

# GES REPORTER

September 2022  
Monthly Current Affairs Compilation  
PDF

By

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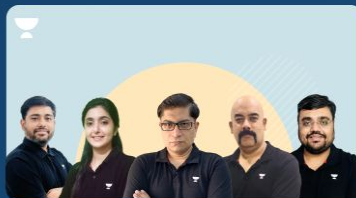
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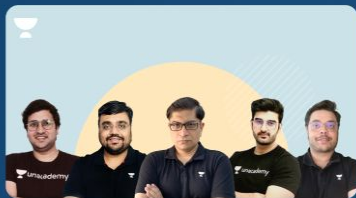
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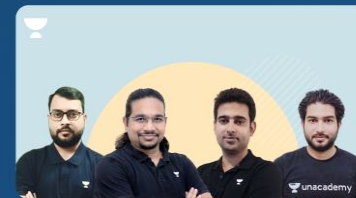
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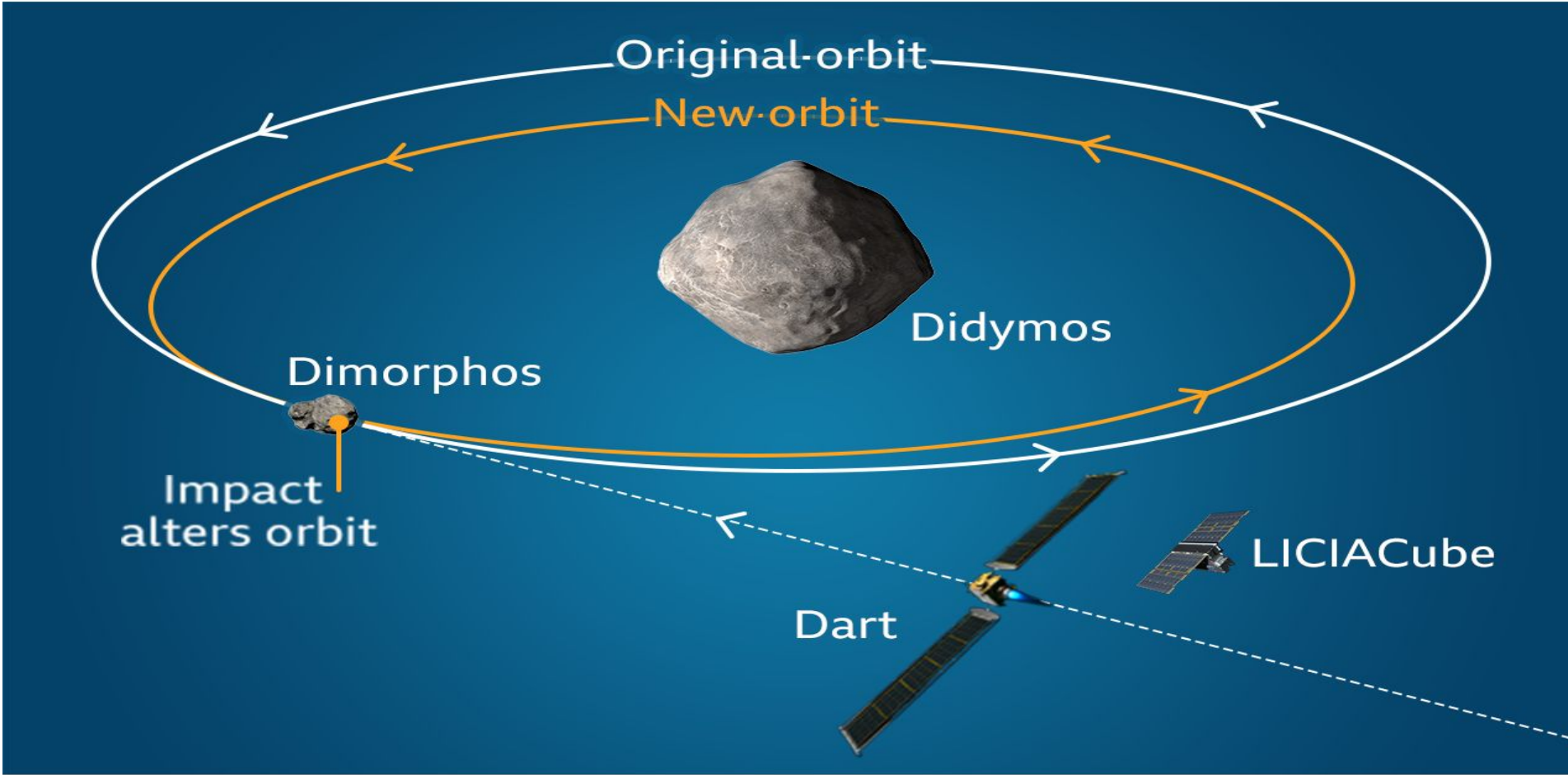
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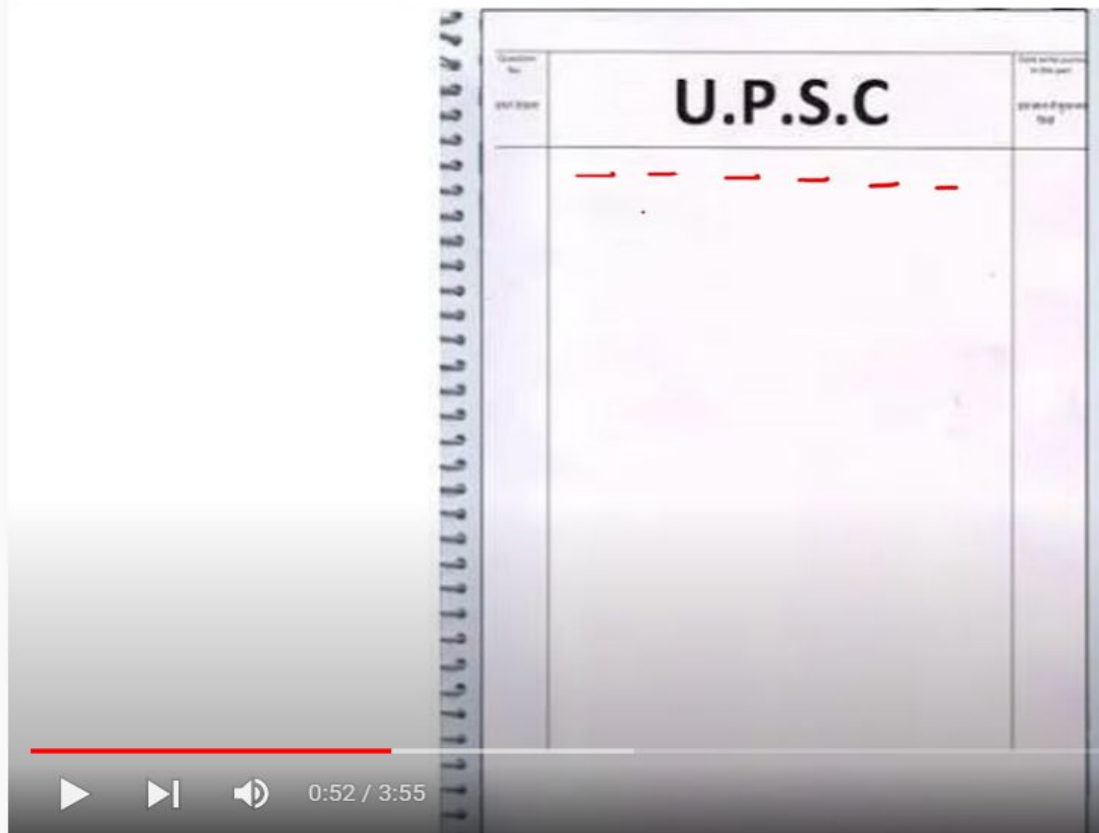


# Nasa spacecraft crashes into asteroid's moon



Source: Nasa, Johns Hopkins Applied Physics Laboratory





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## Why china drill in Taiwan Strait?

- There are three areas the Chinese have built capabilities in order to successfully prosecute an invasion of Taiwan.
- The first of these is China's air assault capabilities consisting of rotary and fixed wing aircraft for an invasion of Taiwan.
- The second is in the area of missile capabilities.
- The third is the PLA's Joint Logistic Support Force (PLAJLSF).
- The PLA fired several long-range missiles of the Dong-Feng (DF) class in the vicinity of the islands of Matsu, Wuqiu, and Dongying.
- The purpose was to test whether the PLA's missile brigades could coordinate missile strikes and carry out post-attack battle damage assessment
- The Dongfeng series, typically abbreviated as "DF missiles", are a family of short, medium, intermediate-range and intercontinental ballistic missiles operated by the Chinese People's Liberation Army Rocket Force.



- The PLA is working on the creation of a logistics network that is capable of time-sensitive responses that combine speed, precision and efficiency.
- Relying heavily on its Beidou Satellite Navigation System, the PLAJLSF is trying to ensure communications and coordination between spread out mobile units on the battlefield.

### THE HINDU

#### Women participation in STEM

- The Government of India has been ramping up efforts to remove gender inequality by providing incentives for women's higher education.
- Some of these initiatives such as the Gender Advancement for Transforming Institutions (GATI), i.e., a pilot project under the Department of Science and Technology to promote gender equity in science and technology, and Knowledge Involvement in Research Advancement through Nurturing

(KIRAN), i.e., a plan under the Department of Science and Technology again to encourage women scientists in science and technology and also preventing women scientists from giving up research due to family reasons, are noteworthy.

- Some institutions are setting up creches so that the scientist mothers can carry on with their research work uninterrupted
- According to available UNESCO data on some selected countries, India is at the lowest position, having only 14% female researchers working in STEM areas. But India is not very far behind many advanced countries in this aspect.
- For example, Japan has only 16% female researchers, the Netherlands 26%, the United States 39%. In India, about 43% of women constitute the graduate population in STEM, which is one of the highest in the world, but there is a downside to this; only 14% of women join academic institutions and universities.
- Although male and female participation in graduate studies is comparable, the participation of women in research has dropped significantly (27% female as compared to 73% male).
- Thus, the visibility of female faculty in universities and research institutes is significantly lower.
- In India, about 43% of women constitute the graduate population in STEM, which is one of the highest in the world, but there is a downside to this; only 14% of women join academic institutions and universities.
- Although male and female participation in graduate studies is comparable, the participation of women in research has dropped significantly (27% female as compared to 73% male).
- Thus, the visibility of female faculty in universities and research institutes is significantly lower.
- According to a report published recently, at most STEM institutes, women occupy 20% of all professorial positions
- The number of women in senior management positions in the corporate sector in India is 39%, which is higher than the global average.
- Number of women CEOs in Fortune 500 companies is 15% while female board members in the management of private enterprises has been growing from 15% (2016), 16.9% (2018) to 19.7% in 2022.



- Encouraging the participation of women in the workforce in the private sector with the adoption of various schemes for women began long ago when compared to the initiatives taken by the Government of India in recent years.
- Various schemes such as flexi-hour work time, re-joining the workforce after an interim break, sections operated only by women, etc. were introduced in private enterprises as early as the 1990s with the benefits being reaped now.

## **THE HINDU**

### **Central civil service conduct rule 1964**

- Rule 5. TAKING PART IN POLITICS AND ELECTIONS:
- No Government servant shall be a member of, or be otherwise associated with, any political party or any organisation which takes part in politics nor shall he take part in, subscribe in aid of, or assist in any other manner, any political movement or activity.
- It shall be the duty of every Government servant to endeavour to prevent any member of his family from taking part in, subscribing in aid of, or assisting in any other manner any movement or activity which is,

or tends directly or indirectly to be, subversive of the Government as by law established and where a Government servant is unable to prevent a member of his family from taking part in, or subscribing in aid of, or assisting in any other manner, any such movement or activity, he shall make a report to that effect to the Government.

- If any question arises whether a party is a political party or whether any organisation takes part in politics or whether any movement or activity falls within the scope of sub-rule (2), the decision of the Government thereon shall be final.
- No Government servant shall canvass or otherwise interfere with, or use his influence in connection with or take part in an election to any legislature or local authority:

#### **Provided that -**

- A Government servant qualified to vote at such election may exercise his right to vote, but where he does so, he shall give no indication of the manner in which he proposes to vote or has voted;
- A Government servant shall not be deemed to have contravened the provisions of this sub-rule by reason only that he assists in the conduct of an election in the due performance

of a duty imposed on him by or under any law for the time being in force.

- Rule 9. CRITICISM OF GOVERNMENT:
- No Government servant shall, in any radio broadcast, telecast through any electronic media or in any document published in his own name or anonymously, pseudonymously or in the name of any other person or in any communication to the press or in any public utterance, make any statement of fact or opinion -
- Which has the effect of an adverse criticism of any current or recent policy or action of the Central Government or a State Government:
- Provided that in the case of any Government servant included in any category of Government servants specified in the second proviso to sub-rule (3) of rule 1, nothing contained in this clause shall apply to bonafide expression of views by him as an office-bearer of a trade union or association of Government servants for the purpose of safeguarding the conditions of service of such Government servants or for securing an improvement thereof; or
- Which is capable of embarrassing the relations between the Central

Government and the Government of any State; or

- Which is capable of embarrassing the relations between the Central Government and the Government of any foreign State;
- Provided that nothing in this rule shall apply to any statements made or views expressed by a Government servant in his official capacity or in the due performance of the duties assigned to him.

## **THE HINDU**

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### **Ban on single use plastic**

- Since July 1, 2022, India has banned the manufacture, import, stocking, distribution, sale, and use of single-use plastic (SUP) items with low utility and high littering potential.
- India is a party to the United Nations Environment Assembly (UNEA).

### **Why are single-use plastics harmful?**

- The purpose of single-use plastics is to use them once or for a short period of time before disposing of them.
- Plastic waste has drastic impacts on the environment and human health.
- There is a greater likelihood of single-use plastic products ending up in the sea than reusable ones.

### **What is the impact on the environment?**

- Littered single-use plastic items have an adverse effect on both terrestrial and aquatic ecosystems.
- All countries face a major environmental challenge due to pollution caused by single-use plastic items.
- India piloted a resolution on single-use plastics pollution at the 4th United Nations Environment Assembly in 2019, recognising the urgent need for the global community to address this issue.
- India is not the first country to ban single-use plastics.
- Bangladesh became the first country to ban thin plastic bags in 2002; New Zealand banned plastic bags in July 2019.
- China had issued a ban on plastic bags in 2020 with a phased implementation.
- As of July 2019, 68 countries have plastic bag bans with varying degrees of enforcement.
- What are the plastic waste management rules in India?
- With effect from September 30, 2021, the Plastic Waste Management Amendment Rules, 2021, prohibited the manufacture, import, stocking, distribution, sale, and use of plastic carry bags whose thickness is less than 75 microns.
- From December 31, 2022, plastic carry bags whose thickness is less than 120 microns will be banned.
- It means that the ban does not cover all plastic bags; however, it requires the manufacturers to produce plastic bags thicker than 75 microns which was earlier 50 microns.
- The notification clearly mentioned that plastic or PVC banners/hoardings should have more than 100 microns in thickness, and non-woven plastic (polypropylene) must be more than 60 GSM (grams per square metre).
- Non-woven plastic bags have a cloth-like texture but are counted among plastics. Still, plastic or PET bottles, counted among the most recyclable types of plastic, have been left out of the scope of the ban.
- In addition, the Indian government has taken steps to promote innovation and create an ecosystem for accelerated adoption and availability of alternatives across the country.
- To ensure the effective enforcement of the ban, national and State-level control rooms will be established, as well as special enforcement teams for the purpose of checking the

illegal sale and use of single-use plastics.

- To prevent the movement of banned single-use plastic items between States and Union Territories, border checkpoints have been established.
- In an effort to empower citizens to help curb the plastic menace, the Central Pollution Control Board (CPCB) has launched a grievance redressal application.
- The Government has been taking measures for awareness generation towards the elimination of single-use plastics
- The awareness campaign has brought together entrepreneurs and start-ups, industry, Central, State and local Governments, regulatory bodies, experts, citizen organisations, R&D and academic institutions.

### **What is the role of the manufacturer?**

- In addition, the Ministry of Environment, Forests, and Climate Change notified the Plastic Waste Management Amendment Rules, 2022 on February 16, 2022. Extended Producer Responsibility (EPR) is the responsibility of a producer for the environmentally sound management of the product until the end of its life.

- The guidelines provide a framework to strengthen the circular economy of plastic packaging waste, promote the development of new alternatives to plastic packaging and provide the next steps for moving towards sustainable plastic packaging by businesses.
- Now the challenge is to see how the local level authorities will enforce the ban in accordance with the guidelines.
- Banned items such as earbuds with plastic sticks, plastic sticks for balloons, etc., are non-branded items and it is difficult to find out who the manufacturer is and who is accountable for selling because these items will be available in the market even after the issuing of guidelines.

## **THE HINDU**

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### **SC relaxed ban on iron ore mining**

- The story so far: On August 26, 2022, the Supreme Court raised the ceiling limit of iron ore mining for Ballari (from 28 MMT to 35 MMT), Chitradurga and Tumakuru districts (from 7 MMT to 15 MMT collectively) in Karnataka, saying that the conservation of ecology and environment must go hand in hand

with the spirit of economic development.

### **What did the Supreme Court rule?**

- Through its two orders this year, the top Court ruled that it was necessary to create a level playing field for the mines situated in the three districts with those in the rest of the country.
- Taking cognisance of the course correction by the government, it relaxed its 2011 order since the situation had now “changed for the better”.
- However, the Court has reserved its judgment on the complete removal of ceiling limits on iron ore mining.

### **What are the implications?**

- India’s efforts to clean up illegal mining and export of iron ore, left steel producers in the lurch after 2011.
- With closure of mines, steel mills faced raw material shortages forcing them to import, thereby opening up the country to business for iron ore giants from outside India.
- India exports its low-grade ore mainly to China.
- Hence, resuming exports in Karnataka would lower supplies to the local market and benefit Chinese steelmakers, the Indian Steel Association has argued.

- The restrictions on production and sale had also affected lakhs of mining dependants in Karnataka making their livelihood uncertain.
- The Court order may offer them some respite.

## **THE HINDU**

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### **Vostok 2022**

- An Indian Army contingent comprising troops from 7/8 Gurkha Rifles is participating in the multilateral strategic and command exercise ‘Vostok-2022’ which commenced at the training grounds of the eastern military district in Russia.
- The exercise also includes participation by the Chinese People’s Liberation Army.
- “The exercise is aimed at interaction and coordination amongst other participating military contingents and observers,”
- Russia has stated that Vostok-2022 will be conducted in two phases.
- Participating contingents include observers from the Collective Security Treaty Organisation, the Shanghai Cooperation Organisation (SCO) and other partner states including Algeria, Armenia, Azerbaijan, Belarus, India, Kazakhstan, Kyrgyzstan, China, Laos,

Mongolia, Nicaragua, Syria and Tajikistan.

- India also defended its participation in the exercises in response to U.S. criticism.
- “India has been regularly participating in multilateral exercises in Russia, along with a number of other countries,”

**THE HINDU**

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## INS VIKRANT



- India commissioned its first indigenously designed and built aircraft carrier, INS Vikrant, and

joined a small group of countries which include the U.S., the U.K., Russia, France and China, that have the capability to design and build carriers with a displacement of over 40,000 tonnes.

- What India has demonstrated is the capacity to develop a carrier although it has been operating these ships for over 60 years.
- It took 17 years from the time the steel was cut and around ₹20,000 crore to make Vikrant a reality.
- The new aircraft carrier is a sign of India's expanding atmanir bharta or self-reliance in defence
- The Indian Navy's ambition is to have three aircraft carriers it already has INS Vikramaditya procured from Russia and it has suggested that the expertise gained from building Vikrant could now be used to build a second, more capable, indigenous carrier.
- At the commissioning ceremony in Kochi, Defence Minister Rajnath Singh reiterated India's interest in "a free, open and inclusive Indo-Pacific" and Mr. Modi's idea of 'SAGAR' or Security and Growth for All in the Region.
- A strong Navy is also critical to India's ambition to grow its share in global trade, which is largely maritime INS Vikrant significantly expands the

Indian Navy's footprint in the backdrop of increasing Chinese activity in the region and New Delhi's closer cooperation with the U.S.

- While MiG-29K fighter jets will now be integrated into the fleet air arm of Vikrant, the Navy has taken an active interest in procuring either the French Rafale M or the American F/A-18 Super Hornet.
- This would need structural modifications in the ship which would allow operating these more capable aircraft from its deck.

