in a crackdown on visa recruiters in seven cities across India last week revealed how Indian youths were allegedly pushed into the war zone by consultancy firms on the pretext of a better life and livelihood with the Russian military as security guards and helpers, as well as higher education. So far, the probe agency has found 35 instances of people sent to Russia and listed at least 17 consultancy companies spread across India who were involved in the trafficking.

As per the CBI, the "organised network" lured Indian youth through social media and local agents, offering them highly paid jobs and lucrative employment opportunities in Russia. A number of students were reportedly tricked into enrolling in dubious private universities by agents promising low fees and visa extensions. Once the aspirants reached Russia, the local agents seized their passports and forced them to join the armed forces, the CBI said. At least two Indians with the Russian military have lost their lives in the fighting so far.

What has the government said?
The Indian government is in talks with the Russian authorities about the early release of Indian citizens who were duped into working with the Russian military.

Relevance: GS Prelims & Mains Paper II; Indians Diaspora
Source: The Hindu

Practice Questions

1. Agaléga airstrip, built by India, is within the territory of which of the following countries?
a. Mauritius
b. Maldives
c. Seychelles
d. Kenya

2. Consider the following statements about International Big Cat Alliance (IBCA):
1. The headquarters of IBCA will be established in India.
2. The IBCA is an alliance of Big Cat Range range countries in Asia and Africa only.
3. All the Seven big cats namely Tiger, Lion, Leopard, Snow Leopard, Puma, Jaguar and the Cheetah are found in India.
How many of the above statements are correct?
a. Only One
b. Only Two
c. All Three
d. None

3. The famous judgement given under Asian Resurfacing v. Central Bureau of Investigation case, which was recently reversed by Supreme Court dealt with
a. Powers of CBI to undertake investigation in States
b. Time limit for Stay orders passed by Courts
c. Independence of private businesses from State interference
d. Extra-territorial powers of CBI

4. Venice Biennale, an important international event, is related to field of
a. Sports
b. Politics
c. Science
d. Arts

5. How many of the following tactics can be adopted as part of Grey Zone Warfare?
1. Economic sanctions
2. Fake news and Propoganda
3. Hacking of Computer Resources
a. Only One
b. Only Two
c. All Three
d. None

6. Prototype Fast Breeder Reactor has been recently core loaded. This reactor is located at
a. Narora, Uttar Pradesh
b. Banswara, Rajasthan
c. Tarapur, Maharashtra
d. Kalpakkam, Tamil Nadu

7. MethaneSAT, a satellite which will track and measure methane emissions at a global scale — was launched recently by
a. Indian Space Research Organisation (ISRO)
b. National Aeronautics and Space Administration (NASA)
c. Greenpeace - International level NGO
d. Environmental Defense Fund (EDF) — a US-based NGO

8. ISRO's first launchport is the Satish Dhawan Space Centre (SDSC) SHAR in Sriharikota. The second rocket launchport of the Indian Space Research Organisation (ISRO) is located at
a. Kulasekarapattinam, Thoothukudi district, Tamil Nadu
b. Poneri, Thiruvallur district, Tamil Nadu
c. Vizhuppuram, Villupuram district, Tamil Nadu
d. Virudhunagar, Ramanathapuram district, Tamil Nadu

9. Consider the following statements about Majuli island:
1. It is the largest riverine island in the world.
2. It is located in the state of Assam.
3. It has been declared as the district.
4. It is seat of traditional monasteries belonging to Vaishnavism.
How many of the above statements are correct?
a. Only One
b. Only Two
c. Only Three
d. All Four

10. Amid repeated deaths from animal attacks and rising anger over them, Kerala recently declared man-animal conflict as a state-specific disaster, becoming the first state in the country to do so. Which of the following is the implication of this declaration?
a. Wild Life Protection Act would not be applicable to Kerala.
b. State disaster management authority will have primary responsibility to deal with the disaster.

c. Man-animal conflict would continue to remain as National disaster in Kerala.
d. Man-animal conflict in Kerala would be dealt under State laws only.

11. Pritzker Prize is given in the field of
a. Environment
b. Science
c. Mathematics
d. Architecture

12. Often in news, What is 'Rhodamine B'?
a. It is used to add fragrance to food items.
b. It is used to enhance immunity of body.
c. It is a permitted colour in food industry.
d. It is used as chemical colour in dyeing clothes.