## **THE HINDU**

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### **INDIA'S CYBER INFRASTRUCTURE**

- Supreme Court of India earlier, the law was finally settled in Arjun Pandit Rao Khotkar vs Kailash Kushanrao Gorantyal & Ors.
- The Court held that a certificate under Section 65B(4) of the Indian Evidence (IE) Act was a mandatory prerequisite for the admissibility of (secondary) electronic record if the original record could not be produced.
- With 'police' and 'public order' being in the State List, the primary obligation to check crime and create

the necessary cyberinfrastructure lies with States.

- Though the Government of India has taken steps that include the setting up of the Indian Cyber Crime Coordination Centre (I4C) under the Ministry of Home Affairs to deal with all types of cybercrime, much needs to be done to plug the infrastructural deficit.
- At the same time, with the IT Act and major laws being central legislations, the central government is no less responsible to evolve uniform statutory procedures for the enforcement agencies.

#### **No procedural code**

- There is no separate procedural code for the investigation of cyber or computer-related offences.
- As electronic evidence is entirely different in nature when compared with evidence of traditional crime, laying down standard and uniform procedures to deal with electronic evidence is essential.
- The broad 'guidelines for the identification, collection, acquisition and preservation of digital evidence' are given in the Indian Standard IS/ISO/ IEC 27037: 2012, issued by the Bureau of Indian Standards (BIS).
- This document is fairly comprehensive and easy to



comprehend for both the first responder.

### **Shortage of technical staff**

- Second, there have been half hearted efforts by the States to recruit technical staff for the investigation of cybercrime.
- A regular police officer, with an academic background in the arts, commerce, literature, or management may be unable to understand the nuances of the working of a computer or the Internet.
- He can at best, after proper training, act as a first responder who could identify digital evidence and secure the scene of crime or preserve digital evidence till the arrival of an experts.
- It is essential that State governments build up sufficient capacity to deal with cybercrime.
- It could be done either by setting up a separate cyber police station in each district or range, or having technically qualified staff in every police station.
- Further, the Information Technology (IT) Act, 2000 insists that offences registered under the Act should be investigated by a police officer not below the rank of an inspector.
- The fact is that police inspectors are limited in number in districts, and

most of the field investigation is done by sub-inspectors.

- Third, the cyber forensic laboratories of States must be upgraded with the advent of new technologies.
- Offences related to cryptocurrency remain under-reported as the capacity to solve such crimes remains limited.
- The central government has proposed launching a digital rupee using blockchain technology soon.

### **Need for localisation**

- Most cybercrimes are trans-national in nature with extra-territorial jurisdiction. The collection of evidence from foreign territories is not only a difficult but also a tardy process.
- India has extradition treaties and extradition arrangements with 48 and 12 countries, respectively.
- In most social media crimes, except for the prompt blocking of an objectionable website or suspect's account, other details do not come forth quickly from large IT firms.
- Therefore, 'data localisation' must feature in the proposed Personal Data Protection law so that enforcement agencies are able to get timely access to the data of suspected Indian citizens.

## THE HINDU

### Tenth review conference of NPT

- The Tenth Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) concluded last week in New York. Marking 52 years of a treaty that every speaker described as the 'cornerstone of the global nuclear order
- Since 1970, when the NPT entered into force, only four of the 10 review conferences (in 1980, 1990, 2000 and 2010) have concluded with a consensus document, the review years were: 1975, 1980, 1985, 1990, 1995, 2000, 2005, 2010, 2015, and 2022.
- There was one key difference in 2022. In the past, the divergences were over Iran, Israel, and West Asia or between the nuclear haves and nuclear have-nots. The three depositary states (the United States, the United Kingdom and the U.S.S.R./Russia) were always on the same page.
- The difference in 2022 was that it pitched Russia against the West; it was the inability to find language to address the nuclear safety crisis at the Zaporizhzhia nuclear power plant in Ukraine, under Russian occupation since March, that ultimately led to the failure.
- The NPT was negotiated during the 1960s to reconcile three competing objectives controlling the further spread of nuclear weapons beyond the P-5 countries (the U.S., the U.S.S.R., the U.K, France and China) that had already tested; committing to negotiating reductions of nuclear arsenals leading to their elimination; and sharing benefits of peaceful applications of nuclear science and technology.
- The first was strongly supported by the nuclear-haves; the latter two were demands made by the nuclear have-nots.
- Despite apprehensions that by the 1980s, there would be close to 25 nuclear powers, in the last 50 years, only four more countries have gone on to test and develop nuclear arsenals India, Israel, North Korea and Pakistan (South Africa developed nuclear weapons but the apartheid regime destroyed them and joined NPT in 1991 before relinquishing power to majority rule).
- After the end of the Cold War and the break-up of the U.S.S.R. in 1991, non-proliferation remained a shared priority for the major powers and the International Atomic Energy Agency,

set up originally to promote international co-operation became better known as the non-proliferation watchdog.

- The first signal was the U.S. withdrawal from the 1972 Anti-Ballistic Missile (ABM) Treaty in 2002 on the grounds that it unduly constrained its missile defence activities.
- Limits imposed by the ABM Treaty had been a critical element in creating mutual vulnerability as a means of underwriting deterrence stability.
- It was a unipolar world with the U.S. as the dominant power.
- Russia gradually responded by embarking on its nuclear modernisation.
- In 2019, the U.S. notified Russia of its decision to quit the 1987 Intermediate Range Nuclear Forces (INF) Treaty that had obliged both countries to get rid of all ground launched missiles with a range of 500-5,500 km.
- The U.S. blamed Russia for cheating on its obligations and pointed out that China's missile developments created new security threats that needed to be addressed.
- The U.S. was now facing two strategic rivals.
- The only surviving arms control treaty between Russia and the U.S. is the New START Treaty that imposes a ceiling on operational strategic nuclear weapons of 700 launchers and 1,550 warheads each.
- It expires in 2026 and there are no signs of any follow-on discussions.
- Joe Biden administration's Nuclear Posture Review is awaited, the U.S.'s 30-year nuclear modernisation programme, intended to provide 'credible deterrence against regional aggression' is already underway.
- This has been used to justify developing and deploying more usable low yield nuclear weapons.
- Russia (and China too) is developing hypersonic delivery systems that evade missile defences as well as larger missiles that do not need to travel over the Arctic.
- Also on the cards are nuclear torpedoes and new cruise missiles.
- At the conference, France, the U.K. and the U.S. wanted to draw a distinction between "irresponsible" nuclear threats of an offensive nature and "responsible" nuclear threats for defensive purposes but Russia (and China) stymied western efforts.
- Frustrated by the absence of progress on nuclear disarmament, the nuclear have-nots successfully

negotiated a Treaty on the Prohibition of Nuclear Weapons (TPNW, also called Ban Treaty) in 2017 that entered into force in January 2021.

- All 86 signatories are nuclear have nots and parties to the NPT.
- The TPNW creates a new legal instrument and at their meeting in June in Vienna, the TPNW states committed to pushing for 'stigmatising and de-legitimising' nuclear weapons, condemning all nuclear threats and 'building a robust global peremptory norm against them'.
- The Comprehensive Test Ban Treaty (CTBT) was concluded in 1996 but has yet to formally enter into force because two major powers, the U.S. and China, have yet to ratify it.

**THE HINDU**

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## India's approach to Vostok 22

### The story so far:

- From September 1-7, Russia is holding annual military exercises in its eastern region, with about 13 countries including India and China sending contingents
- They include a maritime component near the disputed islands of South Kuril, claimed by both Russia and Japan.

### Who is taking part in Vostok-22?

- The countries that have sent military contingents are Algeria, Armenia, Azerbaijan, Belarus, India, Kazakhstan, Kyrgyzstan, China, Laos, Mongolia, Nicaragua, Syria, and Tajikistan.
- India has only sent its army contingent of the 7/8 Gurkha Rifles, and will not take part in the maritime section of the two-part event.
- This is because, while the first part of the land exercises will be held in Russian military training grounds in Siberia and the Far Eastern Federal District, the maritime part of the exercises would be held in the Sea of Okhotsk and the Sea of Japan.
- These are near the disputed South Kuril Islands.

### What does India's participation mean?

- By sending an army contingent to join Russian and Chinese troops in the exercises at this time, New Delhi is aiming to send a four-pronged message.
- The first is its continuing relationship with Russia despite the Ukraine war, where the Modi government has decided not to join the Western sanctions regime, or to curb oil imports and other economic engagement with Moscow.
- The second is to signal balance and non-alignment in the current crisis, given India has mostly abstained from votes at the United Nations seeking to criticize Russia.
- India also takes part in routine Indo-Pacific exercises with its Western partners including the Quad, as well as in bilateral exercises, like the India-U.S. "Yudh Abhyas" in Uttarakhand next month.
- These exercises will take place just after Prime Minister Narendra Modi's visit to Uzbekistan for the Shanghai Cooperation Organisation (SCO) summit in September, where he will participate alongside leaders of Russia, China, Belarus, Kazakhstan, and Kyrgyzstan, who have sent contingents for Vostok-22 as well.

- It is a way of signalling that India remains comfortable in both its engagement with the U.S.-EU coalition and its rival groupings led by Russia-China.
- Third, by staying away from the maritime exercises, New Delhi has shown both its sensitivity to Japan's concerns on maintaining the status quo over the disputed islands, as well as stressing the importance of territorial sovereignty and integrity for India.
- This coming week, India is hosting a Quad meeting on Indo-Pacific initiatives in Delhi and holding bilateral talks with the U.S. and Japan on trade and defence as well.
- Finally, the message the government continues to give is that it is willing to engage with China on a number of fronts, even as military talks with China at the LAC (Line of Actual Control) remain stuck.
- The government, however, asserts that it cannot be "business as usual" with China until the latest logjam over Chinese troops' transgression since April 2020 is resolved.
- The James Webb Space Telescope has captured the first unambiguous evidence of carbon dioxide in the atmosphere of a planet outside the Solar System.
- The telescope gleaned information about the composition of the gas giant WASP-39b as it moved across the face of its star.
- The James Webb Space Telescope (JWST) is a space telescope designed primarily to conduct infrared astronomy. As the largest optical telescope in space, its greatly improved infrared resolution and sensitivity allow it to view objects too old, distant, or faint for the Hubble Space Telescope
- U.S. National Aeronautics and Space Administration (NASA) led JWST's development in collaboration with European Space Agency (ESA) and the Canadian Space Agency (CSA).
- Infrared astronomy is a sub-discipline of astronomy which specializes in the observation and analysis of astronomical objects using infrared (IR) radiation.
- The wavelength infrared light ranges from 0.75 to 300 micrometres and falls in between visible radiation, which ranges from 380 to 750 nanometres, and submillimeter waves.

## **THE HINDU**

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### **James Webb telescope**

- CO2 on exoplanet



- Infrared astronomy began in the 1830s, a few decades after the discovery of infrared light by William Herschel in 1800.
- The NASA Goddard Space Flight Center (GSFC) in Maryland managed telescope development, the Space Telescope Science Institute in Baltimore on the Homewood Campus of Johns Hopkins University operates JWST, and the prime contractor was Northrop Grumman.
- The telescope is named after James E. Webb, who was the administrator of NASA from 1961 to 1968 during the Mercury, Gemini, and Apollo programs.

#### **MISSION GOALS**

- Search for the first galaxies or luminous objects formed after the Big Bang
- Determine how galaxies evolved from their formation until now
- Observe the formation of stars from the first stages to the formation of planetary systems
- Measure the physical and chemical properties of planetary systems, including our own Solar System, and investigate the potential for life in those systems.

#### **INSTRUMENTS**

##### **Near Infrared Camera (NIRCam)**

- Near Infrared Spectrograph (NIRSpec)
- Mid Infrared Instrument (MIRI)
- Fine Guidance Sensors/Near Infrared Imager and Slitless Spectrograph (FGS/NIRISS).

##### **WASP-39b**

- WASP-39b, officially named Bocaprins, is a "hot Jupiter" extrasolar planet discovered in February 2011 by the WASP project, notable for containing a substantial amount of water in its atmosphere.
- In addition, for the first time for any exoplanet, WASP-39b was found to contain carbon dioxide in its atmosphere.

#### **THE HINDU**

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##### **Diamond in Earth's core**

##### **Can diamonds be found in plenty deep inside the Earth?**

- The Earth's core is the largest carbon storage on Earth roughly 90% is buried there.
- Scientists have shown that the oceanic crust that sits on top of tectonic plates and falls into the interior contains hydrous minerals

and can sometimes descend all the way to the core-mantle boundary.

- The temperature at the core-mantle boundary is at least twice as hot as lava, and high enough that water can be released from the hydrous mineral.
- They found that for the conditions of the core-mantle boundary carbon comes out of the liquid iron-metal alloy and forms diamond (Geophysical Research Letters).
- They found that carbon leaking from the core into the mantle by this diamond formation process may supply enough carbon to explain the elevated carbon amounts in the mantle.

#### **THE HINDU**

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### **Migration and conservation effort**

- Conservation efforts usually aim to bring in more individuals to increase the population size of endangered species.
- This is done with a view of promoting gene flow.
- Such a move is based on the understanding that bringing in (migrating) more members of the endangered group will lead to a greater import of genetic variation

and thereby a greater variation in the focal population.

- Experiments done by researchers from the Indian Institute of Science Education and Research (IISER), Pune, indicate that in contrast to the simple plan outlined here, other factors, namely, the nature of the environment and the genetic constitution of the immigrants can play a role in deciding whether the evolutionary outcomes of immigration are beneficial.
- The effect of migration is not just a property of the evolving individuals but results from an interaction between the nature of their environment and the genetics of the immigrating individuals.

#### **THE HINDU**

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## Inflatable Aerodynamic Decelerator (IAD)

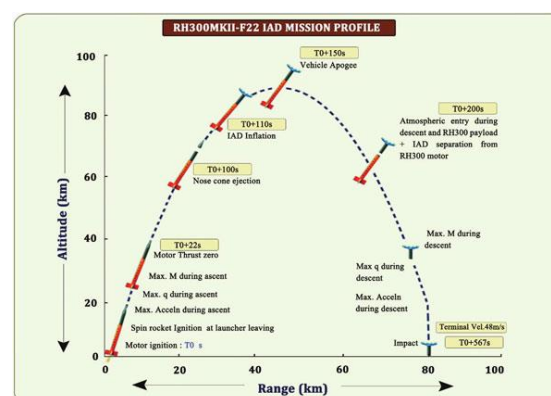
- The Indian Space Research Organisation (ISRO) just declared that it has successfully demonstrated the new technology with Inflatable Aerodynamic Decelerator (IAD)

### What is IAD?

- Inflatable Aerodynamic Decelerator or IAD in short is a technique used for an atmospheric entry payload. An inflatable envelope and an inflatant (anything that inflates the envelope, like air or helium) make up the inflatable aerodynamic decelerator.
- The inflatant is designed to fill the inflatable envelope to a condition such that it surrounds the payload meant to enter the atmosphere of a planet or satellite and causes aerodynamic forces to slow it down.
- In simpler words, IAD is designed to increase drag upon entering the atmosphere of any planetary body, like Earth, Mars, or even Moon. Its shape is maintained by a closed, gas-pressured body and the inflatant gas is also generated internally. Some versions also use ram air or both.

### ISRO's IAD

- ISRO's latest IAD has been designed and developed at Vikram Sarabhai Space Centre.
- The Liquid Propulsion Systems Centre (LPSC), an R&D wing of ISRO created the pneumatic inflation system for the IAD system. In the inflation system, it uses compressed nitrogen stored in a bottle.
- Where does ISRO intend to use it?
- The IAD will help ISRO in performing many space tasks effectively including recovery of spent stages of rockets, for landing payloads on missions to other planetary bodies.
- This is the first instance where an IAD has been specially created for spent stage recovery.
- "This demonstration opens a gateway for cost-effective spent stage recovery using the Inflatable Aerodynamics Decelerator technology and this IAD technology can also be used in ISRO's future missions to Venus and Mars.



## Nanourea

- The world's first nano urea liquid plant has been inaugurated by Prime Minister Modi at Kalol in Gujarat.
- India has become the first country to start commercial production of Nano urea in the world.

### What is a nano urea liquid?

- Nano urea liquid is a nanotechnology-based fertilizer to increase the growth of crops by restoring nitrogen to plants as an alternative to conventional urea. It enhances the nutritional quality and productivity of the crop along with improving the underground water quality.
- Conventional Urea, a chemical fertiliser, is used to artificially fulfill the nitrogen need of the plant while Nano urea liquid is developed to replace the former and cut down its requirement by 50%.
- The Indian Farmers Fertiliser Cooperative Limited (IFFCO), a cooperative society, has developed and patented nano urea liquid technology.

### What are the benefits of nano urea liquid?

- "The power of a full sack of urea has come into a half-litre bottle, leading to huge savings in logistics. The Plant will produce about 1.5 lakh bottles of 500 ml per day."

- Nano urea liquid will help in reducing the use of chemical fertilizers to save the environment because the imbalanced use of fertilizers is deteriorating the health of the soil. It is also causing air and water pollution. Nano Urea can be a game-changer as it will cut down the use of conventional urea up to 50%.
- It will also help in direct savings, reduce transportation costs, and make storage much easier.

### How does it work?

- According to the IFFCO website, "When sprayed on leaves, Nano Urea easily enters through stomata and other openings and is assimilated by the plant cells.
- It is easily distributed through the phloem from the source to sink inside the plant as per its need. Unutilized nitrogen is stored in the plant vacuole and is slowly released for proper growth and development of the plant.

### Criticism

- Nano urea sold in 500-ml bottles has only 4% nitrogen (or around 20 g).
- Plants need nitrogen to make protein and they source almost all of it from soil bacteria which live in a plant's roots and have the ability to break down atmospheric nitrogen, or that from chemicals such as urea into a form usable by plants.

- To produce one tonne of wheat grain, a plant needs 25 kg of nitrogen.
- For rice, it is 20 kg of nitrogen, and for maize, it is 30 kg of nitrogen.
- Not all the urea cast on the soil, or sprayed on leaves in the case of nano urea, can be utilised by the plant. If 60% of the available nitrogen was used, it would yield 496 kg of wheat grain.
- Even if 100% of 20 g of nano urea, which is what is effectively available, is utilised by the plant, it will yield only 368 g of grain
- “Urea is highly water soluble and already reaches the lowest form of concentration when absorbed. How nanoparticles can increase the effectiveness of nitrogen uptake by being still smaller.
- However, ensuring that the site remains well suited for astronomy implies keeping the night sky pristine, or ensuring minimal interference to the telescopes from artificial light sources such as electric lights and vehicular lights from the ground.
- A dark sky reserve is a designation given to a place that has policies in place to ensure that a tract of land or region has minimal artificial light interference.
- The International Dark Sky Association is a U.S.-based non-profit that designates sites as international dark sky places, parks, sanctuaries and reserves, depending on the criteria they meet.
- To promote astro-tourism, villages around Hanle would be encouraged to promote homestays equipped with telescopes that visitors can use to view the night sky. Villagers would also be trained to help visitors with astronomical observations.

## **THE HINDU**

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### **Dark sky reserve**

- In a first-of-its-kind initiative, the Department of Science & Technology (DST) has announced the setting up of India’s first dark sky reserve at Hanle in Ladakh
- Hanle, which is about 4,500 metres above sea level, hosts telescopes and is regarded as one of the world’s most optimal sites for astronomical observations.

## **THE HINDU**

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### **Staff level agreement**

#### **The story so far:**

- The International Monetary Fund (IMF) on September 1 announced a staff-level agreement with Sri Lanka, months after the island nation’s economic crisis intensified this year,

following a serious Balance of Payments problem.

### **What is the staff-level agreement?**

- It is a formal arrangement by which IMF staff and Sri Lankan authorities agree on a \$2.9-billion package that will support Sri Lanka's economic policies with a 48-month arrangement under the Extended Fund Facility (EFF).
- However, even though the IMF has agreed to support Sri Lanka, the EFF is conditional on many factors.
- Sri Lanka must take a series of immediate measures that the Fund has deemed necessary to fix fiscal lapses and structural weaknesses such as raising fiscal revenue, safeguarding financial stability and reducing corruption vulnerabilities.
- Apart from making domestic policy changes to strengthen the economy, Sri Lanka must also restructure its debt with its multiple lenders.
- The IMF has said that it will provide financial support to Sri Lanka only after the country's official creditors give financing assurances on debt sustainability, and when the government reaches a collaborative agreement with its private creditors.
- The process could take several months.

### **THE HINDU**

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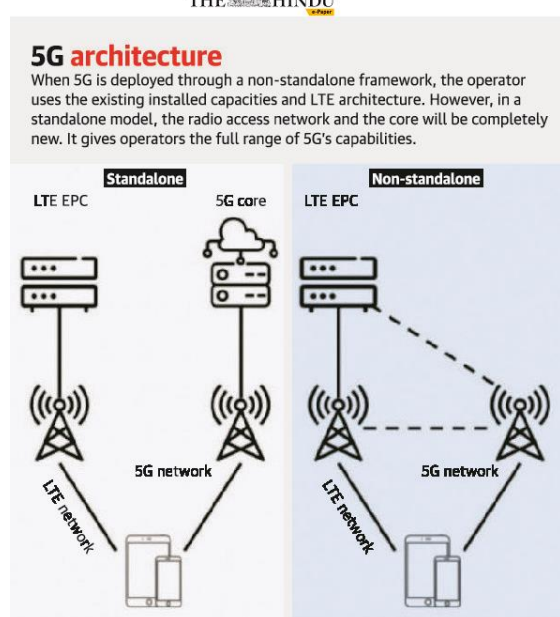
## **4G multiplexing**

### **4G multiplexing**

- With 4G-capable cell phones, people could make calls over the Internet instead of via telephone networks.
- This generation's evolution to 4G+ (LTE advanced), which offered download speeds of 200 to 300 Mbps, made it easier for people to connect and talk over the Internet.
- Secondly, 4G's multiplexing capability, technically known as orthogonal frequency division multiplex (OFDM), provided a level of efficiency in achieving high data transfer rates while allowing multiple users to share a common channel.
- The OFDM modulation scheme divides a channel into several subcarriers.
- These subcarriers are spaced orthogonally so they don't interfere with one another despite the lack of guard bands between them. "OFDM is a very good choice for a mobile TV air interface.
- It offers good spectral efficiency, immunity to multi-path, good mobile performance, and it works well in single-frequency networks such as those planned for mobile TV," according to a research paper titled.
- A 5G-based connected future is upon us. That means deploying services in a world filled with 4G compatible

devices. So, telecom operators have two options.

- They can either build a non-standalone (NSA) or a standalone architecture.
- In an NSA framework, the operator can use their existing installed capacities and LTE architecture to deploy 5G services while implementing a new radio access network (RAN).
- The SA model, on the contrary, is a pure play 5G architecture that provides operators full range of the fifth-generation capability and lets them slice the network. In this architecture, RAN and the core are completely new.



## THE HINDU

### India and Bangladesh

- The two neighbours have expanded their partnership to include Artificial

Intelligence, Fintech, cybersecurity, start-ups, and connectivity.

- Trade will be a focal point during Ms. Hasina's visit as the two countries gear up to sign a Comprehensive Economic Partnership Agreement (CEPA)
- Bangladesh is India's sixth largest trade partner with bilateral trade rising from \$2.4 billion in 2009 to \$10.8 billion in 2020-21.
- Bangladesh imports critical industrial raw material from India on which its exports are reliant.
- India's connectivity projects with ASEAN and Bangladesh will open up the region to economic growth. Bangladesh has expressed its interest in joining the India-Myanmar-Thailand highway project.
- India-Bangladesh bilateral waterway trade will get boosted as India can now use the Mongla and Chittagong ports.
- India is rallying Bangladesh to divert its exports through Indian ports in place of Malaysian or Singaporean ports.
- Enhancing connectivity through India's Northeast and Bangladesh is important for bilateral cooperation.
- Currently, three express trains and international bus services operate between Indian and Bangladesh.
- The sharing of the waters of the Teesta has remained a thorny issue



between the two countries since 1947.

- For West Bengal, Teesta is important to sustain its impoverished farming districts which comprise 12.77% of its population.
- For Bangladesh, the Teesta's flood plains cover about 14% of the total cropped area of the country and provide direct livelihood opportunities to approximately 7.3% of the population.
- The countries are expected to sign at least one major river agreement during the upcoming trip.
- For Bangladesh, the Teesta's flood plains cover about 14% of the total cropped area of the country and provide direct livelihood opportunities to approximately 7.3% of the population.
- The countries are expected to sign at least one major river agreement during the upcoming trip.
- In 2015, India and Bangladesh resolved the decades-long border dispute through the Land Swap Agreement
- Chinese inroads into the neighbourhood have been a cause of worry for India. China has been actively pursuing bilateral ties with Bangladesh. Bangladesh had successfully approached China for a mega project to enhance Teesta river water flow.

- Bangladesh also requires China's support in resolving the Rohingya refugee crisis. Bangladesh is the second biggest arms market for China after Pakistan. Bangladesh has also been warming up to Pakistan.

## **THE HINDU**

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### **India and Australia**

- Apart from being two English speaking, multicultural, federal democracies that believe in and respect the rule of law, both have a strategic interest in ensuring a balance in the Indo-Pacific and in ensuring that the region is not dominated by any one hegemonic power.
- In addition, Indians are today the largest source of skilled migrants in Australia and the economic relationship.
- From cyber threats and artificial intelligence (AI) governance in a geopolitically turbulent region, to how they will decarbonise their economies and help each other develop trusted supply chains through critical minerals cooperation, to how India's tech talent can help address Australia's skills gaps through migration.
- Australia wants to find alternative markets to China and diversify supply chains for its critical minerals.

- As a country with reserves of about 21 out of the 49 minerals identified in India's critical minerals strategy, Australia is well placed to serve India's national interests required for India's carbon reduction programme.

**THE HINDU**

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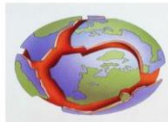
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## Earthquake in China

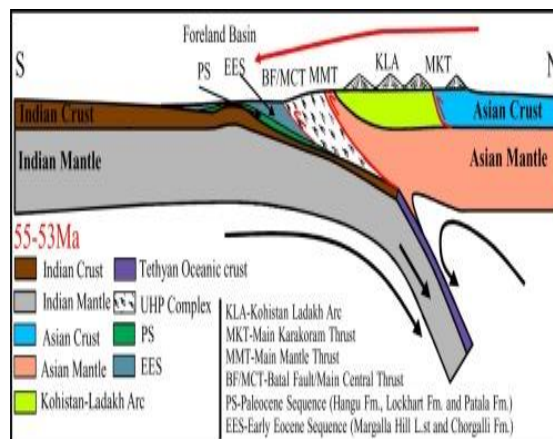
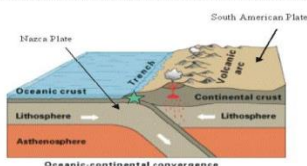
- The collision of India with the rest of Asia has led to seismic activity throughout Western China, particularly in Tibet and the Yunnan, Xinjiang, Sichuan, Gansu and Qinghai provinces. However, these regions in comparison with Eastern China have a low population density.
- These areas also in general have poorer transport and building codes.
- Throughout China, poor building codes increases the damage and loss of life from earthquakes.

### Lithosphere

The Lithosphere is the outer shell of the Earth including the crust and the upper mantle. It is composed of brittle rock. The lithosphere is broken into the tectonic plates. The plates or chunks of crust, drift about on the magma in the mantle below. They move only a few centimeters a year.



A subduction zone is a place where two plates collide. Plates are constantly shifting and moving, so when they subduct, one pushes beneath the other. Subduction zones create geologic formations such as mountain ranges, ocean trenches, and island arcs, as well as phenomena like earthquakes and volcanoes.



## THE HINDU

### Chile rejects constitution

- President Gabriel Boric vowed to continue working to reform the political landscape after Chileans on Sunday emphatically rejected a proposed new Constitution to replace the one adopted during the Augusto Pinochet dictatorship.
- With more than 99% of votes counted, the reject camp led with almost 62% compared to just over 38% for those in favour, in a result that exceeded the expectations of the conservative opposition.

### About Proposed constitution

- The proposed Constitution aimed to build a more welfare-based society, boost Indigenous rights and legalize abortion.
- In October 2019, protests sprung up mostly in the capital led by students



initially angered by a proposed metro fare hike.

- Those demonstrations spiraled into wider discontent with the country's neoliberal economic system as well as growing inequality.
- Among the chief concerns of opponents was the prominence given to the country's Indigenous peoples, who make up close to 13% of the 19 million-strong population.
- Gender parity Proposals to enshrine reproductive rights and protect the environment as well as natural resources such as water, which some say is exploited by private mining companies, had also garnered much attention.
- The new Constitution would have overhauled Chile's government, replacing the Senate with a less powerful "chamber of regions," and requiring women to hold at least half of positions in public institutions.

## **THE HINDU**

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### **SRS System**

- The SRS Airbag System is designed to supplement the seatbelt system and improve occupant protection in certain type of crashes.
- Airbags supplement the seat belt and enhance passenger safety in certain types of collision
- In the case of the SRS Airbag (Driver's side), a sensor will detect the impact and calculate the collision intensity and deploy the airbag.
- The time it takes for the airbag to finish deploying is approximately 0.03 seconds.
- That deployed airbag will deflate and the total time it takes is about 0.1 seconds.
- The human eye blinks for about 0.1 - 0.3 seconds.
- The Supplementary Restraint System (SRS) is basically an air-bag system
- This works together with conventional 3-point seat belts and prevents impact of the driver's chest and face with the steering wheel in the event of a collision.
- SRS may sometimes be installed to the passenger's side to prevent impact with the dashboard. Side-impact air-bags are also fitted to protect the upper body and head during a sideways impact.
- At speeds in excess of 40 kmph the seat belt alone is no longer adequate in the event of a serious accident.
- Analysis after accidents has concluded that, in 68% of cases, an air-bag provides a significant safety measure. It is predicated that if all cars in the world are equipped with airbags then the annual number of

fatalities can be reduced by well over 50,000

- The SRS uses a gas-generator module, which contains an explosive charge. Therefore, on no account the SRS should be dismantled or tampered with.
- Major components of supplementary restraint system.
- The sensor provides input signals into the SRS ECU often termed a “Diagnostics Module”, which constantly checks and monitors the entire SRS.
- When a frontal collision is confirmed by both a D-sensor and the S-sensor, the diagnostic module sends a current pulse to fire a gas generator unit contained with the air-bag module, which is located in the steering wheel centre pad.
- The air-bag is then inflated. If the diagnostic module detects a fault with the SRS, an instrument panel warning lamp is illuminated and the SRS is deactivated to prevent accidental deployment.
- Hilsa fish is one of the few fishes that is quite famous for its incredibly soft meat. Found in the freshwaters in eastern India, the Hilsa has a full flavour and a smooth but oily texture.
- Hilsa was found in abundance along the Bay of Bengal’s waters until a few years ago. Due to overconsumption and an increase in demands, the population of Hilsa fish has reduced significantly.
- Increase in demand of the Hilsa fish is one of the main reasons for the rise in Hilsa fish price. In coastal areas such as Goa, Kerala, West Bengal and Tamil Nadu, Hilsa fish price is relatively less when compared to cities away from the coast.
- Hilsa Fish is found in the freshwaters in Eastern India.
- The Hilsa fish is quite flavourful and soft but also has an oily texture. Hilsa is known for its numerous health benefits. Some of them are:
  - Rich source of proteins
  - Calcium to strengthen bones
  - Healthy fatty acids such as omega-3.
  - Prevents Coronary heart diseases.
  - Hilsa fish also provides vitamin A and vitamin D to your body.
  - Consuming Hilsa fish leaves you with healthy skin.

## **THE HINDU**

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### **Hilsa system**

- Hilsa Fish, popularly known as Ilisha is rich in good quality fatty acids and Omega-3 that prevent coronary heart diseases in humans.

## Conversion therapy

- The National Medical Commission (NMC) has written to all State Medical Councils, banning conversion therapy and calling it a “professional misconduct
- Conversion therapy is the pseudoscientific practice of attempting to change an individual's sexual orientation, gender identity, or gender expression to align with heterosexual and cisgender norms
- Common methods of conversion therapy are counselling, visualization, social skills training, psychoanalytic therapy, and spiritual interventions. Other methods that have been used include ice-pick lobotomies;
- A lobotomy, or leucotomy, is a form of neurosurgical treatment for psychiatric disorder or neurological disorder (e.g. epilepsy) that involves severing connections in the brain's prefrontal cortex.
- Chemical castration with hormonal treatment; aversive treatments, such as "the application of electric shock to the hands and/or genitals"; "nausea-inducing drugs ... administered... with the presentation of homoerotic stimuli";
- In 2021, Justice N. Anand Venkatesh of the Madras High Court issued a slew of interim guidelines for the

police, activists, Union and State Social Welfare Ministries, and the National Medical Commission, regarding the LGBTQIA+ community, to “ensure their safety and security to lead a life chosen by them.”

- The ruling prohibited any attempt to medically “cure” or change the sexual orientation of LGBTQIA+ (lesbian, gay, bisexual, transgender, queer, intersex, asexual or of any other orientation) people.
- It urged the authorities to take action against “professional[s] involving themselves in any form or method of conversion therapy,” which could include the withdrawal of licence to practice medicine.

## THE HINDU

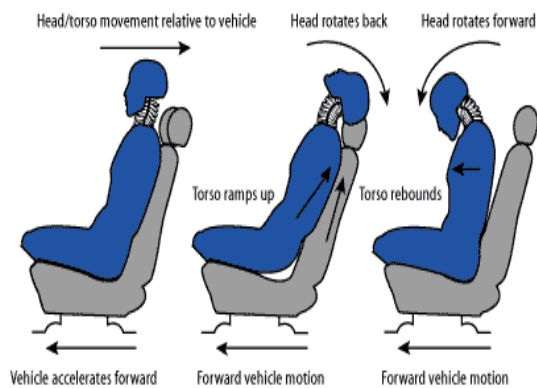
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### Head restraint

#### What role do head restraints play?

- Head restraints, which are found either as adjustable models or moulded into the seats, prevent a whiplash injury.
- This type of injury occurs mostly when the vehicle is struck from behind, leading to sudden extreme movement of the neck backwards and then forwards. It could also happen vice versa in other circumstances.

- The injury involves the muscles, vertebral discs, nerves and tendons of the neck.



### How does India regulate and enforce safety?

- On February 11, 2022, the Ministry of Road Transport and Highways issued a draft notification providing for three-point seat belts to be provided in all vehicles coming under the M1 category, that is, for carriage of passengers comprising not more than eight seats in addition to the driver's seat, for vehicles manufactured from October 1.
- Also, it stipulated relevant Indian Standards to be followed by the manufacturers for both seat belts

and reminder systems alerting occupants to wear them.

- What stands out is that the amended Motor Vehicles Act of 2019 already requires the occupants of a passenger vehicle to wear a seat belt.
- As per Section 194(B) of the Act, whoever drives a motor vehicle without wearing a safety belt or carries passengers not wearing seat belts shall be punishable with a fine of one thousand rupees.
- Evidently, although cars are equipped with seat belts, the enforcement for rear seat occupants is virtually absent in India.

### THE HINDU

### Higher education

- The NEP 2020 envisaged that it would “promote increased access, equity, and inclusion through a range of measures, including greater opportunities for outstanding public education.”
- It also provided an assurance that the autonomy of public institutions would be backed by adequate public funding.
- The NEP noted that public expenditure on education in India was nowhere close to the 6% of GDP envisaged by the 1968 policy,

reiterated in the 1986 policy, and reaffirmed in the 1992 review of the policy.

- Against this backdrop, it was gratifying that the 2020 policy endorsed a substantial increase in public investment by the Central and State governments to reach 6% of GDP at the earliest.
- Elaborating on the reasons, NEP 2020 said this level of public funding was “extremely critical for achieving the high-quality and equitable public education system that is truly needed for India’s future economic, social, cultural, intellectual progress and growth.”
- Going by the National Education Commission, also known as the Kothari Commission, which was the precursor to the 1968 policy, higher education should have been getting at least 2% of GDP.
- In contrast, the expenditure on higher education by the Centre and the States taken together nosedived from 0.86% of GDP in 2010-11 to a measly 0.52% in 2019- 20 (Budget Estimates, or BE).
- It is disquieting that the Centre’s expenditure on higher education dropped from 0.33% of GDP in 2010-11 to a mere 0.16% in 2019-20 (BE).
- The decline in public investment in higher education does not appear due to the fall in the receipts of the Central government.
- Higher education in India is already highly privatised
- The idea that higher education could be funded fully by the students or their parents out of their savings or through bank borrowings appears grossly misplaced in the Indian context.
- The NEP 2020 envisages enrolment in higher education to be nearly double by 2035.
- Considering the fact that the social and economic elites, the rich and the affluent, have already crossed a gross enrolment ratio of 100%, the future growth in higher education has to come from the socio-economically disadvantaged groups.
- Higher education in India may have had its failings, but it has served the nation rather well. It has played a critical role in sustaining the \$2.8 trillion economy that India has become today.
- But for enhanced investment in higher education, our vision of a \$5 trillion economy and the aspiration of becoming a high-income developed country could be jeopardised.

**THE HINDU**

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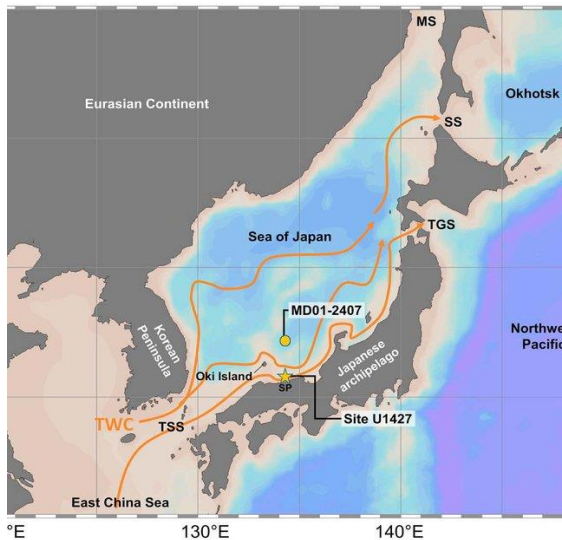


## Heatwaves in china and its impact

- China has logged its hottest August since records began, state media reported on Tuesday, following an unusually intense summer heat wave that parched rivers, scorched crops and triggered isolated blackouts.
- As a result of the drought and the increasing power consumption due to the heat, there was a resulting energy crisis of which several factories had to be shut down. The heat wave also caused far-reaching effects on the country's economy.
- Because of the drought and persistent heat, there were more forest fires in China, particularly in the Chongqing region.
- Also because of the lack of rain and the persistent heat, the level of the Yangtze dropped sharply, and the Three Gorges Dam was opened as a result to direct water into that river. It has been reported that silver iodide was used to form clouds in Anhui and other provinces.
- Poyang Lake, China's largest freshwater lake, in Nanchang, East China's Jiangxi Province has been reduced to just 25% of its usual size due to extreme weather conditions, causing a major drought.

## Sea of Japan

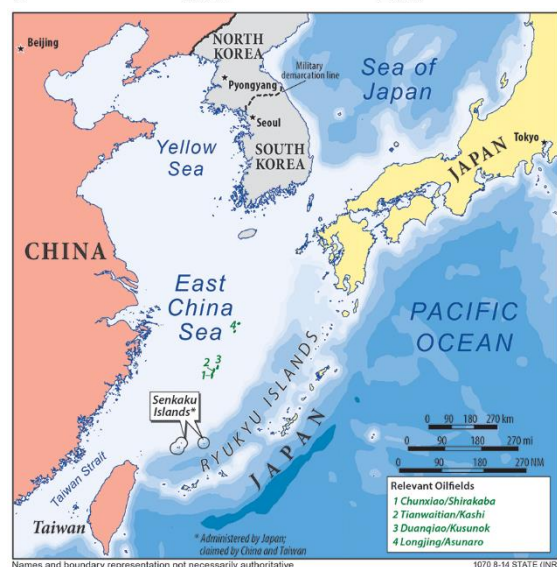
- The Sea of Japan is the marginal sea between the Japanese archipelago, Sakhalin, the Korean Peninsula, and the mainland of the Russian Far East.
- The Japanese archipelago separates the sea from the Pacific Ocean. Like the Mediterranean Sea, it has almost no tides due to its nearly complete enclosure from the Pacific Ocean.
- This isolation also affects faunal diversity and salinity, both of which are lower than in the open ocean.
- The sea has no large islands, bays, or capes. Its water balance is mostly determined by the inflow and outflow through the straits connecting it to the neighbouring seas and the Pacific Ocean. Few rivers discharge into the sea and their total contribution to the water exchange is within 1%.
- The seawater has an elevated concentration of dissolved oxygen that results in high biological productivity. Therefore, fishing is the dominant economic activity in the region.