13. Consider the following statements about Agni-5 missile with MIRV technology:
1. A single missile can hit multiple targets that are hundreds of kilometers apart.
2. It has a range of more than 10,000 km.
3. India is only the third country to possess MIRV equipped missiles.
How many of the above statements are correct?
a. Only One
b. Only Two
c. All Three
d. None

14. Sela tunnel has been constructed to enhance border connectivity in which of the following States?
a. Assam
b. Uttarakhand
c. Sikkim
d. Arunachal Pradesh

15. According to Citizenship Amendment Act (CAA) 2019 and rules framed there under, who among the following is not an illegal migrant?
a. A Hindu from Pakistan who is without valid documents and who entered India on December 31, 2014
b. A Muslim from Pakistan who is without valid documents and who entered India on December 31, 2014
c. A Hindu from Myanmar who is without valid documents and who entered India on December 31, 2014

d. A Muslim from Myanmar who is without valid documents and who entered India on December 31, 2014

16. Which of the following countries recently provided guaranteed right to abortion under its constitution?
a. India
b. USA
c. France
d. Germany

17. Funded by the Ministry of Earth Sciences (MoES), the first phase of India's Atmospheric Research Testbed has been launched in the state of
a. Madhya Pradesh
b. Jharkhand
c. Chattisgarh
d. Gujarat

18. Consider the following statements about Model Code of Conduct (MCC):
1. MCC has been devised by Election Commission of India in consultation of Supreme Court.
2. MCC is legally binding.
3. MCC comes into force before 72 hours of the first phase of voting.
How many of the above statements are correct?
a. Only One
b. Only Two
c. All Three
d. None

19. As per Chief Election Commissioner and other Election Commissioners (Appointment, Conditions of Service and Term of Office) Act, 2023, the members of Election Commission of India are appointed by
a. Three-member Selection Committee, comprising Prime Minister, Union Home Minister and the leader of the largest party in the Opposition.
b. Three-member Selection Committee, comprising Prime Minister, Chief Justice of India and the leader of the largest party in the Opposition.
c. The President of India on advice of the Prime Minister.
d. The President of India on the recommendation of Union Ministry of Law and Justice.

20. Russian President Vladimir Putin, 71, won the recent Presidential elections by securing more than 87 per cent of the votes. With a six-year term set to follow, he will

become Russia's longest-serving leader in more than 200 years. In which of the following years has he served as the President of Russia?
a. 2008 onwards
b. 2000 to 2008 and 2012 onwards
c. 2004 to 2012 and 2018 onwards
d. 2012 onwards

21. Project GR00T or Generalist Robot 00 Technology, which promises to revolutionise the evolution of humanoid robots is a project by
a. Open AI
b. Microsoft
c. Apple
d. Nvidia

22. The militant orgnaisation Boko Haram known for its mass abductions is based in
a. Colombia
b. Russia
c. Armenia
d. Nigeria

23. The primary agency to deal with money laundering in India is
a. CBI
b. NIA
c. ED
d. CID

24. Krutrim AI, dubbed as India's indigenous AI assistant, has been developed by
a. Reliance
b. Tata
c. Ola
d. Uber

25. Chandrayaan-3 landing site has been officially named as Statio Shiv Shakti. Which body is responsible for assigning names to relief features on celestial bodies?
a. Respective national governments
b. United Nations General Assembly
c. International Telecommunication Union
d. International Astronomical Union

26. Consider the following statements about India-Pakistan Trade Relations:

1. Pakistan has not conferred Most Favoured nation Status (MFN) to India, while it continues to enjoy the same from India.
2. The bilateral trade between the two nations has consistently increased over the last 5 years.
Which of the above Statements is/are correct?
a. 1 only
b. 2 only
c. Both 1 and 2
d. Neither 1 nor 2

27.   The ASI, which works under the Union Ministry of Culture, is responsible for protecting and maintaining certain specific monuments and archaeological sites that have been declared to be of national importance. However, if a monument or site is delisted, then it is no longer to be conserved, protected, and maintained by the ASI.
Which is the most probable reason behind delisting of sites or monuments?
a. ASI has budget constraints. Thus, to reduce its expenditure, often many sites and monuments are delisted on regular basis.
b. There is specific limit which is fixed by the government for sites and monuments which can be declared to be of national importance. As new sites and monuments are declared, many old ones are delisted.
c. If a site or monument is lost, then it is common to delist it. (y)
d. If the State governments take responsibility of the site or monument, then it is come to delist it.