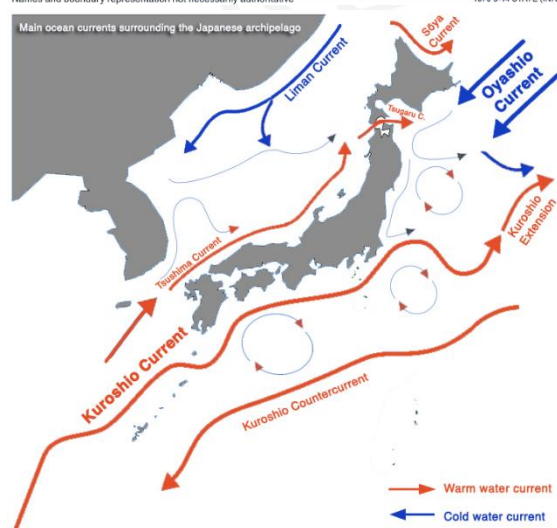
- There they merge into the Tsugaru Current and flow into the Pacific Ocean through the Tsugaru Strait.
- They also feed the Soya Current and exit through the La Perouse Strait to the Sea of Okhotsk.
- The returning branch is composed of the Liman, North Korea and Central (or mid-) Japan Sea currents which bring fresh and cold water along the Asian coast to the south.

## THE HINDU

### Origin of indo pacific



- The Origins of 'Indo-Pacific' Nomenclature
- The origin of the term 'Indo-Pacific' is traced to German geopolitical scholar Karl Haushofer who used it in the 1920s in his work, 'Indopazifischen Raum,' while Indian historian Kalidas Nag referenced it in the 1940s.
- In more contemporary history, the term gained prominence after then Japanese Prime Minister Shinzo Abe's speech in the Indian parliament in August 2007, where he remarked, "We are now at a point at which the Confluence of the Two Seas is coming into being. The Pacific and the Indian Oceans are now bringing about a dynamic coupling as seas of freedom and of prosperity."



- The Kuroshio (Japan Current), the Tsushima Current and the East Korea Warm Current bring warmer and more saline water to the north.

- Japan was among the first countries to use the phrase 'Free and Open Indo-Pacific' in its official discourse. In 2017, the United States (US) adopted the concept and translated it into the three pillars of security, economics, and governance.
- For India, its Indo-Pacific policy was enunciated by Prime Minister Narendra Modi at the Shangri-La Dialogue in 2018 where he outlined the seven elements of the country's vision for the region.
- Some observers are of the view that the concept of the Indo-Pacific is simply an attempt to be a counterweight to the rise of China.
- However, this brief argues, the growing salience of the Indo-Pacific is a consequence of the changing dynamics of economic interactions in the region, overall, and in particular, the rise of India. Indeed, there cannot be an Asia-wide concept without the inclusion of India as an economic and military power.

## **THE HINDU**

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### **India: Linchpin of the Indo-Pacific**

- India is poised to play a significant role in the future of the Indo-Pacific, and it perhaps begins with the country's cultural connections with the other countries in the region. For instance, while the Angkor Wat in Cambodia is well-known, the Cham civilisation in Vietnam also shared a common culture with India.
- The name "Indonesia" is derived from the Greek words Indos and nesos, meaning "Indian islands".
- Some analysts have noted that India's wide presence is such that "the influence of Indian culture and language has permeated Southeast Asia organically and without state sponsorship, political imposition or concrete effort."
- Economically, India is figuring prominently in the trade profile of countries in the region. Australia, Saudi Arabia, the UAE, Singapore, Indonesia, Japan, Malaysia, the US, and China, are among the top 15 of India's trade partners.
- India's trade with ASEAN has also registered a steady improvement. In terms of investments, Japan and Singapore are leading investors in India after Mauritius.

## **THE HINDU**

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### **Raman Magsaysay award**

- The CPI (M) cited the 'anti-communist' credentials of the

former Philippines President as the reason for declining the offer.

- Ramon Magsaysay was the seventh President of the Philippines. He came into prominence with his appointment as the Secretary of National Defence to deal with the communist-led Huks movement.
- President Ramon Magsaysay led a massive anti-Huks campaign in 1954 with a reorganised military and intelligence.
- Through the operation, his government forces captured 88 Huks, killed 43 and burned more than 500 enemy huts.

### **What is the Ramon Magsaysay Award?**

- Following the death of President Ramon Magsaysay in 1957, the Rockefeller Brothers Fund (RBF) established the Ramon Magsaysay Awards in the President's honour in agreement with the Philippines government.
- Later, the Fund set up the Ramon Magsaysay Award Foundation, a non-profit organisation to manage Asia's biggest honour that recognises selfless work transforming lives.
- Regarded as Asia's version of the Nobel Prize, the award was initially given for contributions to

government service, public service, community leadership, journalism, literature and creative communication arts, and peace and international understanding.

- The category of 'emergent leadership' was added later. From India, 58 have bagged the international honour.
- What about the campaign against the communist rebellion?
- The Hukbalahap was a communist-led, peasant-based movement with its roots in the pre-colonial era of political, economic and social inequalities.
- It was founded in the 1940s to fight the Japanese Army that had invaded the Philippines.
- A member of the Communist Party of the Philippines, Luis Taruc, was its first commander.
- The Hukbalahap emerged as a popular, well-organised, highly-trained force that aimed to seize power once the war ended.
- However, mistrust grew between the U.S. and the Huks which resulted in serious confrontations between the U.S. Army and the rebels. Backed by U.S. forces, the Philippines government disarmed the rebels and arrested their leader.

### **THE HINDU**

## **Provision of new Chilean constitution**

### **The story so far:**

- The people of Chile resoundingly rejected a new constitution which was set to replace a charter imposed by General Augusto Pinochet 41 years ago.
- Amid heavy turnout for the referendum, 61.9% of the voters rejected the draft document.
- President Gabriel Boric who had lobbied hard for the new document, said the results made it evident that the Chilean people “were not satisfied with the constitutional proposal that the convention presented to Chile.

### **Provisions of new constitution**

#### **The end of the Senate**

- The most visible change to Chile’s constitutional structure is the end of the upper chamber of the legislature, which would be replaced by a “Chamber of Regions.

#### **Decentralization of power**

- Decentralization is a longstanding demand in Chile, where power is unusually concentrated in the capital despite the country’s spanning 2,600 miles from end to end.
- The new constitution draft proposes to deliver on this demand, supplying

new powers to regions, communes and indigenous territories.

- A socially and environmentally conscious state
- The draft document describes Chile as a “social state,” and mentions the state will provide a healthcare service and ensure housing and quality education.
- Nature is also accorded rights, and new state organs are set to take up the task of protecting it.
- Greater weight to indigenous issues
- One aspect of the new constitution that attracted particular attention are provisions dealing with legal and land issues for indigenous people.
- The new constitution defines Chile as a plurinational state and proposes to consider customary law for indigenous people, which has spurred criticism that it provides for a parallel justice system or special treatment.

#### **Changes to water rights**

- Chile at present is the only country to declare water private property in its constitution, and the highly privatized water rights system was a lightning rod of protest in 2019.

#### **Moving beyond gender parity**

- The draft constitution mandates that all public institutions from ministries



to semi-public corporations have at least 50% of their members be women, meaning men can be a minority, but women cannot.

## **THE HINDU**

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### **Anti-nasal vaccine**

- India's first nasal COVID-19 vaccine, developed by Bharat Biotech, has been approved for primary immunisation in those 18 and above.

#### **What is a nasal vaccine?**

- In nasal approach, the vaccine dose is given via nose, rather than orally or through the arm.
- As the target is to deliver a dose which goes right into the respiratory pathways, the vaccine is either injected through a specific nasal spray or through aerosol delivery.

#### **How it works?**

- As the virus normally enters your body through the nose, the nasal vaccine causes your immune system to make proteins in your blood and in your nose that help you fight the virus.
- A doctor will spray the vaccine into your nostrils with a small syringe that has no needle.
- It usually takes about two weeks for it to start to work.

- Given the potency and rapid spread of the coronavirus, some say it makes sense to develop vaccines for the airway as well as the more standard jabs.

#### **How is nasal vaccine different?**

- Many microbes, including the coronavirus, enter the body through the mucosa wet, squishy tissues that line the nose, mouth, lungs and digestive tract triggering a unique immune response from cells and molecules there.
- Intramuscular vaccines generally do a poor job of eliciting this mucosal response and must instead rely on immune cells mobilized from elsewhere in the body flocking to the site of infection.

#### **How effective is it?**

- An effective nasal dose not only protects against Covid-19, but it also prevents the spread of the disease by offering another kind of immunity that occurs primarily in the cells that line the nose and throat.
- The nasal vaccine targets immune cells present in the mucosal membrane and tissue- which provides systematic as well as mucosal immunity present in other sites such as lungs and the intestines. Hence, a nasal vaccine may be more



capable of inoculating crowds against the deadly infection and prevent even mild symptoms from developing.

**THE HINDU**

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GES  
REPORTER

## PM SHREE SCHEME

### The PM SHRI scheme

- According to the Ministry of Education, the scheme will be called PM SHRI Schools (PM Schools for Rising India).
- Under the scheme, 14,500 schools across India's states and Union Territories will be redeveloped to reflect the key features of the NEP, 2020.
- The NEP for schools envisages a curricular structure and teaching style categorised in four stages: foundational, preparatory, middle, and secondary.
- According to the NEP, the foundational years (pre-school and grades I and II) should involve play-based learning. At the preparatory level (grades III-V), light textbooks are to be introduced along with some formal classroom teaching.
- Subject teachers are to be introduced at the middle level (grades VI-VIII). The secondary stage (grades IX-XII) will be multidisciplinary, with no hard separation between arts and sciences or other disciplines.
- It also proposed that board exams be held twice a year, including one for helping students to improve their

scores, and that two types of papers on mathematics should be offered a standard paper, and a different one to test higher levels of competency.

### Centrally sponsored scheme

- A centrally sponsored scheme is one in which the cost of implementation is mostly split in a 60:40 ratio between the Union government and the states/UTs. The mid-day meal scheme (now PM Poshan) or the PM Awas Yojana are examples of centrally sponsored schemes.
- In the case of the North-eastern states, Himachal Pradesh, Uttarakhand, Jammu and Kashmir, and UTs without legislatures, the Centre's contribution can go up to 90 per cent.
- PM SHRI will be implemented at a cost of Rs 27,360 crore over the next five years, in which the Centre's share will be Rs 18,128 crore.
- PM SHRI schools will be an upgrade of existing schools run by the Centre, states, UTs, and local bodies. This essentially means that a PM SHRI school can be an upgraded KV, JNV, or even a school that is run by a state government or a municipal corporation.

### Where and how

- The PM SHRI scheme will be application-based, which means states will have to identify schools for upgradation under the scheme.
- Subsequently, schools will be required to self-apply online.
- The portal will be opened four times a year, once every quarter, for the first two years of the scheme.
- They will be equipped with labs, smart classrooms, libraries, sports equipment, art room, etc., and shall also be developed as green schools with water conservation, waste recycling, energy-efficient infrastructure and integration of organic lifestyle in curriculum.
- These schools will also “offer mentorship” to other schools in their vicinity.

### THE HINDU

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#### Draft amendment to the Legal Metrology (Packaged Commodities) Rules 2011

- The Department of Consumer Affairs, Legal Metrology Division has notified a draft amendment to the Legal Metrology (Packaged Commodities) Rules 2011.
- What are the mandatory provisions under the Legal Metrology (Packaged Commodities) Rules,

2011? It is mandatory under the Legal Metrology (Packaged Commodities) Rules, 2011 to ensure a number of declarations, such as the name and address of the manufacturer/packer/importer, the country of origin, the common or generic name of the commodity, the net quantity, the month and year of manufacture, the Maximum Retail Price (MRP) and consumer care information.

- As a consumer-oriented policy, all pre-packaged commodities should also be inspected.
- As stated in Rule 2(h), the “principal display panel”, in relation to a package, means the total surface area of a package containing the information required in accordance with these rules, namely that all the information should be grouped together and given in one place the pre-printed information could be grouped together and given in one place and the online information in another place.
- Additionally, Rule 9(1)(a) provides that the declaration on the package must be legible and prominent.
- The consumers’ ‘right to be informed’ is violated when important declarations are not prominently displayed on the package.

- If there is more than one major product, Rule 6(1) (b) states that “.....the name or number of each product shall be mentioned on the package.” This sub-rule is, however, not applicable to mechanical or electrical commodities.

### **What are the proposed amendments?**

- As many blended food and cosmetic products are sold on the market, the key constituents need to be mentioned on the product packaging.
- It is common for consumers to assume that brands’ claims are accurate, but such claims are usually misleading.
- Additionally, the front side of the package must contain the percentage of the composition of the unique selling proposition (USP).
- Listing the USP of a product on the front of the package without disclosing its composition percentage violates consumer rights. Also, packages displaying key constituents must display a percentage of the content used to make the product.
- The Department of Consumer Affairs, Legal Metrology Division has suggested that at least two prime components should be declared on

the package’s front side along with the brand name.

- Currently, manufacturers list the ingredients and nutritional information only on the back of the packaging.
- The proposed Section 6(1)(ba) states that when a commodity contains more than one constituent, the front side of the package must include a declaration of two or more of the commodities’ prime constituents along with the brand name.
- This declaration must also include the percentage/quantity of the USPs of the product in the same font size as the declaration of the USPs
- When the new provision of Section 6(1) (ba) is added, consumers will not be misled by the fake claims of manufacturers relating to the content in blended foods and cosmetics.

### **THE HINDU**

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#### **Content moderation in Wikipedia**

- India has summoned officials of Wikipedia, in response to cricketer Arshdeep Singh Wikipedia page being edited with misleading information that stated he was a “khalistani”.

- To increase Wikipedia's reliability and also to prevent vandalism and disruptive edits, there are restrictions on edits to the content that Wikipedia hosts.
- One of these restrictions is to allow certain "protections" to be accorded to particular articles.
- An article may have varying degree of protection depending on the vulnerability of the article to vandalism, disruption, and abuse.
- In the case of social media platforms, platform owners such as Meta or Twitter are responsible for exercising due diligence in content moderation through individuals on their payroll.
- However, in Wikipedia, the situation is slightly different given that content moderation decisions are not taken by employees.
- What can the Indian government do if it is aggrieved by content on Wikipedia?
- In India, for intermediaries to claim the "safe harbour" of not being responsible for the content they host, under Section 79 of the Information Technology Act, 2000, they must abide by due diligence requirements under the Act and its Rules.
- As per the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021, there are certain categories of information that an intermediary should not allow to be hosted or uploaded on its platform.
- One such category is information that is "patently false and untrue, and is written or published in any form, with the intent to mislead or harass a person, entity or agency for financial gain or to cause any injury to any person".
- Therefore, in the Indian context, even if the Wikimedia Foundation does not own the information hosted on Wikipedia, once Wikimedia Foundation has "actual knowledge" of such content being hosted on its platform, it would be held responsible for the same.
- In the context of the IT Rules, 2021 "actual knowledge" occurs when an intermediary has been notified by either a court order or through an order of the appropriate agency demanding removal of the offending content.
- In this case while neither has happened, Wikipedia administrators and editors have removed the distortion from Arshdeep Singh's page and granted it certain protection such that only "trusted editors" can edit the page.

## Joint space exercise

- India and the U.S. will undertake joint military drills in October in Auli, Uttarakhand. Auli is at an altitude of 10,000 feet and some 95 km from the Line of Actual Control (LAC).
- The time is ripe for the inaugural India-U.S. Joint space military exercise.
- First, this single act will push India's defence partnership into a new orbit.
- Second, it will send a strong message to a common adversary.
- Third, it will have other ripple effects for the wider quad.
- Space has been singled out as a critical area of cooperation in the recent Defence Technology and Trade Initiative (DTTI) meeting between India and the U.S. For the first time in history, both countries are jointly staring at a common adversary. Nothing binds friends together as sharing the same displacement anxiety.
- The launch of the tri-service Defence Space Agency (DSA) has permanently taken the military away from the shadows of civil space.
- The government has also set up the Defence Space Research Agency (DSRA) to help develop space-based weapons for the DSA.
- Space is as much recognized as a military domain as land, water, air, and cyber
- The lowest hanging fruit would be a joint anti-satellite (ASAT) missile test. It is essentially a missile launched from the Earth's surface to destroy a satellite passing overhead.
- Both countries have demonstrated capability in this.
- The test would be against a simulated orbital target as that does not create space debris and is not included in the wording of the U.S. moratorium.
- Eventually, this will lead to other space military collaborations such as directed energy weapons, rendezvous and proximity operations (RPOs), and co-orbital ASATs.

## Space programmes

- France conducted its first space military exercise, ASTERX, in 2021. China is marching ahead to the Cis-Lunar space (region beyond the geosynchronous orbit) with an ambition to establish a permanent presence on the Moon by 2024.
- The doctrine in space is still evolving with the U.S. urging partner countries to lay down rules and norms.



- China and Russia have released a draft binding treaty of their own.
- Red lines and norms will eventually emerge but until then it provides an ideal new theatre to push Indo-U.S. military collaboration forward.
- Space has assets that form the bedrock of the modern economy GPS (PNT position navigation timing), telecom networks, early warning systems for missiles, and weather forecasts all are enabled by our satellites in GEO or LEO orbits.
- But NGOs have other expenses too. In order to achieve long-term and sustained impact, they need to pay for administrative and support expenses not specifically tied to programmes for instance, rent, electricity, technology, and human resource costs.
- CSR funders' focus on regulatory compliance amendments to the CSR law in 2021 include substantial financial penalties for noncompliance.

## **THE HINDU**

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### **CSR and NGO funding**

- Giving, both private and public, flowed to NGOs working towards combating pandemic-induced challenges such as loss of livelihood for vulnerable communities, food banks, and health and medical support.
- In any such social effort, program expenses attract the big cheques especially when they come from corporate social responsibility (CSR) initiatives in India.
- For example, an NGO working on education outcomes might receive funding for books, other online resources, teacher training, curriculum design, etc.
- Roughly 90% of the CSR funders are relatively small, unlisted companies and companies that spend less than ₹50 lakh annually on CSR are not required by law to have a CSR committee.
- They generally leave decision-making and action plans to company boards, who may have little to no experience working with NGOs or on social impact.
- Hence, their priorities tend to sway towards risk avoidance, compliance, and cost minimisation.
- Several larger companies have added CSR to the responsibilities of their HR or administration or communications head, rather than hiring professional leads, experienced in the social sector.

- The pandemic also exposed how vulnerable NGOs are to financial stress.
- Our research revealed that 54% of NGOs had less than three months in reserve funds in September 2020.
- This number stood at 38% before the pandemic. Without adequate reserves, NGOs cannot pay salaries or bills when faced with an unexpected funding shortfall.
- The CSR programmes cannot currently contribute to NGO reserves/corpus by law.
- However, by covering indirect costs and organisational development, they still help to relieve financial pressure and make organisations more resilient.
- As our research has shown, more CSR decision-makers are shifting their focus from compliance with CSR laws to the social impact they are making.
- CSR funders are following several themes to make this transition, such as hiring professionals, coming together in collaborative, and defining and publishing their impact metrics to hold themselves accountable.
- The idea is to move beyond signing cheques to recognising that, ultimately, what's good for Indian society is also good for business.

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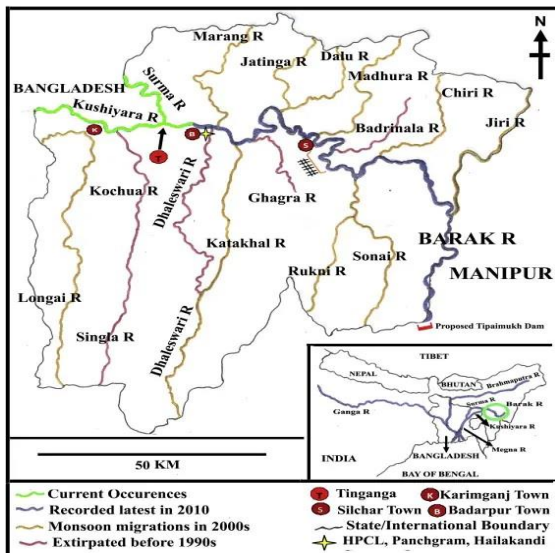
## THE HINDU

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### Kushiyara

- India and Bangladesh on Tuesday signed a water-sharing agreement
- The two leaders agreed to share the waters of the Kushiyara, a common river, in the first such arrangement between the countries since 1996.
- The agreement will benefit southern parts of Assam state in India and the Sylhet region in Bangladesh.
- The Kushiyara River is a distributary river in Bangladesh and Assam, India. It forms on the India-Bangladesh border as a branch of the Barak River, when the Barak separates into the Kushiyara and Surma.

- The waters that eventually form the Kushiyara originate in the uplands of the state of Assam and pick up tributaries from Nagaland and Manipur



THE HINDU

## Non-monetary factors for inflation

- Monetary policy tools like interest rate increases deployed by several central banks would not suffice to cool inflation
- While monetary policy as a solution for containing inflation had been considered 'sacrosanct', growth needed attention too
- "India's inflation management is an exercise of so many different activities, the majority of which are outside the monetary policy in today's circumstances,

### NON MONETARY FACTORS CAUSING INFLATION:-

- High population growth.
- Natural calamities and bad weather condition.
- Speculation and Hoardings
- High prices of import.
- Monopolies: profits and unfair trade practice.
- Underutilization of resources.

### THE HINDU

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## F16S and bubble canopy



- The General Dynamics F-16 Fighting Falcon is a single-engine multirole fighter aircraft originally developed by General Dynamics for the United States Air Force (USAF).
- Designed as an air superiority day fighter, it evolved into a successful all-weather multirole aircraft.
- The F-16 Fighting Falcon is a compact, multi-role fighter aircraft.
- It is highly maneuverable and has proven itself in air-to-air combat and air-to-surface attack.
- It provides a relatively low-cost, high-performance weapon system for the United States and allied nations.

### Features

- In an air combat role, the F-16's manoeuvrability and combat radius (distance it can fly to enter air combat, stay, fight and return) exceed that of all potential threat fighter aircraft.



- It can locate targets in all weather conditions and detect low flying aircraft in radar ground clutter.
- In an air-to-surface role, the F-16 can fly more than 500 miles (860 kilometers), deliver its weapons with superior accuracy, defend itself against enemy aircraft, and return to its starting point.
- An all-weather capability allows it to accurately deliver ordnance during non-visual bombing conditions.
- In designing the F-16, advanced aerospace science and proven reliable systems from other aircraft such as the F-15 and F-111 were selected. These were combined to simplify the airplane and reduce its size, purchase price, maintenance costs and weight.

#### **What is bubble canopy?**

- A bubble canopy is an aircraft canopy constructed without bracing, for the purpose of providing a wider unobstructed field of view to the pilot, often providing 360° all-round visibility.



#### **THE HINDU**

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### **Global pandemic treaty**

- An estimated 18 million people may have died from COVID-19, according various credible estimates, a scale of loss not seen since the Second World War.
- Further, with over 120 million people pushed into extreme poverty, and a massive global recession, no single government or institution has been able to address this emergency singlehandedly
- Gross health inequity has been observed in the distribution of vaccines, diagnostics, and therapeutics across the world
- Creation of a Global Pandemic Treaty was proposed at the Special Session of the World Health Assembly (WHASS).
- The underlying logic was that as global governance had failed during the pandemic, we needed political



commitment to mitigate future challenges.

- India produces nearly 60% of the world's vaccines and is said to account for 60%-80% of the United Nations' annual vaccine procurement "vaccine diplomacy" or "vaccine maitri" with a commitment against health inequity.
- India stood as a global leader, moving a proposal with South Africa in October 2020 to ask the World Trade Organization (WTO) 'to allow all countries to choose to neither grant nor enforce patents and other intellectual property related to COVID-19 drugs, vaccines, diagnostics and other technologies for the duration of the pandemic, until global herd immunity is achieved.

### Need for Global pandemic treaty

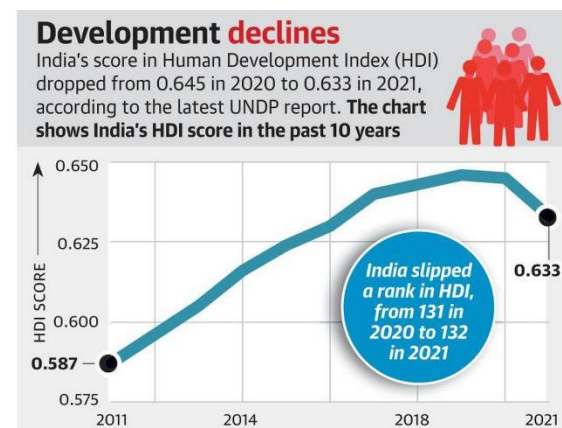
- In the COVID-19 pandemic, we have seen a multitude of initiatives to address the pandemic and to do better in the future such as the Vaccine Alliance.
- These are all valuable, but a treaty under the umbrella of WHO would, as highlighted by the journal BMJ, build coherence and avoid fragmentation.
- Such a treaty should cover crucial aspects such as data sharing and

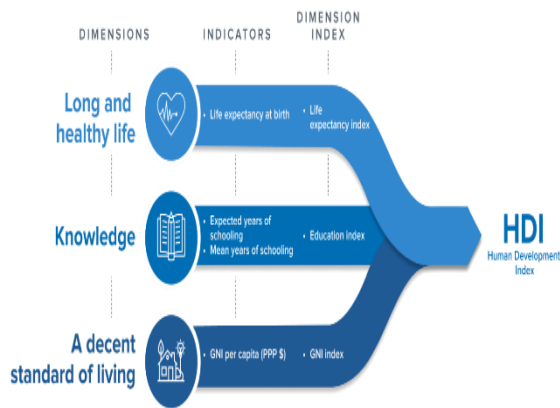
genome sequencing of emerging viruses.

- It should formally commit governments and parliaments to implement an early warning system and a properly funded rapid response mechanism.
- Further, it should mobilise nation states to agree on a set of common metrics that are related to health investments and a return on those investments.
- These investments should aim to reduce the public-private sector gap.
- Finally, a global pandemic treaty will not only reduce socioeconomic inequalities across nation states but also enhance a global pandemic preparedness for future health emergencies. India must take the lead in this.

### THE HINDU

#### HDI





- India ranks 132 out of 191 countries in the Human Development Index (HDI) 2021, after registering a decline in its score over two consecutive years for the first time in three decades.
- The drop is in line with the global trend since the outbreak of the COVID-19 pandemic during which 90% of the countries have fallen backward in human development.
- The Index is part of the Human Development Report 2021-2022 released by the United Nations Development Programme.
- The HDI measures average achievement of a country in three basic dimensions of human development a long and healthy life, education and a decent standard of living.
- It is calculated using four indicators life expectancy at birth, mean years of schooling, expected years of schooling, and the Gross National Income (GNI) per capita.
- A large contributor to the HDI's recent decline is a global drop in life expectancy, down from 72.8 years in 2019 to 71.4 years in 2021.
- India's HDI score of 0.633 places it in the medium human development category, lower than its value of 0.645 in 2018, indicating a reversal in progress.
- Like global trends, in India's case, the drop in HDI from 0.645 in 2018 to 0.633 in 2021 can be attributed to falling life expectancy at birth 70.7 years to 67.2 years. India's expected years of schooling stand at 11.9 years, and the mean years of schooling are at 6.7 years.
- The GNI per capita level is \$6,590. The COVID-19 pandemic has also exacerbated gender inequality, which increased 6.7% globally.
- India has, however, shown a slight improvement in its Gender Inequality Index value in the latest report as compared to the 2020 index (0.490 vs 0.493), after gender inequality worsened between 2019 and 2020 (0.486 vs 0.493).
- The index measures inequality in achievement between women and men in three dimensions reproductive health, empowerment and the labour market.
- The report notes that the uncertainty due to multiple global

crises has fuelled support for polarisation in many parts of the world which is detrimental for democratic freedom and human rights.

## THE HINDU

### Gogra Hotspring



Ministry of Defence

75  
Azadi Ka  
Amrit Mahotsav

### Joint Statement

Posted On: 08 SEP 2022 5:27PM by PIB Delhi

On 8th September 2022, according to the consensus reached in the 16th round of India China Corps Commander Level Meeting, the Indian and Chinese troops in the area of Gogra-Hotsprings (PP-15) have begun to disengage in a coordinated and planned way, which is conducive to the peace and tranquility in the border areas.

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SC,RSR,VKT

## THE HINDU





## Anti TB campaign

- Tuberculosis caused the largest number of deaths among all other infectious diseases in the country.
- India has a little less than 20% of the world's population, but has more than 25% of the total TB patients in the world. "This is a matter of concern.
- India has the world's highest tuberculosis (TB) burden, with an estimated 26 lakh people contracting the disease and approximately 4 lakh people dying from the disease every year.
- The economic burden of TB in terms of loss of lives, income, and workdays is also substantial.
- TB usually affects the most economically productive age group of society resulting in a significant loss of working days and pushing TB patients further into the vortex of poverty.
- The Ministry of Health and Family Welfare (MoHFW) is implementing an ambitious National Strategic Plan with the goal to achieve SDG End TB targets by 2025.
- The challenge of tuberculosis requires a multi-sectoral response to address the social determinants like nutritional support, living and working conditions, and an increase in access to diagnostic and treatment services.
- For effective engagement of the community in the path towards ending TB in India, MoHFW is implementing the "Community support TB patients - Pradhan Mantri TB Mukh Bharat Abhiyaan.
- Ni-kshay Mitra (Donor) for this program include co-operative societies, corporates, elected representatives, individuals, institutions, non-governmental organizations, political parties and partners who can support by adopting health facilities (for individual donor), blocks/urban wards/districts/states for accelerating response against TB to complement government efforts, as per the district-specific requirements in coordination with the district administration.

### Objectives of the Initiative:

- Provide additional patient support to improve treatment outcomes of TB patients
- Augment community involvement in meeting India's commitment to end TB by 2025
- Leverage Corporate Social Responsibility (CSR) activities.



### Stakeholders for the Initiative:

- TB Patient • Community • Ni-kshay Mitra - Co-operative / Corporate / Elected Representative / Individual / Institution / NGO / Political Party / Partner • State & District Administration • Central TB Division, MoHFW, Gol

### Expected Output of The Initiative:

- This initiative will increase the active involvement of society in the fight against tuberculosis.
- This activity aims at increasing awareness among the public regarding tuberculosis.
- Involvement of the community in supporting the treatment cascade shall also help in the reduction of stigma.
- Provision of additional support to the TB patient shall also result in the reduction of the out-of-pocket expenditure for the family of the TB patient.
- Ultimately improved nutrition for the TB patient shall result in better treatment outcomes.

### THE HINDU

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#### Ban on Rice export

- The Centre has banned the export of broken rice, mostly used as animal

feed and as a component for ethanol production, in view of the domestic demand and the production scenario of rice.

- India exports broken rice mainly to China, Senegal, Vietnam, Djibouti, and Indonesia. It exported about 21.31 lakh tonnes of broken rice in the past five months.
- The move would ensure adequate availability of broken rice for the domestic poultry industry and for other animal feedstock and for producing ethanol under the ethanol blending programme.
- The country was likely to witness a shortfall of about 6% in area and production of paddy during the ongoing kharif season.
- “The final area for kharif in 2021 was 403.58 lakh hectares.
- So far, an area of 325.39 lakh hectares has been covered.
- In domestic production, 60 to 70 lakh tonnes estimated production loss is anticipated but due to good monsoon rain in some pockets, the production loss may reduce to 40 to 50 tonnes.
- However, this would be at par with last year’s production,”
- “There has been a rise in global demand for broken rice due to geopolitical scenario which has

impacted price movement of commodities.

- The export of broken rice has increased by 43 times in the past four years.

## **THE HINDU**

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### **Commonwealth**

- The Commonwealth of Nations is an association of independent sovereign states, most of which are former colonies of the United Kingdom.
- The British Monarch remains the head of the Commonwealth.
- Hence, the Queen of the United Kingdom, Elizabeth II is given the title of Head of the Commonwealth. This title doesn't hold any political power over its member countries.
- The Commonwealth is primarily an organization in which countries with diverse economic backgrounds have an opportunity for close and equal interaction.
- The primary activities of the Commonwealth are designed to create an atmosphere of economic cooperation between member nations, as well as the promotion of democracy and good governance in them.
- The Commonwealth is not a political union of any sort and does not allow the United Kingdom to exercise any power over the affairs of the organization's other members.
- While some nations of the Commonwealth, known as Commonwealth Realms, recognize the British Monarch as their head of state (and thus in theory still have some limited political ties to London), the majority do not.
- Membership is normally open to countries that accept the association's basic aims. Members are required to have a present or past constitutional link to the United Kingdom or another Commonwealth member.
- There are 54 countries in the Commonwealth, in Africa, Asia, the Americas, Europe, and the Pacific. Commonwealth countries are diverse they are amongst the world's biggest, smallest, richest, and poorest countries.
- 32 of the members are classified as small states. Small states are especially vulnerable to things like climate change or developmental challenges.
- Every 2 years, the member countries meet to discuss issues affecting the Commonwealth and the wider world at the Commonwealth Heads of Government Meeting (CHOGM).

- All members have an equal say regardless of size or wealth. This makes sure even the smallest countries have a voice in shaping the Commonwealth.
- The Head of the Commonwealth is currently Queen Elizabeth II; the 2018 Commonwealth Heads of Government Meeting appointed Charles, Prince of Wales to be her designated successor, although the position is not hereditary.
- The Queen is the head of state of 16 member states, known as the Commonwealth realms, while 33 other members are republics and 5 others have different monarchs.

#### **THE HINDU**

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### **Flood in Bangalore**

- Lakes and their catchment areas were soon transformed into private lands.
- Builders backfilled these and soon made quick money building apartments, shopping malls, and information-technology parks
- We have achieved some success in rainwater harvesting, solar water heating, segregation of garbage, and the stoppage of littering,
- First, we must execute institutional euthanasia. A multiplicity of

institutions does not improve execution.

- They are deliberately constructed to get in each other's way, complicate governance and preserve opportunities that benefit corrupt politicians, bureaucrats, and land exploiters.
- Outdated institutions need to be replaced by a constitutionally compliant structure, with local governments at the top.
- Second, our community needs to steel itself for some tough decisions. Climate resilience goes beyond flood control; it needs to minimise the damaging environmental impact of cities.
- We must take hard decisions on transportation, curb car travel and improve cheap public transport with more buses instead of waiting for the expensive metro.

#### **THE HINDU**

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## Rabies

- Rabies is a disease that is caused by a family of viruses called the lyssaviruses and found in a range of mammals.
- The virus targets the central nervous system and is nearly 100% fatal to the host animal if it succeeds in infecting it.
- Though many animals from cats to crocodiles can be transmitters of the virus, it is most likely to spread to people from the bite of an infected dog or a cat as they are the most common pets.
- Despite being potentially lethal, the virus is slow-moving.
- who have been exposed via a bite to an animal suspected to be infected.
- The vaccines are administered either into the muscles, or into the skin.
- It can also be given ahead of time to persons who have a high risk of being infected, such as veterinarians, animal handlers, areas with a high number of rabies infection, by what is called Pre Exposure Prophylaxis (PrEP).
- The advantage of a PrEP is that if bitten, one doesn't need a immunoglobulin injection, and two subsequent shots of the vaccine will suffice for full protection.

### How is the vaccine made?

- The vaccine is made up of an inactivated virus that is expected to induce the body into producing antibodies that can neutralise the live virus in case of infection.
- There are also test vaccines that involve genetically modified viruses.
- There is no single-shot rabies vaccine or one that offers permanent immunity.
- There are mainly two ways of administering the rabies vaccine.
- One, called post-exposure prophylaxis (PEP), is given to persons
- **Nasal vaccine**
- Bharat Biotech's nasal vaccine for primary immunisation against COVID-19 in the 18-plus age group for restricted use in an emergency situation.
- It is hoped that Bharat Biotech's ChAd36-SARS-CoV-S recombinant vaccine, to be administered nasally and developed in association with the University of Washington, will prove a powerful tool in the battle against the virus by preventing infections, something the other vaccines have not been able to do.

THE HINDU

### **What does the vaccine do?**

- A nasal vaccine is delivered through the nose or mouth and it is expected to work on the mucosal lining, prompting an immune response at the entry points of the virus in the human body.
- The reason for that is that they are injected into the muscle.
- “Intramuscular shots prompt an immune response that includes T cells, which destroy infected cells, and B cells, which produce antibodies that ‘neutralise’ pathogens binding to them to stop them entering healthy cells. These cells and antibodies circulate through the bloodstream.
- But they aren’t present at high enough levels in the nose and lungs to provide rapid protection.
- Bharat [Biotech] and CanSino [Chinese vaccine maker that has secured a licence to use another nasal vaccine] won’t know whether their vaccines can achieve this until they have conducted further efficacy studies,”.

### **THE HINDU**

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#### **Kushiyara agreement**

### **The story so far:**

- During Bangladesh Prime Minister Sheikh Hasina’s visit to India from September 5 to 8, the two sides signed a slew of agreements, including the first water sharing agreement since the landmark Ganga Waters Treaty, 1996.
- A memorandum of understanding (MoU) was signed on sharing of the waters of the Kushiyara river, a distributary of the Barak river which flows through Assam, and then on to Bangladesh.

### **What is the Kushiyara agreement?**

- Over the last century, the flow of the Barak river has changed in such a way that the bulk of the river’s water flows into Kushiyara while the rest goes into Surma.
- According to water expert, Dr. Ainun Nishat, the agreement is aimed at addressing part of the problem that the changing nature of the river has posed before Bangladesh as it unleashes floods during the monsoon and goes dry during the winter when demand of water goes up because of a crop cycle in Sylhet.
- Under this MoU, Bangladesh will be able to withdraw 153 cusecs (cubic feet per second) of water from the Kushiyara out of the approximately

2,500 cusecs of water that is there in the river during the winter season

- Boro rice cultivation in the region had been suffering as India did not allow it to withdraw the required water from the Kushiya.

### **How will Bangladesh use the water?**

- The water of Kushiya will be channelled through the Rahimpur Canal project in Sylhet.
- The Rahimpur Canal project in Zakiganj upazila or subdivision of Sylhet was built to help the farmers access Kushiya's water but the facility used to remain dry during the lean season without serving the purpose for which it was built.
- The eight km long canal is the only supplier of water from the Kushiya to the region and Bangladesh has built a pump house and other facilities for withdrawal of water that can now be utilised.

### **Why is the water from the Kushiya so important for Rahimpur Canal?**

- The water of the Kushiya has been used for centuries in Sylhet's subdivisions like the Zakiganj, Kanaighat and Beanibazar areas. But Bangladesh has witnessed that the flow and volume of water in the

canal has reduced during the lean season.

- The utility of the river and the canal of rice as well as a wide variety of vegetables for which Sylhet is famous.
- The additional water of Kushiya through the Rahimpur Canal therefore is the only way to ensure steady supply of water for irrigation of agriculture fields and orchards of the subdivisions of Sylhet.

### **What was India's objection to the Rahimpur Canal?**

- Bangladesh had carried out the Upper Surma Kushiya Project which included clearing and dredging of the canal and other connected channels of water; but the channels could not be of much use to Bangladesh because India objected to the move and claimed that the dyke and other infrastructure interfered in border security as Kushiya itself forms part of the border between the two sides.

## **THE HINDU**

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### **Wildfire and ozone damage**

- Ozone layer damage Smoke from Australia's extreme wildfires between December 2019 and



February 2020 increased atmospheric temperatures and probably made the hole in the ozone layer bigger.

- The plumes of smoke that rose into the atmosphere caused temperatures to spike by 3°C over Australia.

## THE HINDU

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### Lysine butyrylation

- Our genetic material DNA is wrapped around protein balls called histones to form the highly organised genome.
- Different chemical modifications of both DNA and histones can dictate the fate of genes in terms of them being switched on or remaining switched off.
- This on/off balance of gene expression is critical for health and disease.
- Chemical modification of histone lysine butyrylation is critical for fat cell development that underlies obesity manifestation
- We could finally demonstrate that a semi-synthetic derivative of garcinol, a molecule naturally found in *Garcinia indica* (kokum) fruit rind, could selectively reduce the levels of this modification by inhibiting the

catalytic activity of the enzyme responsible for it the master epigenetic enzyme p300.

## THE HINDU

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### Cloudburst- formation, Clausius Clapeyron relationship

- Cloudbursts violent and voluminous amounts of rain pouring down in a short duration over a small area
- Clouds blanket 70% of the Earth's surface at any given time. They are like a thin layer of the floating ocean, with enough water to cover the entire surface of Earth with about one inch of rain.
- Cloudburst events are often associated with cumulonimbus clouds that cause thunderstorms and occasionally due to monsoon wind surges and other weather phenomena.
- Cumulonimbus clouds can grow up to 12-15 km in height through the entire troposphere (occasionally up to 21 km) and can hold huge amounts of water.

### Characteristics

- However, cloudbursts are not defined based on cloud characteristics and do not indicate clouds exploding.