28.   T+0 settlement cycle has been introduced in stock exchanges by SEBI. Which of the following statements is correct in this regard?
a. T+0 settlement cycle has been introduced for the equity scrips of all the companies.
b. Under the T+0 trade cycle, the settlement of trades will happen on the same day after the closure of the T+0 market.
c. It is mandatory on traders trading in NSE and BSE to adopt T+0. The option for T+1 is no longer available.
d. T+0 has been introduced in NSE, but not BSE.

Answer Key

1.(a)	2.(a)	3.(b)	4.(d)	5.(c)
6.(d)	7.(d)	8.(a)	9.(d)	10.(b)
11.(d)	12.(d)	13.(a)	14.(d)	15.(a)
16.(c)	17.(a)	18.(d)	19.(a)	20.(b)
21.(d)	22.(d)	23.(c)	24.(c)	25.(d)
26.(d)	27.(c)	28. (b)		

Explanations

1. (a) Recently, Prime Minister Narendra Modi and Prime Minister Pravind Jugnauth of Mauritius jointly inaugurated an airstrip and a jetty that India has built on Agaléga, a two-island Mauritian dependency 1,100 km to the north of Port Louis and 2,500 km southwest of Malé.

2. (a) Statement 1 is correct.
Statement 2 is inocrrect. The International Big Cat Alliance has been conceived as a multi-country, multi-agency coalition of 96 big cat range countries, non-range countries interested in big cat conservation across the world.
Statement 3 is incorrect. Seven big cats include Tiger, Lion, Leopard, Snow Leopard, Puma, Jaguar and the Cheetah out of these five big cats viz. Tiger, Lion, Leopard, Snow Leopard and Cheetah are found in India.
Thus, Only One Statement is correct.

3.(b) In Asian Resurfacing, the SC held that while a "High Court has jurisdiction in appropriate case to consider the challenge against an order framing charge and also to grant stay but how such power is to be exercised and when stay ought to be granted needs to be considered further."

To address the big problem plaguing the criminal justice system, of undue delays in trials, the SC held that interim orders of stay at the High Court and Civil Court level will be only valid for six months. At the end of this period, they will automatically be rescinded or "vacated".

4.(d) The 60th edition of the Venice Biennale, known as "the Olympics of the art world", will open on April 20. The international art exhibition will showcase 333 artists under curator Adriano Pedrosa's central theme "Stranieri Ovunque" or "Foreigners Everywhere". Notably, works of Indian artists and a public collective will also be displayed at the exhibition.

5.(c) All the given tactics can be adopted by nations as part of Grey Zone Warfare.

6. (d) On March 4, Prime Minister Narendra Modi witnessed the start of the process of core-loading the indigenous Prototype Fast Breeder Reactor (PFBR) at the Madras Atomic Power Station in Kalpakkam, Tamil Nadu.

7.(d) The entity behind MethaneSAT is the Environmental Defense Fund (EDF) — a US-based nonprofit environmental advocacy group. To develop the satellite, EDF

partnered with Harvard University, the Smithsonian Astrophysical Observatory, and the New Zealand Space Agency.

8.(a) Prime Minister Narendra Modi laid the foundation stone of the second rocket launchport of the Indian Space Research Organisation (ISRO) at Kulasekarapattinam, in coastal Tamil Nadu's Thoothukudi district.

9.(d) With a total area of 352 square kilometres (136 square miles), "Majuli" is the world's largest river island. It is an island in the Brahmaputra River, Assam. In 2016 it became the first island to be made a district in India. Majuli island is a seat of 22 traditional Vaishnavist monastries called Sattras.

10. (b) Once the issue is declared a state-specific disaster, the onus to deal with it shifts to the state disaster management authority, which, powered by the Disaster Management Act, can take quicker and more decisive action.

11.(d) Pritzker Architecture Prize is the highest international award in the field, which is sometimes referred to as the "Architecture Nobel". The prize has been awarded every year since its founding in 1979.

12.(d) Rhodamine B is not one of the permitted food colouring agents under the country's food safety regulation. It is a chemical colour used in dyeing clothes, paper, leather, printing, and plastics. It is used to give red and pink colours.

13.(a) Statement 1 is correct: The MIRV equipped missile can target multiple targets that can be hundreds of kilometers apart with a single missile.
Statement 2 is incorrect: Agni, capable of carrying nuclear warheads, has a range of more than 5,000 km.
Statement 3 is incorrect: As of now, the United States, Russia, China, France and the United Kingdom are known to have MIRV-equipped missiles.
Thus, Only One Statement is correct.