- Cloudbursts are defined by the amount of rainfall. According to the India Meteorological Department (IMD), 100 mm of rain in an hour is called a cloudburst. Usually, cloudbursts occur over a small geographical region of 20 to 30 sq. km
- In India, cloudbursts often occur during the monsoon season, when the south-westerly monsoon winds bring in copious amounts of moisture inland.
- The moist air that converges over land gets lifted as they encounter the hills.
- The moist air reaches an altitude and gets saturated, and the water starts condensing out of the air forming clouds.
- This is how clouds usually form, but such an orographic lifting together with a strong moisture convergence can lead to intense cumulonimbus clouds taking in huge volumes of moisture that is dumped during cloudbursts.
- Tall cumulonimbus clouds can develop in about half an hour as the moisture updraft happens rapidly, at a pace of 60 to 120 km/hr.
- More prone areas Cloudbursts, hence, occur mostly over the rugged terrains over the Himalayas, the Western Ghats, and north-eastern hill States of India
- Detecting cloudbursts while satellites are extensively useful in detecting large-scale monsoon weather systems, the resolution of the precipitation radars of these satellites can be much smaller than the area of individual cloudburst events, and hence they go undetected.
- The skillful forecasting of rainfall in hilly regions remains challenging due to the uncertainties in the interaction between the moisture convergence and the hilly terrain, the cloud microphysics, and the heating cooling mechanisms at different atmospheric level.
- Multiple Doppler weather radars can be used to monitor moving cloud droplets and help to provide now casts (forecasts for the next three hours).
- This can be a quick measure for providing warnings, but radars are an expensive affair, and installing them across the country may not be practically feasible.
- A long-term measure would be mapping the cloudburst-prone regions using automatic rain gauges.
- If cloudburst-prone regions are co-located with landslide-prone

regions, these locations can be designated as hazardous.

- The risk at these locations would be huge, and people should be moved, and construction and mining in nearby regions should be restricted as that can aggravate the landslides and flash flood impacts.
- Climate change is projected to increase the frequency and intensity of cloudbursts worldwide. As the air gets warmer, it can hold more moisture and for a longer time.
- We call this the Clausius Clapeyron relationship.
- A 1-degree Celsius rise in temperature may correspond to a 7-10% increase in moisture and rainfall.
- This increase in rainfall amount does not get spread moderately throughout the season.
- As the moisture holding capacity of air increases, it results in prolonged dry periods intermittent with short spells of extreme rains.

**THE HINDU**

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## **Indira Gandhi Urban Employment Guarantee Scheme**

- The story so far: The Indira Gandhi Urban Employment Guarantee Scheme has rolled out in Rajasthan with the objective of providing economic support to the poor and needy families living in the cities through work to be provided on demand for 100 days in a year.

### **Who are eligible to get jobs?**

- Those in the age group of 18 to 60 years residing within the limits of urban local bodies are eligible to demand and get employment in the identified segments.
- There is no income limit, though the poor and destitute people, especially those who lost their livelihood during the pandemic, will be given preference.

### **What are the categories of tasks?**

- The tasks to be carried out under the scheme have been clubbed mainly under eight heads.
- The first is environment protection, which will involve tree plantation at public places, maintenance of parks and watering plants on footpaths and dividers.

- The next is water conservation, where the tasks may be allotted for cleanliness and improvement of ponds, lakes and stepwells, construction, repair and cleaning of rain water harvesting structures and restoration of water sources.
- Other categories are heritage conservation, removal of encroachments and illegal boards, hoardings and banners, stopping defacement of property and service-related works.
- As part of convergence, the people engaged under the employment guarantee scheme can be employed elsewhere in other schemes, already having a material component, which require the labour.
- Eligible people will get work such as tree plantation, cleaning ponds, collecting garbage from door to door and segregating it and catching stray animal.
- Several States are looking favourably towards an urban version of MGNREGA.
- These schemes include the Ayyankali Urban Employment Guarantee Scheme in Kerala, Urban Wage Employment Initiative under UNNATI in Odisha, Mukhya Mantri Shramik Yojana in Jharkhand and Mukhya Mantri Yuva Swabhiman Yojana in Madhya Pradesh.

## Child Adoption

- The story so far: From September 1, District Magistrates (DM) have been empowered to give adoption orders instead of courts. All cases pending before courts have to be now transferred.

### What do the amended rules say?

- How did they come about? The Parliament passed the Juvenile Justice (Care and Protection of Children) Amendment Bill, 2021 in July last year in order to amend the Juvenile Justice Act (JJ Act), 2015.
- The key changes include authorising District Magistrates and Additional District Magistrates to issue adoption orders under Section 61 of the JJ Act by striking out the word court. This was done “in order to ensure speedy disposal of cases and enhance accountability,” according to a government statement.
- The District Magistrates have also been empowered under the Act to inspect child care institutions as well as evaluate the functioning of district child protection units, child welfare committees, juvenile justice boards, specialised juvenile police units, child care institutions etc. d “court”.
- This was done “in order to ensure speedy disposal of cases and

enhance accountability,” according to a government statement.

- The District Magistrates have also been empowered under the Act to inspect child care institutions as well as evaluate the functioning of district child protection units, child welfare committees, juvenile justice boards, specialised juvenile police units, child care institutions etc.
- The amendments to the Juvenile Justice (Care and Protection of Children) Model Rules, 2016 say, “all the cases pertaining to adoption matters pending before the Court shall stand transferred to the District Magistrate from the date of commencement of these rules.”
- The revised rules have parents, activists, lawyers, and adoption agencies worried as cases already before courts for the past several months will have to be transferred and the process will have to start afresh.
- The Central Adoption Resource Authority says there are nearly 1,000 adoption cases pending before various courts in the country.

### What is the adoption procedure in India? What are the challenges?

- Adoptions in India are governed by two laws the Hindu Adoption and Maintenance Act, 1956 (HAMA) and

the Juvenile Justice Act, 2015. Both laws have their separate eligibility criteria for adoptive parents.

- Those applying under the JJ Act have to register on CARA's portal after which a specialised adoption agency carries out a home study report.
- After it finds the candidate eligible for adoption, a child declared legally free for adoption home referred to the applicant.
- Under HAMA, a "dattaka hom" ceremony or an adoption deed or a court order is sufficient to obtain irrevocable adoption rights.
- But there are no rules for monitoring adoptions and verifying sourcing of children and determining whether parents are fit to adopt.
- There are many problems with the adoption system under CARA but at the heart of it is the fact that there are very few children in its registry.

## **THE HINDU**

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### **Crisis of Apple farmer**

- Laws in the State restrict the transfer of land in favour of a person who is not an agriculturist of Himachal Pradesh.
- In the late 1980s and early 1990s, peasant movements were successful in raising the support prices for apple.

- However, in the 1990s, with rising fragmentation of land, low productivity and withdrawal of state support, agriculture became unsustainable.
- The cost of production of agricultural items increased substantially, denying remunerative prices to the poor and marginal growers.

### **Reasons for crisis**

- There are two major reasons for the current crisis.
- The first is the increasing cost of production.
- The input cost of fertilizers, insecticides, and fungicides has risen in the last decade by 300%, as per some estimates.
- The cost of apple cartons and trays and packaging has also seen a dramatic rise.
- The second and immediate trigger for the agitation was the increase in the Goods and Services Tax on cartons from 12% to 18%.
- This was done to ensure that farmers are forced to sell their produce to big buyers instead of selling it in the open market.
- Large players do not buy apples in cartons; they procure them in plastic trays and decide the rate on the basis of kilogramme.



- By doing this, they argue that the cost of packaging gets reduced. It is true that it does in the open market, the price is decided on the basis of an apple carton.
- In this manner, the big players induce the apple farmers to sell the produce to them.
- But there is a catch. Unlike in the open market, where apples of all varieties/grades are procured, the large players only procure apples of high quality.
- What is required is an independent body that is duly supported and trusted by the farmers.
- Such a body should have representatives of apple growers, market players, commission agents and the government.
- This must be a statutory body that is also given the task of conducting research in the apple economy.
- The big growers have also started to shift from the conventional varieties to more genetically modified varieties called the spur, most of which are imported from European nations.

## **THE HINDU**

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## **India and Bangladesh**

- Four specific issues seem to trouble the Bangladeshi side.
- First, the continued presence of 1.1 million Rohingyas who fled from Myanmar in 2017 has created enormous pressure on the economy and social harmony. Ms. Hasina has said India is a big country that should “accommodate” them.
- Further, she wants stronger support from India to facilitate their early return to Myanmar.
- Second, the absence of agreement on sharing of the Teesta waters, pending since 2011 due to West Bengal’s refusal to relent, and the broader issue of joint management of 54 common rivers, have been constant grievances.
- Third, India’s sensitivity to growing cooperation between Dhaka and Beijing rankles the authorities in Bangladesh.
- Ms. Hasina has stressed the point that if there were differences between India and China, she did not wish to “put her nose to it”.
- Four, she has conceded that despite her government’s secular policy, “incidents” against the Hindu minority have occurred, but her government has acted against miscreants.

### **Specific outcomes**

- First, there was the agreement “to continue close security cooperation” over counter-terrorism, border crimes, and border management.
- Second, the two sides recommitted themselves to enhancing their development partnership which is already quite extensive and multi-faceted.
- Third, they agreed “to build resilient supply chains” between the two countries and “across the region”.
- A significant decision was to launch the Comprehensive Economic Partnership Agreement (CEPA) in 2022 and to conclude negotiations by the time Bangladesh graduates from least developed country status in 2026.
- Finally, the leaders favoured expanding connectivity through more rail, road, inland waterways, and coastal shipping linkages.
- They agreed to build on the impressive successes achieved in the past decade in this sphere.
- Bilateral trade has touched a high watermark of \$18 billion.
- Logistics for power trade between Bangladesh and its neighbours India, Nepal, and Bhutan have been put in place.
- India will assist Bangladesh by sharing its rich experience of innovation through start-ups’
- The two governments agreed on the sharing of the waters of the Kushiyara, the common border river.
- They also agreed to exchange data on other rivers, set up their priorities and begin formulating the framework for “the interim water sharing arrangements”.

### **THE HINDU**

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## Increase in Coal based power plant

- India may need up to 28 gigawatts of new coal-fired power plants by 2032 to meet power demand that is expected to more than double from the current 404.1 GW
- “It is seen that apart from under-construction coal based capacity of 25 GW, the additional coal-based capacity required till 2031-32 may vary from 17 GW to around 28 GW.
- India’s annual electricity demand could grow by an average of 7.2% over the five years to March 2027, almost double the rate of increase in the fiscal years from 2017 to 2022, the plan said.
- The share of coal in India’s total power generation, however, is likely to fall below 60% by 2027, with India targeting the addition of 500 GW in non-fossil based installed capacity by 2030.
- Although India is a major greenhouse gas producer, its per capita power demand and emissions are much lower than most developed countries, while it accounts for the lion’s share of the world’s additional renewable energy output, along with China.

- A draft electricity policy report issued last year indicated India may build new coal-fired plants due to their lower cost, although it gave no estimates of how much capacity might be built.

### THE HINDU

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#### IAEA

- The IAEA is the world's centre for cooperation in the nuclear field. It was set up as the world's "Atoms for Peace" organization in 1957 within the United Nations family.
- The Agency works with its Member States and multiple partners worldwide to promote, the safe, secure and peaceful use of nuclear technologies.
- The IAEA Secretariat is headquartered at the Vienna International Centre in Vienna, Austria.
- The Agency shall seek to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world.
- It shall ensure, so far as it is able, that assistance provided by it or at its request or under its supervision or control is not used in such a way as to further any military purpose.

- The IAEA's mission is guided by the interests and needs of Member States, strategic plans and the vision embodied in the IAEA Statute.
  - Three main areas of work underpin the IAEA's mission: Safety and Security, Science and Technology, and Safeguards and Verification.
  - Relationship with the United Nations
  - As an independent international organization related to the United Nations (UN) system, the IAEA's relationship with the UN is regulated by a special agreement.
  - In terms of its Statute, the IAEA reports annually to the UN General Assembly and, when appropriate, to the UN Security Council regarding States' non-compliance with safeguards obligations, as well as on matters relating to international peace and security.
- to the dairy industry, academicians, government representatives, etc.
- The summit is composed of a series of scientific and technical conferences and social events including a Welcome Reception, Farmers' Dinner, Gala Dinner as well as Technical and Social Tours.
  - The IDF World Dairy Summit will provide a forum to industry experts to share knowledge and ideas on how the sector can contribute to nourish the world with safe and sustainable dairying.
  - Participants will get an opportunity to acquire knowledge on latest research findings and experiences relevant to the global dairy sector in the broadest sense.

## **THE HINDU**

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### **World dairy summit**

- The IDF World Dairy Summit is an annual meeting of the global dairy sector, bringing together approximately 1500 participants from all over the world.
  - The participant profile includes CEOs and employees of dairy processing companies, dairy farmers, suppliers
- to the dairy industry, academicians, government representatives, etc.
- IDF is the leading source of scientific and technical expertise for all stakeholders of the dairy chain. Since 1903, IDF's network of dairy experts has provided a mechanism for the dairy sector to reach global consensus on how to help feed the world with safe and sustainable dairy products.
  - A recognised international authority in the development of science-based

## **THE HINDU**

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### **International Dairy Federation**

standards for the dairy sector, IDF has an important role to play in ensuring the right policies, standards, practices and regulations are in place to ensure the world's dairy products are safe and sustainable.

- With over 1,200 highly qualified dairy experts in 43 member countries around the world, IDF represents 75% of global milk production and provides a permanent source of authoritative scientific and technical information relevant to the dairy sector.

## **THE HINDU**

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### **Indian Dairy Sector**

- India is self-sufficient in milk and the world's top milk producer as well as consumer.
- India's dairy sector is unique in many aspects. It has a unique smallholder milk production system, wherein more than 70 percent of dairy farmers own either 1 or 2 animals.
- Dairying in India is more about livelihoods to about 80 million rural households than simply a business.
- It provides a stable cash flow as compared to crop cultivation.
- There is a large network of dairy institutions, providing market access to the dairy farmers. Around 60-70 percent of consumer rupee flows back to producers, which is highest in the world.
- Milk is India's single largest agricultural commodity in terms of value amounting to approximately USD 118 billion.

### **Indian Dairy Sector**

- India is home to about 19 percent of in-milk cattle and 63 percent of in-milk buffaloes in the world.
- It has a very rich reservoir of genetic diversity and possesses some of the best breeds of cattle and buffaloes in the world.
- 50 well-defined breeds of cattle and 19 of buffaloes are well adapted to the local environment.
- Milk and milk products are important constituents of Indian food basket.
- Due to a number of factors like growing population, rising income and increasing urbanization, the demand for milk and milk products is steadily growing.
- India's efforts are aimed at meeting this increasing demand to continue to maintain self-sufficiency and nutritional security in a sustainable way socially, economically and environmentally.

## THE HINDU

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### 13th Amendment of SL

- India on Monday voiced concern over the “lack of measurable progress” in Sri Lanka’s promised political solution to the long-pending Tamil national question, while making an unusual reference to the crisis-hit island nation’s “debt-driven” economy in the context of its current crisis.
- It is an outcome of the Indo-Lanka Accord of July 1987, signed by the then Prime Minister Rajiv Gandhi and President J.R. Jayawardene, in an attempt to resolve Sri Lanka’s ethnic conflict that had aggravated into a full-fledged civil war, between the armed forces and the Liberation Tigers of Tamil Eelam, which led the struggle for Tamils’ self-determination and sought a separate state.
- The 13th Amendment, which led to the creation of Provincial Councils, assured a power sharing arrangement to enable all nine provinces in the country, including Sinhala majority areas, to self-govern.
- Subjects such as education, health, agriculture, housing, land and police are devolved to the provincial administrations, but because of restrictions on financial powers and overriding powers given to the President, the provincial administrations have not made much headway.
- In particular, the provisions relating to police and land have never been implemented.
- Initially, the north and eastern provinces were merged and had a North-Eastern Provincial Council, but the two were de-merged in 2007 following a Supreme Court verdict.
- Why is it contentious?
- The 13th Amendment carries considerable baggage from the country’s civil war years.
- It was opposed vociferously by both Sinhala nationalist parties and the LTTE.
- The former thought it was too much power to share, while the Tigers deemed it too little.

## THE HINDU

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### India as chairperson of G20

- In November, the 17th G20 Heads of State and Government Summit will take place in Bali. After Indonesia, India will assume the presidency of the G20 from December 1, 2022 to November 30, 2023.



- It is slated to host several ministerial meetings, working groups, and events before the G20 Head of State summit next year.
- By hosting the summit of the G20, the world's most influential economic multilateral forum, India will have the opportunity to assume centre stage in proposing and setting the global agenda and discourse.
- The G20 holds a strategic role in securing global economic growth and prosperity.
- Together, its members represent more than 80% of the world's GDP, 75% of international trade and 60% of the world's population.
- It will arguably be the most high-profile event ever hosted by India.
- The country's leadership potential and diplomatic foresight in organising such a big-ticket event and in arriving at meaningful outcomes will be tested.
- In a world affected by the pandemic and the Ukraine conflict, the rise of an assertive China, economic challenges such as stagflation, terrorism, and climate change, to name a few, it needs to be seen what role India can play under its watch as President of the G20.
- To begin with, India can take cues from Indonesia's presidency and observe how it is managing the group which is deeply divided on various issues.
- Indonesia has focused on three key pillars: global health architecture, sustainable energy transition, and digital transformation.
- This template could be useful for India in forging a comprehensive agenda.
- India can assert its political, economic and intellectual leadership while hosting the G20 presidency
- But it will have to perform a delicate balancing act. On the one hand, we have the West, the North Atlantic Treaty Organization, and G7 partner nations setting the agenda.
- And on the other, we have an emerging nexus between China and Russia, which are taking divergent views from the first group.
- India might be caught in the middle as it is part of both the Quad and the SCO which somewhat lie on the opposing sides of the geopolitical spectrum.
- India can find a common ground for setting its G20 agenda by addressing issues of global concern.
- Simultaneously, it needs to promote its specific priorities related to domestic and regional issues such as economic recovery, trade and investment, unemployment, patent waivers on diagnostics, therapeutics,

vaccines to tackle COVID-19 and terrorism.

- More specifically, India could forge greater cooperation with many G20 members such as the European Union, the U.K., and Canada, thereby accelerating their coordination on realising free trade agreements.
  - The overarching issues could be related to charting a road map for quick global economic recovery, focusing on the supply chain resilience mechanism and stressing on green and digital transformations in the economy and its impact on societal well-being.
  - This would ensure a sustainable and inclusive growth for the global economy. G20 is a unique global institution, where developed and developing countries have equal stature.
  - It offers India an opportunity to also champion the causes of developing and least developed countries so as to ensure that this summit does not turn out to be a western-dominated high table gathering or one where large economies impose their aspirations on the world.
  - India could invite and engage countries from Africa and South America to ensure better and more balanced representation at the G20.
- Areas such as technology transfer, assistance towards green economy, greater access to trade for developing countries, addressing debt distress of countries by offering sustainable aid and loan programmes, tackling food and energy prices/security for vulnerable economies etc. could be relevant.

### **THE HINDU**

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## Windfall tax

- The story so far: Finance Minister Nirmala Sitharaman on September 2, defended the windfall tax imposed by the Centre on domestic crude oil producers, saying that it was not an ad hoc move but was done after full consultation with the industry.

### What is a windfall tax?

- Windfall taxes are designed to tax the profits a company derives from an external, sometimes unprecedented event for instance, the energy price-rise as a result of the Russia-Ukraine conflict
- There have been varying rationales for governments worldwide to introduce windfall taxes, from redistribution of unexpected gains when high prices benefit producers at the expense of consumers, to funding social welfare schemes, and as a supplementary revenue stream for the government.

### Why are countries levying windfall taxes now?

- Prices of oil, gas, and coal have seen sharp increases since last year and in the first two quarters of the current year, although they have reduced recently.

- Pandemic recovery and supply issues resulting from the Russia-Ukraine conflict shored up energy demands, which in turn have driven up global prices.
- The rising prices meant huge and record profits for energy companies while resulting in hefty gas and electricity bills for households in major and smaller economies.

### What are the issues with imposing such taxes?

- Analysts say that companies are confident in investing in a sector if there is certainty and stability in a tax regime.
- Since windfall taxes are imposed retrospectively and are often influenced by unexpected events, they can brew uncertainty in the market about future taxes.
- “Introducing a temporary windfall profit tax reduces future investment because prospective investors will internalise the likelihood of potential taxes when making investment decisions”.

## THE HINDU

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### Fall in rubber prices

- The story so far: After a moderate post-pandemic revival, the price of

natural rubber (NR) has crashed to a 16-month low of ₹150 per kg (RSS grade 4) in the Indian market.

### **What has caused the sharp fall in prices?**

- The current fall in prices is attributed primarily to a weak Chinese demand and the European energy crisis, along with high inflation and an import glut, among other things.
- While the unremitting zero COVID strategy in China, which consumes about 42% of the global volume, has cost the industry dearly, analysts have also flagged the acceleration of imports.
- The domestic tyre industry, according to them, is sitting pretty on an ample inventory, especially in the form of block rubber from the Ivory Coast and compounded rubber from the Far East.
- Where does India stand in terms of the production and consumption of natural rubber?
- India is currently the world's fifth largest producer of natural rubber while it also remains the second biggest consumer of the material globally.

### **How does the falling price affect the growers?**

- The turnaround has exposed the growers mostly small and medium scale to a painful reckoning, contributing to wide-spread panic in Kerala, which accounts for nearly 75% of the total production.
- The precipitous plunge in prices coupled with high costs have also left them staring at an uncertain future, forcing some to stop production for the time being.
- The impact of the price fall is felt more in the rural areas, where most people are solely dependent on rubber cultivation and have no other option but to cut expenses.
- This has caused a sluggishness in the respective local economies, which also coincided with the festive season in Kerala.

### **What do the farmers demand?**

- The key demands they have raised to the Union government include raising the import duties on latex products and compound rubber to make it on par with natural rubber, by either 25% or ₹30 per kg, whichever is lower. Its demands to the state government are to raise the replanting subsidy in Kerala.

### **THE HINDU**

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## Draft Indian port bills 2022

- What is the current legal framework for ports in India?
- Approximately 95 per cent of India's trade by volume and 68 per cent by value are moved through maritime transport facilitated by 212 ports (12 major and 200 minor ports) along its 7,517 km coastline.
- While the major ports are under the administrative control of Ministry of Shipping, the non-major ports are under the jurisdiction of respective State Maritime Boards/ State Government.
- The major ports are governed under the Major Port Trusts act, 1963. All the non-major Ports (minor ports) are governed under the Indian Ports Act, 1908 which regulates the berths, stations, anchoring, fastening, mooring, and unmooring of vessels.
- The draft IP Bill 2022 seeks to repeal and replace the 114-year-old Indian Ports Act of 1908.

### What are the key objectives of the draft bill?

- promote integrated planning between States inter-se and Centre-States through a purely consultative and recommendatory framework;

- ensure prevention of pollution measures for all ports in India while incorporating India's obligations under international treaties;
- address lacunae in the dispute resolution framework required for burgeoning ports sector and
- Usher-in transparency and cooperation in the development and other aspects through the use of data.

### What are the key international obligations addressed under the bill?

- The new Bill incorporates a number of international instruments to which India is a party, in the national legislation namely, International Ship and Port Facility Security (ISPS) Code 2004, International Convention for the prevention of pollution from ships (MARPOL) 1973 and International Convention for the Control and Management of Ships Ballast Water and Sediments (Ballast Water Management Convention) 2004.
- The ISPS code is important for the safety of ships, ports, seafarers and government agencies and prescribes responsibilities to various stakeholders to "detect security threats and take preventive measures against security incidents

affecting ships or port facilities used in international trade."

- MARPOL is the main international convention covering prevention of pollution of the marine environment by ships from operational or accidental causes.
- The Ballast Water Management Convention or BWM Convention aims at preventing the spread of potentially harmful aquatic organisms and pathogens in ships' ballast water when it is released into port premises or adjacent environment.

#### **What are the key features of the bill?**

- Establish a national council for fostering structured growth and development of the port sector, and ensure optimum utilisation of the coastline of India
- Empower and establish State Maritime Boards for effective administration, control and management of non-major ports in India; provide for adjudicatory mechanisms for redressal of port related disputes and,
- Prevention and containment of pollution at ports, and take measures for conservation of ports.

#### **What is the National Council referred to in the draft bill?**

- Chapter II of the draft bill seeks to establish a Maritime State Development Council (MSDC) to be chaired by the Union minister for ports, shipping, and waterways and Ministers in charge of ports in the Maritime States and UT of Puducherry as the members. Such a Council has been in existence for many years and the draft bill gives a legal backing to the council.
- The draft bill proposes to make this Council a permanent body with powers to formulate a national plan as a recommendatory framework for realizing the full potential of major and non-major ports in the country and assess the progress of such plan and revise such plan from time to time.

#### **What is the role of State Maritime Board envisaged in the draft?**

- The bill also requires every State Government to establish a State Maritime Board for all the non-major ports within the State.
- The Maritime Board is required to perform a host of functions, namely, initiating plans for development of non-major ports in the State; framing and amending port tariff; developing new non-major ports in



the State and adjudicating port-related disputes in accordance with this Act.

### **Why is the proposed adjudicatory mechanism controversial?**

- The draft to amend the 1908 act creates a new mechanism for resolution of disputes.
- The bill has proposed to make the Adjudicatory Board constituted under section 54 of the Major Port Authorities Act, 2021 (that governs 11 of the 12 ports owned by the Centre) perform the role of an Appellate Tribunal for settling disputes.

## **THE HINDU**

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### **Indian patent system**

- Long pendency of processing patent applications in India.
- Therefore, it has recommended several measures to reduce this.
- Increasing the efficiency of processing patent applications will certainly improve the patent ecosystem in the country.
- Section 9(1) of the Patents Act provides that those applications accompanied by provisional specifications be supported by

complete specifications within one year.

- Section 21(1) requires patent applicants to re-file documents if the patent examiner finds them not meeting the requirements.
- A plausible reason could be that the applicants are not confident about their applications passing scrutiny and, therefore, do not pursue their applications.
- The higher education sector of India is rising in prominence in the research and development spending and patenting landscape of India.
- The share of this sector in the gross domestic expenditure on R&D (GERD) has increased from 5% in 2013 to 7% in 2018, as UNESCO's data on science, technology and innovation shows.
- The number of patent applications filed by the top 10 academic institutes and universities in India (in terms of the number of patent applications) rose by more than two times in four years, from 838 in 2015-16 to 2,533 in 2019-20.
- Their share in the patent applications by residents also doubled from 6.4% to 12.2% during the same period.
- The growing prominence of this sector in patenting activity indicates the priority it attaches to

commercially significant technological innovations.

- When the higher education sector is increasingly focusing on the development component of R&D, it is also expected that the collaboration between industry and academia will also increase in the area of R&D.
- As the patent system is a critical aspect of the national innovation ecosystem, investing in the patent ecosystem will help in strengthening the innovation capability of India.

#### **From no alignment to All alignment**

- Indian foreign policy that balances various blocs pitting India's membership of the SCO and BRICS (Brazil, Russia, India, China and South Africa) against its membership of the Quad (Australia, India, Japan, the U.S.), groups such as the I2U2 (India-Israel-U.S.-UAE), and the Indo-Pacific Economic Framework (IPEF).
- This was highlighted more recently with India joining the Russian-led 'Vostok' Army Exercises along with China, and plans to host SCO-RATS (or the Regional Anti-Terrorist Structure of the Shanghai Cooperation Organization) counterterror exercises while the Indian Air Force took part in the Australian 'Pitch Black' exercises,

and the Indian Army is planning exercises with the U.S.

- (Yudh Abhyas) next month close to the Line of Actual Control (LAC).
- In a Venn diagram, India is the only country that would form the intersection, a part of all of those groupings.
- It is worth noting that the SCO membership is not premised on India's traditional non-aligned posture.
- While Mr. Modi has skipped all the Non Aligned Movement summits in his tenure (the only Indian Prime Minister to do so, apart from caretaker Prime Minister Charan Singh in 1979), he chose to lead India into the SCO in 2017.
- Next year, India will host the SCO summit, and is expected to invite all members this including Chinese President Xi Jinping and Pakistan's Prime Minister Shahbaz Sharif showing how far New Delhi will be willing to go in its commitment to the SCO.
- The Government has not only rejected calls to cut its Russian oil imports but it has also done the reverse: imports of Russian oil jumped from 0.66 million tonnes in the first quarter to 8.42 million tonnes in the second this year

- It asserts its right to buy discounted Russian oil in order to stave off inflation for the Indian consumer push back against the American threats of sanctions on the S-400 Triumph missile defence system deal and on oil trade with Russia, has forced the U.S. to blink.

**THE HINDU**

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GES  
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### Shadow libraries

- Shadow or mirror libraries are online databases that duplicate digital records like e-books or academic articles.
- Shadow libraries are online databases of readily available content that is normally obscured or otherwise not readily accessible.
- Such content may be inaccessible for a number of reasons, including the use of paywalls, copyright controls, or other barriers to accessibility placed upon the content by its original owners.
- Shadow libraries usually consist of textual information like in electronic books but may also include other digital media, including software, music, or films.
- Examples of shadow libraries include Library Genesis, Z-Library, and Sci-Hub, which are popular academic shadow libraries.
- What is an Essential Medicines List?
- As per the World Health Organisation (WHO), Essential Medicines are those that satisfy the priority health care needs of the population.
- The list is made with consideration to disease prevalence, efficacy, safety and comparative cost-effectiveness of the medicines. Such medicines are intended to be available in adequate amounts, in appropriate dosage forms and strengths with assured quality.
- They should be available in such a way that an individual or community can afford.
- Drawing an essential medicines list (EML) is expected to result in better quality of medical care, better management of medicines and cost-effective use of health care resources.
- Criteria for inclusion of a medicine in NLEM 2015

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#### National list of essential medicine

- On September 13, the National List of Essential Medicines (NLEM), 2022, was released, with 384 drugs in it across 27 categories. While 34 new drugs are on the list, 26 drugs from NLEM, 2015.

#### The criteria are as follows

- The medicine should be approved/licensed in India.
- The medicine should be useful in disease which is a public health problem in India.
- The medicine should have proven efficacy and safety profile based on valid scientific evidence.

- The medicine should be cost effective.
- The medicine should be aligned with the current treatment guidelines for the disease.
- The medicine should be stable under the storage conditions in India.
- When more than one medicine are available from the same therapeutic class, preferably one prototype/medically best suited medicine of that class to be included after due deliberation and careful evaluation of their relative safety, efficacy, cost-effectiveness.
- The price of total treatment is to be considered and not the unit price of a medicine.
- Fixed Dose Combinations (FDCs) are generally not included unless the combination has unequivocally proven advantage over individual ingredients administered separately, in terms of increasing efficacy, reducing adverse effects and/or improving compliance.
- The listing of medicine in NLEM is based according to the level of health care, i.e. Primary (P), Secondary (S) and Tertiary (T) because the treatment facilities, training, experience and availability of health care personnel differ at these levels.
- Criteria for deletion of a medicine from NLEM 2015
- The medicine has been banned in India.
- There are reports of concerns on the safety profile of a medicine.
- A medicine with better efficacy or favourable safety profiles and better cost-effectiveness is now available.
- The disease burden for which a medicine is indicated is no longer a national health concern in India.
- In case of antimicrobials, if the resistance pattern has rendered a medicine ineffective in Indian context.





## Dolo and ethics

- Recently, a controversy bubbled up regarding the marketing strategies of Micro Labs, a Bengaluru-based pharmaceutical company. Micro Labs, the maker of Dolo-650, was charged of having bribed medical doctors with freebies worth ₹1,000 crore in one year to promote Dolo-650.
- Dolo is an analgesic and antipyretic
- Analgesics are medications that relieve pain
- Antipyretic: Something that reduces fever.
- There's more. Para 1.5 of the Indian Medical Council (Professional Conduct, Etiquette and Ethics) Regulations, 2002 states that every physician should, as far as possible, prescribe drugs with generic names.
- It also states that there is both a rational prescription and use of pharmaceutical drugs.
- This is, of course, rarely done and there is no enforcement.
- This regulation also prohibits the disbursement of gifts.
- The solution is two-fold. First, a move to prescriptions without brand names should be the default practice.
- Doctors will then have no incentive to promote particular brands and

pharmaceutical companies will have no incentive to give freebies to doctors.

- But even if doctors are not able to recommend a certain brand, pharmacists are.
- And their incentive is to recommend brands that give them the highest trade margins, which are based on the maximum retail price (MRP)

## THE HINDU

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### Water crisis

- The UNESCO United Nations World Water Development Report of 2022 has encapsulated global concern over the sharp rise in freshwater withdrawal from streams, lakes, aquifers and human-made reservoirs, impending water stress and also water scarcity being experienced in different parts of the world.

### Growing water stress

- Further, the Water Scarcity Clock, an interactive webtool, shows that over two billion people live in countries now experiencing high water stress; the numbers will continue to increase.
- The Global Drought Risk and Water Stress map (2019) shows that major parts of India, particularly west,

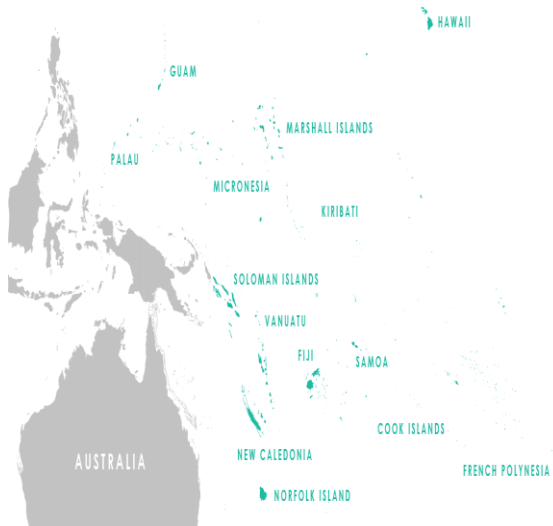


central, and parts of peninsular India are highly water-stressed and experience water scarcity.

- A NITI Aayog report, 'Composite Water Management Index' (2018) has sounded a note of caution about the worst water crisis in the country, with more than 600 million people facing acute water shortages.
- The typical response of the areas where water shortage or scarcity is high includes transfer of water from the hinterlands/upper catchments or drawing it from stored surface water bodies or aquifers.
- This triggers sectoral and regional competition; rural-urban transfer of water is one such issue of global concern.
- Increasing trans-boundary transfer of water between rural and urban areas has been noted in many countries since the early 20th century.
- The urban population accounted for 50% of the total world population by the end of the last century.
- Examining the urban water management trajectory, it is evident that in the initial stages when a city is small, it is concerned only with water supply; in a majority of cases, water is sourced locally, with groundwater meeting the bulk of the supply.
- As the city grows and water management infrastructures develop, dependence shifts to surface water.
- Available studies covering Nagpur and Chennai indicate the imminent problem of rural-urban water disputes that the country is going to face in the not-so-distant future as water scarcity grows, which will be further exacerbated by climate change.
- Institutional strengthening can offer entry points and provide opportunities to build flexibility into water resource allocation at a regional level, enabling adjustments in rapidly urbanizing regions.

### **Urban water use**

- According to Census 2011, the urban population in India accounted for 34% of total population distributed in 7,935 towns of all classes.
- It is estimated that the urban population component in India will cross the 40% mark by 2030 and the 50% mark by 2050 (World Urbanization Prospects, 2018).



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## Tamil Nadu Breakfast scheme

- Tamil Nadu Chief Minister M. K. Stalin, at the Madurai Corporation Primary School Athimoolam II in Simmakal, Madurai, launched the Chief Minister's Breakfast Scheme for students of Class I to V in government schools.
- The scheme covers around 1.14 lakh students in 1,545 schools which include 417 municipal corporation schools, 163 municipality schools and 728 taluk and village panchayat-level schools.
- A sum of ₹33.56 crore has been set apart for the scheme.
- What was the impact of the mid-day meal scheme on school education?
- After the improved version of the mid-day meal scheme in 1982, the Gross Enrollment Ratio (GER) at primary level (standards I to V) went up by 10% during July-September, 1982 as compared to the corresponding period in 1981.

### Where should the programme focus more?

- Anaemia is a major health problem in Tamil Nadu, especially among women and children, says the 2019-21 National Family Health Survey (NFHS)-5's report.

- From 50% during the period of the 2015-16 NFHS-4, the prevalence of anaemia in children now went up to 57%.
- This and many other health issues can be addressed through the combined efforts of the departments of School Education, Public Health and Social Welfare and Women Empowerment.

## India and Eastern economic forum

- The story so far: Russia hosted the seventh Eastern Economic Forum (EEF) Vladivostok from September 5 to 8. The four-day forum is a platform for entrepreneurs to expand their businesses into Russia's Far East (RFE).

### What is the Eastern Economic Forum?

- The EEF was established in 2015 to encourage foreign investments in the RFE. The EEF displays the economic potential, suitable business conditions and investment opportunities in the region.
- Agreements signed at the EEF increased from 217 in 2017 to 380 agreements in 2021, worth 3.6 trillion roubles.
- As of 2022, almost 2,729 investment projects are being planned in the region.

- The agreements focus on infrastructure, transportation projects, mineral excavations, construction, industry and agriculture.

### **Who are the major actors in the Forum? What are their interests?**

- This year, the Forum aimed at connecting the Far East with the Asia Pacific region.
- China is the biggest investor in the region as it sees potential in promoting the Chinese Belt and Road Initiative and the Polar Sea Route in the RFE.
- China's investments in the region account for 90% of the total investments.
- Besides China, South Korea has also been gradually increasing its investments in the region.
- South Korea has invested in shipbuilding projects, manufacturing of electrical equipment, gas-liquefying plants, agricultural production and fisheries.
- Japan is another key trading partner in the Far East. In 2017, Japanese investments through 21 projects amounted to \$16 billion.
- Under Shinzo Abe's leadership, Japan identified eight areas of economic cooperation and pushed

private businesses to invest in the development of the RFE.

- India seeks to expand its influence in the RFE.
- During the forum, Prime Minister Narendra Modi expressed the country's readiness in expanding trade, connectivity and investments in Russia.
- India is keen to deepen its cooperation in energy, pharmaceuticals, maritime connectivity, healthcare, tourism, the diamond industry and the Arctic.

### **What does the EEF aim for?**

- The primary objective of the EEF is to increase the Foreign Direct Investments in the RFE.
- The region encompasses one-third of Russia's territory and is rich with natural resources such as fish, oil, natural gas, wood, diamonds and other minerals. The sparse population living in the region is another factor for encouraging people to move and work in the Far East.
- The region's riches and resources contribute to five percent of Russia's GDP. But despite the abundance and availability of materials, procuring and supplying them is an issue due to the unavailability of personnel.

- The RFE is geographically placed at a strategic location; acting as a gateway into Asia.
- The Russian government has strategically developed the region with the aim of connecting Russia to the Asian trading routes.
- With the fast modernisation of cities like Vladivostok, Khabarovsk, Ulan-Ude, Chita and more, the government aims to attract more investments in the region.
- Russia is trying to attract the Asian economies in investing and developing the Far East.
- Will India be able to achieve a balance between the EEF and the Indo-Pacific Economic Framework for Prosperity (IPEF)?
- The U.S.-led Indo-Pacific Economic Framework for Prosperity (IPEF) and the EEF are incomparable based on its geographic coverage and the partnership with the host-countries.
- India has vested interests in both the forums and has worked towards balancing its involvement.
- India has not shied away from investing in the Russia-initiated EEF despite the current international conditions. At the same time, India has given its confirmation and acceptance to three of the four pillars in the IPEF.
- The country understands the benefits of being involved in the development in the RFE but it also perceives the IPEF as a vital platform to strengthen its presence in the Indo-Pacific region.
- The IPEF also presents an ideal opportunity for India to act in the region, without being part of the China-led Regional Comprehensive Economic Partnership or other regional grouping like the Comprehensive and Progressive Agreement for Trans-Pacific Partnership.
- The IPEF will also play a key role in building resilient supply chains. India's participation in the forum will help in disengaging from supply chains that are dependent on China and will also make it a part of the global supply chain network.
- Additionally, the IPEF partners will act as new sources of raw material and other essential products, further reducing India's reliance on China for raw materials.

**THE HINDU**

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### **Department-related standing committees**

- The functioning of the monsoon session of Parliament this year bears testimony to this fact: the Lok

Sabha's productivity was 47% and the Rajya Sabha only 42%.

- It may be mentioned here that Parliament has 24 Department Related Parliamentary Standing Committees (DRSC), comprising members of the Parliament of both the Lok Sabha and the Rajya Sabha in the ratio 2:1, which are duly constituted by the Speaker of the Lok Sabha and the Chairman of the Rajya Sabha, jointly.
- The mandate of these committees is to examine various legislations referred to it, the budget proposals of different Ministries, and also to do policy thinking on the vision, mission and future direction of the Ministries concerned.
- The percentage of Bills having been referred to the DRSCs during the tenures of the 14th (2004- 2009), 15th (2009-2014) and 16th Lok Sabhas (2014-2019) has been 60%, 71% and 27%, respectively.
- Committee versus Parliament
- Even though it is not obligatory for the Government to agree to refer each Bill to the DRSC, the experience, both nationally and internationally, has been that referring a Bill to the DRSC has been of use to the process of law making.
- It has been alleged that Bills which are not being referred to the

parliamentary committees, are not examined properly, especially from the perspective of consumers and stakeholders and remain just a bureaucratically conceived piece of legislation. The committee meetings are in camera and, therefore, the meetings are held in a comparatively congenial atmosphere of bonhomie and cordiality than they would be in Parliament.