14.(d) Sela Tunnel is a road tunnel at 3,000 metres (9,800 ft) which ensures all-weather connectivity between Guwahati in Assam and Tawang in Arunachal Pradesh.

15.(a) According to Citizenship Amendment Act (CAA), 2019, undocumented immigrants from six non-Muslim communities — Hindu, Sikh, Buddhist, Parsi, Christian and Jain — from Pakistan, Afghanistan and Bangladesh are not considered illegal immigrant provided they entered India on or before December 31, 2014.

16. (c) In a global first, France inscribed the guaranteed right to abortion in its constitution on March 8, 2024 sending a powerful message of solidarity with women's rights on International Women's Day.

17.(a) On March 12, the first phase of India's Atmospheric Research Testbed in Central India (ART-CI) was inaugurated at Silkheda in Sehore district, located about 50 km northwest of Bhopal in Madhya Pradesh.

18.(d) Statement 1 is incorrect: The MCC evolved as part of the Election Commission of India's drive to ensure free and fair elections and was the result of a consensus among major political parties.
Statement 2 is incorrect: It has no statutory backing. Simply put, this means anybody breaching the MCC can't be proceeded against under any clause of the Code. The EC uses moral sanction or censure for its enforcement.
Statement 3 is incorrect: The MCC comes into force from the date the election schedule is announced until the date that results are out. As a result, it kicks in from date of announcement of election schedule and remains in effect until the election process is concluded.
Thus, All the three statements are incorrect.

19.(a) Members of ECI are to be selected by a three-member Selection Committee, comprising Prime Minister, Union Home Minister, and the leader of the largest party in the Opposition. They are to chosen out of a shortlisted panel of six names. The shortlisting is done by a committee which, according to the Act, is headed by the Union Minister for Law and Justice and includes two officials of the rank of Secretary to the government.

20. (b) Vladimir Vladimirovich Putin (born 7 October 1952) is a Russian politician and former intelligence officer who is the president of Russia. Putin has held continuous positions as president or prime minister since 1999: as prime minister from 1999 to 2000 and from 2008 to 2012, and as president from 2000 to 2008 and since 2012. He is the longest-serving Russian or Soviet leader since Joseph Stalin.

21. (d) AI chip leader Nvidia announced Project GR00T or Generalist Robot 00 Technology, which promises to revolutionise the evolution of humanoid robots. The project aims to empower humanoid robots with human-like understanding and movement using Artificial Intelligence (AI).

22. (d) Boko Haram, Islamic sectarian movement, founded in 2002 by Muhammed Yusuf in northeastern Nigeria, that since 2009 has carried out assassinations and large-scale acts of violence in that country.

23. (c) Money laundering in India is dealt as per the provisions of Prevention of Money Laundering Act, 2002. Enforcment Directorate is the primary agency to implement this act.

24. (c) Indian multinational ridesharing company, Ola, introduced Krutrim AI, claiming it as "India's own AI".

25.(d) The International Astronomical Union (IAU) is the internationally recognised authority for assigning names to planetary surface features.

26.(d) Statement 1 is incorrect: On February 14, 2019, a terrorist from the Pakistani group Jaish-e-Muhammad rammed an explosives-laden car into a convoy of the Central Reserve Police Force (CRPF) at Lethpora, a village in Pulwama, on the Srinagar-Jammu National Highway. It led to the deaths of 40 personnel. India withdrew Pakistan's MFN status within 24 hours of the attack.
Statement 2 is also incorrect: In FY17, India-Pakistan trade was $2.29 billion. In FY21, it was around $0.5 billion.
Thus, Neither 1 Nor 2 Statements are correct.

27(c) The AMASR Act protects monuments and sites that are more than 100 years old, including temples, cemeteries, inscriptions, tombs, forts, palaces, step-wells, rock-cut caves, and even objects like cannons and mile pillars ("kos minars") that may be of historical significance.

These sites are scattered across the length and breadth of the country and, over the decades, some, especially the smaller or lesser known ones, have been lost to activities such as urbanisation, encroachments, the construction of dams and reservoirs, or sheer neglect, which has resulted in their falling apart. In some cases, there is no surviving public memory of these monuments, making it difficult to ascertain their physical location.

28.(b) For the optional T+0 settlement cycle, there will be one continuous trading session from 09:15 AM to 1:30 PM. The settlement of funds and securities will be completed on the same day by 4:30 PM.