- The deliberations in these committees mostly add value to the content of the legislation and, more often than not, the Members, their party positions notwithstanding, try to reach a consensus.
- Governments and the ruling party should not be wary of these committees, as in most of these committees, the government has a majority and the final decision is always by the process of majority voting.

### **Steps**

- First, the Speaker of the Lok Sabha and the Chairman of the Rajya Sabha have powers to refer Bills to a DRSC of Parliament. This requirement is often given a go by for various political or administrative reasons
- Second, all discussions in the Parliamentary Standing Committee should be frank and free.



- Third, the committees can be given a fixed timeline to come up with the recommendation and present its report which can be decided by the Speaker/Chairman
- Fourth, to ensure quality work in the committees, experts in the field may be invited who could bring with them the necessary domain knowledge and also help introduce the latest developments and trends in that field from worldwide.
- Fifth, the Speaker/Chairman should have the right to fix a time limit, sometimes even stringent, if the government of the day asks for it and the demand is found to be reasonable by the Speaker/Chairman.
- Sixth, between two sessions, there is generally enough time to organise committee meetings for discussions on Bills in the parliamentary committees.
- Seventh and last, when it comes to the budget proposals of the Ministries, the committees should not limit themselves to discussing just the budget proposals and endorsing them with a few qualifications here or amendments there.

**THE HINDU**

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### **Climate action and cooperative federalism**

- India's procurement of 5,450 electric buses and subsequent increase in ambition to have 50,000 e-buses on the country's roads by 2030 represent the immense potential for progress on climate and development goals through close collaboration between the Union and State governments.
- With the shared aim to rapidly electrify a key pillar of India's public transportation, recent governance efforts have created a new business model for e-buses.
- Convergence Energy Services Limited (CESL), a nodal agency of the Union government, acted as the programme manager in this effort at centralised procurement in concert, with State-led demand and customisation.
- Coordination between a range of Union government Ministries and State governments standardised demand conditions across these five cities and discovered prices that beat the increasingly outmoded internal combustion engines.
- On a cost-per-kilometre basis, the prices discovered were 40% lower than diesel and 34% less than CNG (without factoring in the subsidy through FAME-II).

- A note on FAME: the Faster Adoption and Manufacturing of (Hybrid & Electric Vehicles in India (FAME-India) Scheme was launched under the National Mission on Electric Mobility in 2011/National Electric Mobility Mission Plan 2020, and unveiled in 2013.
- The scheme encourages the progressive induction of reliable, affordable and efficient electric and hybrid vehicles.
- With high fuel prices and energy security challenges in the wake of the war in Ukraine, the switch to electric vehicles appears even more sensible and lucrative.
- To be clear, excessive centralisation can have limitations and contradict the federal principles enshrined in the Constitution.
- For instance, India's States and districts vary vastly in their vulnerability to climate impacts, and decentralised decision-making and locally-led adaptation will help reduce potential damage to lives and livelihoods.
- Urban local bodies and gram panchayats can be the heart of climate action.
- However, in certain areas where India must move the needle quickly or where States lack size and financial clout, such as the

electrification of mass mobility, centralised procurement and programme management can deliver architectural transformations rather than just incremental transitions.

**THE HINDU**

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## Front loaded rate hikes

- The Reserve Bank of India will have to front-load its monetary policy to fight stubborn inflation and shield medium-term growth
- Inflation has remained above the RBI's tolerance level since January,
- "Front-loading of monetary policy actions can keep inflation expectations firmly anchored and reduce the medium-term growth sacrifice.
- There was, however, a resurgence of food price pressures, mainly from cereals, even as fuel and core components such as transport and manufacturing provided a modest measure of respite
- Aggregate demand was firm and poised to expand further as the festival season sets.
- Coordinated monetary and fiscal policy responses are needed to tackle this because "given the limited policy space, frontloading of monetary policy actions can keep inflation expectations firmly anchored thus maintaining the credibility of the central bank, re-align inflation with the target and reduce the medium-term growth sacrifice.

## Flash flood

- Flash floods swept through several towns in hilly central Italy after hours of exceptionally heavy rain
- Flooding that begins within 6 hours, and often within 3 hours, of the heavy rainfall (or other cause).
- Flash Floods can be caused by a number of things, but is most often due to extremely heavy rainfall from thunderstorms. Flash Floods can occur due to Dam or Levee Breaks, and/or Mudslides (Debris Flow).
- The intensity of the rainfall, the location and distribution of the rainfall, the land use and topography, vegetation types and growth/density, soil type, and soil water-content all determine just how quickly the Flash Flooding may occur, and influence where it may occur.
- Urban Areas are also prone to flooding in short time-spans and, sometimes, rainfall (from the same storm) over an urban area will cause flooding faster and more-severe than in the suburbs or countryside.
- The impervious surfaces in the urban areas do not allow water to infiltrate the ground, and the water runs off to the low spots very quickly.
- If an area has had recent rainfall, the soil may be saturated to capacity and unable to absorb any more water.

- Flooding can also occur after a drought, when soil is too dry and hardened to absorb the precipitation.
- Flash floods are common in desert landscapes after heavy rainfalls and in areas with shallow soil depths above solid bedrock that limits the soil's ability to absorb rain.
- Since water runs downhill, rainfall will seek the lowest point in a potential pathway. In urban areas, that's often streets, parking lots and basements in low-lying zones.
- Often the design standards and rules that we use to engineer these features are based on historic rainfall data for the location where we're working.

## **THE HINDU**

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### **Eklavya School**

#### **Steps**

- Engineers design storm water control systems to limit the damage that rainfall can do.
- Culverts transfer water and help control where it flows, often directing it underneath roads and railways so that people and goods can continue to move safely.
- Storm water containment ponds and detention basins hold water for release at a later time after flooding has ceased.
- Many cities also are using green infrastructure systems, such as rain gardens, green roofs and permeable pavement, to reduce flash flooding. Restoring wetlands along rivers and streams helps mitigate flooding as well.
- Eklavya Model Residential Schools (EMRS)
- EMRS started in the year 1997-98 to impart quality education to ST children in remote areas in order to enable them to avail of opportunities in high and professional educational courses and get employment in various sectors.
- The schools focus not only on academic education but on the all-round development of the students. Each school has a capacity of 480 students, catering to students from Class VI to XII.
- Hitherto, grants were given for construction of schools and recurring expenses to the State Governments under Grants under Article 275 (1) of the Constitution.
- In order to give further impetus to EMRS, it has been decided that by the year 2022, every block with more than 50% ST population and at least 20,000 tribal persons, will have an EMRS.

- Eklavya schools will be on par with Navodaya Vidyalaya and will have special facilities for preserving local art and culture besides providing training in sports and skill development.
- Across the country, as per census 2011 figures, there are 564 such sub-districts out of which there is an EMRS in 102 sub-districts. Thus, 462 new schools have to be opened by the year 2022.

## **THE HINDU**

### **Blended biodiesel**

- As part of efforts to reduce its carbon footprint, the Indian Air Force (IAF) is looking to fly an AN-32 transport aircraft modified to operate on 10% blended biodiesel for 200 flight hours in the next six months.
- Biodiesel can be blended and used in many different concentrations. The most common are B5 (up to 5% biodiesel) and B20 (6% to 20% biodiesel).
- B100 (pure biodiesel) is typically used as a blend stock to produce lower blends and is rarely used as a transportation fuel.

### **B20**

- B20 is a common blend because it represents a good balance of cost,

emissions, cold-weather performance, materials compatibility, and ability to act as a solvent

- Engines operating on B20 have similar fuel consumption, horsepower, and torque to engines running on petroleum diesel.
- B20 with 20% biodiesel content will have 1% to 2% less energy per gallon than petroleum diesel, but many B20 users report no noticeable difference in performance or fuel economy. Biodiesel also has some emissions benefits,
- Biodiesel still offers greater greenhouse gas benefits than conventional diesel fuel

### **LB100 and High-Level Blends**

- B100 and other high-level biodiesel blends are less commonly used directly as a transportation fuel than B20 and lower blends due to a lack of regulatory incentives and pricing. Biodiesel-compatible material for certain parts.
- B100 has a solvent effect; it can clean a vehicle's fuel system and release deposits accumulated from petroleum diesel use.
- The release of these deposits may initially clog filters and require frequent filter replacement in the first few tanks of high-level blends.

## Indian PM in SCO

- Today's era is not of war and we have spoken to you many times on the phone that democracy, diplomacy and dialogue are such things that touch the world,"
- The Chabahar trade route to Central Asia
- "They stressed the need to make concerted efforts to diversify the trade basket and enter into long-term arrangements to promote trade and investment.
- Connectivity was considered key to unlock the potential in this regard, including greater usage of the Chabahar port and the International North-South Transport Corridor.

**THE HINDU**

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## Climate change and monsoon

- The problem is that it is very challenging for us to understand the situation, which calls for a lot more research.
- Persistence of intense La Nina conditions, the abnormal warming of East Indian Ocean, negative Indian Ocean Dipole (IOD), southward movement of most of the monsoon depressions and lows and pre-monsoon heating over the Himalayan region are melting glaciers.
- There is more evidence coming our way on how global warming has been impacting the Indian monsoon.
- Most of the monsoon weather systems have been travelling across central parts of the country, changing the area of rainfall.
- But we did see a large regional and temporal variability in rainfall this year.
- Our research shows that global warming increases the fluctuations in the monsoon, resulting in both long dry periods and short spells of heavy rains.
- This year, the monsoon was potentially influenced by La Nina also the cooler than usual Pacific conditions,
- One of the major impacts of changes in track of monsoon systems can be seen on kharif crops, particularly rice production.
- They form a significant share of more than 50% of total food grain production during this period.
- Bihar, West Bengal and Uttar Pradesh, which account for a third of the country's total rice production, have been highly deficit despite an active monsoon current in July and August.
- These uneven distribution rains along with increasing temperatures and humidity give rise to pest attacks and diseases. This will, in turn, impact the quality of the grain as well as the nutrition value may vary.
- Drought, on the other hand, reduces plant transpiration rates and may result in leaf rolling and drying, reduction in leaf expansion rates and plant biomass, immobilisation of solutes and increased heat stress of leaves.
- Recent research indicates that monsoon rainfall became less frequent but more intense in India during the latter half of the 20th century.

**THE HINDU**

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## Ecology and Agriculture economics

- An ecological niche is the right set of environmental conditions under which an animal or plant species will thrive.
- A range of ecological niches can occur within an ecosystem.
- Biodiversity is the result of these niches being occupied by species that are uniquely suited to them.
- Desert plants, for example, are suited for dry, arid ecological niches because they have the ability to store water in their leaves.
- As the world's climate undergoes change, the ability of existing species to hold on to their biogeographic niches may be altered.
- This has an important bearing on agriculture, as practices and crop choices that have worked well for centuries may no longer be ideal.
- Factors that are altered by such changes include the availability of food and nutrients, occurrence of predators and competing species.
- Non-living, or abiotic factors also affect ecological niches.
- These include temperature, amount of available light, soil moisture, and so on.
- *Crocus sativus*, the saffron plant, is propagated through underground

stems called corms. It is thought to be a native of Greece, and grows best under Mediterranean climate conditions.

- Today, Iran grows nearly 90% of the world's saffron.
- India produces 5% of the world's saffron.
- Historically, some of the world's most prized saffron has been grown in old lake beds of Kashmir.
- The study identified 4,200 square kilometre of new areas suitable for saffron cultivation in places in Jammu and Kashmir, Himachal Pradesh, North Sikkim, Imphal, Manipur, and Udagamandalam, Tamil Nadu.

### THE HINDU

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## Induced pluripotent stem (iPS) cell

- Small trials are sparking fresh enthusiasm for induced pluripotent stem (iPS) cell research.
- iPS cells are adult cells that have been coaxed into an embryonic-like state and can develop into any cell type in the body.
- The studies involved repairing the cornea and treating heart diseases, macular degeneration and Parkinson's disease.

- Induced pluripotent stem (iPS) cells, are a type of pluripotent stem cell derived from adult somatic cells that have been genetically reprogrammed to an embryonic stem (ES) cell-like state through the forced expression of genes and factors important for maintaining the defining properties of ES cells.
- iPSC is derived from skin or blood cells that have been reprogrammed back into an embryonic-like pluripotent state that enables the development of an unlimited source of any type of human cell needed for therapeutic purposes.

## THE HINDU

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### Saturn tilt

- Swirling around the planet's equator, the rings of Saturn are a dead giveaway that the planet is spinning at a tilt.
- The belted giant rotates at a 26.7-degree angle relative to the plane in which it orbits the sun.
- Astronomers have suspected that this tilt comes from gravitational interactions with Neptune, as Saturn's tilt precesses at nearly the same rate as the orbit of Neptune.
- But a new modelling study by astronomers at MIT and elsewhere has found that, while the two planets may have once been in sync, Saturn has since escaped Neptune's pull.
- The researchers propose in a study (Science) that Saturn, which today hosts 83 moons, once harboured one more, an extra satellite that they name Chrysalis.
- Together with its siblings, Chrysalis orbited Saturn for several billion years, tugging on the planet in a way that kept its tilt, says a release.
- But around 160 million years ago, the team estimates, Chrysalis became unstable and came too close to its planet that pulled the satellite apart.
- The loss of the moon was enough to leave Saturn with the present-day tilt.
- The researchers surmise, while most of Chrysalis' shattered body may have made impact with Saturn, a fraction of its fragments could have remained suspended in orbit, eventually breaking into small icy chunks to form the planet's signature rings.
- The missing satellite, therefore, could explain two long standing mysteries: Saturn's present-day tilt and the age of its rings, which were previously estimated to be about 100 million years old much younger than the planet itself.

## Atomic clocks and quantum entanglement

- High-precision atomic clocks and quantum entanglement, to achieve two atomic clocks that are “entangled.”
- This means the inherent uncertainty in measuring their frequencies simultaneously is highly reduced.
- While this is a proof-of concept experiment, it has the potential for use in probing dark matter, precision geodesy and other such applications.
- Quantum entanglement is the physical phenomenon that occurs when a group of particles are generated, interact, or share spatial proximity in a way such that the quantum state of each particle of the group cannot be described independently of the state of the others, including when the particles are separated by a large distance.
- An atomic clock is a clock that measures time by monitoring the resonant frequency of atoms. It is based on atoms having different energy levels.
- Electron states in an atom are associated with different energy levels, and in transitions between such states they interact with a very specific frequency of electromagnetic radiation.
- This phenomenon serves as the basis for the International System of Units' (SI) definition of a second:
- The topic of quantum entanglement is at the heart of the disparity between classical and quantum physics: entanglement is a primary feature of quantum mechanics not present in classical mechanics.
- Measurements of physical properties such as position, momentum, spin, and polarization performed on entangled particles can, in some cases, be found to be perfectly correlated.
- Atomic clocks grew in accuracy and became so dependable that in 1967, the definition of a second was revised to be the time taken by 9,192,631,770 oscillations of a cesium atom.
- At the start of the 21st century, the cesium clocks that were available were so accurate that they would gain or lose a second only once in about 20 million years.
- At present, even this record has been broken and there are “optical lattice clocks” that are so precise that they lose a second only once in 15 billion years.
- Two strontium atoms separated in space by a small distance, can be pushed into an “entangled state” so

that a comparison of their frequencies becomes more precise

## THE HINDU

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- Potential applications of this when extended in space and including more nodes than two, are in studying the space-time variation of the fundamental constants and probing dark matter deep questions in physics. In quantum physics, entanglement is a weird phenomenon described as a “spooky action at a distance” by Albert Einstein.
- Normally, when you consider two systems separated in space that are also independent and you wished to compare some physical attribute of the two systems, you would make separate measurements of that attribute and this would involve a fundamental limitation to how precisely you can compare the two for two separate measurements have to be made.
- On the other hand, if the two were entangled, it is a way of saying that their physical attributes, say spin, or in this case, the frequency, vary in tandem.
- Measuring the attribute on one system, tells you about the other system.
- This in turn improves the precision of the measurement to the ultimate limit allowed by quantum theory.

## Lumpy skin disease

- The lumpy skin disease (LSD) virus that has killed at least 50,000 cattle in India this year may be structurally different from the version of the virus prevalent in India in 2019, raising questions on whether the new vaccine being developed for safeguarding cattle may be adequately protective.
- This is significant as Lumpi-ProVaInd, a vaccine developed by the Indian Veterinary Research Institute, and the Indian Council of Agricultural Research (ICAR) National Research Centre on Equines is based on LSD virus samples from cattle in Ranchi afflicted in the 2019 outbreak.
- The most recent example is India's refusal to join the trade pillar of the Indo-Pacific Economic Framework (IPEF) while deciding to join the three other pillars of the IPEF supply chains, tax and anti-corruption, and clean energy.
- India's move to stay out of IPEF, a U.S.-sponsored soft trade arrangement at best, comes two years after India walked out of the negotiations on the Regional Comprehensive Economic Partnership (RCEP) which came to effect earlier this year.
- Both the agreements lay at the heart of the Indo-Pacific and could potentially shape the economic character of the broader Indo-Pacific region.
- For instance, India concluded an FTA with the United Arab Emirates earlier this year, signed Early Harvest Agreements with Australia and the United Kingdom, and several more agreements are being negotiated.
- However, the recent decision to stay out of the IPEF shows a clear policy direction in New Delhi: by not becoming a part of the IPEF and RCEP, and signing FTAs with individual states, New Delhi has made it clear that it favours bilateral agreements, and is not keen on

### THE HINDU

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## Geopolitics and Goeconomics- IPEF

- Do-Pacific and Quad in a big way while unwilling to join two of the region's key multilateral trading agreements goes to show that Goeconomics and geopolitics are imagined and pursued parallelly in New Delhi, not as complimenting each other.



multilateral, plurilateral and even soft agreements such as the IPEF.

### **A regressive step, China factor**

- There are several reasons why New Delhi's decision to stay out of various regional trading agreements is a regressive policy decision.
- For one, the absence of the world's fifth largest economy from various regional trading platforms will invariably boost China's geo-economic hegemony in Asia.
- There is an attempt, however feeble, by countries such as the U.S. to economically decouple from China, and to create forums without China on board, the IPEF being one such example.
- In other words, India must not shy away from trading with China as part of multilateral arrangements while at the same time joining arrangements which have no Chinese presence.
- The second reason why staying out of IPEF is a bad idea is because for India, it would be hard to integrate itself into the regional and global supply chains without being a part of important regional multilateral trading agreements.
- Third, we have no option but to address some of the deeper challenges plaguing the investment and business environment in India.
- Consider the fact that even those firms that have left China, albeit not many, due to the so-called U.S. decoupling from China, have not turned up at India's doorstep.
- Fourth, if India is indeed serious about its maritime grand strategy, which cannot be solely military in nature, it needs to get the states in the region to create economic stakes in India (something China has done cleverly and consistently) and vice-versa.
- More so, without creating economic stakes with the states of the region, India's 'Act East' policy will revert to its earlier avatar 'Look East'. For sure, India does have an FTA with the ASEAN (which the Modi government has reservations about), but it is also important for India to become part of trading arrangements which have major non-regional states so as to become a major part of the region's supply chains.
- Third International Equal Pay Day 2022 the day falls on September 18
- Full and productive economic growth requires a human-centred recovery from the pandemic, which will be made possible by improving women's employment outcomes and reducing the gender pay gap.

- This is attested by the International Labour Organization's "Global Wage Report 2020–21" which suggests the crisis inflicted massive downward pressure on wages and disproportionately affected women's total wages compared to men.
- This greater wage reduction for women means that the pre-existing gender pay gap has widened.
- Indian women earned, on an average, 48% less compared to their male counterparts in 1993-94. Since then, the gap declined to 28% in 2018-19 as in the labour force survey data of the National Sample Survey Office (NSSO).
- The pandemic reversed decades of progress as preliminary estimates from the Periodic Labour Force Survey (PLFS) 2020-21 show an increase in the gap by 7% between 2018-19 and 2020-21.
- A large part of the gender pay gap can still be attributed purely to discrimination based on one's gender or sex. Gender-based discriminatory practices include: lower wages paid to women for work of equal value; undervaluation of women's work in highly feminised occupations and enterprises, and a motherhood pay gap lower wages for mothers compared to non-mothers.
- India has taken several steps in the legislative sphere to close the gender pay gap, especially at the low end of the wage distribution.
- In this regard, it was one of the pioneering countries to enact the Minimum Wages Act in 1948 and followed by the adoption of the Equal Remuneration Act in 1976.
- Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) in 2005 benefited rural women workers and helped reduce the gender pay gap, both directly and indirectly.
- Directly, by raising the pay levels of women workers who participated in the programme, and indirectly, benefits accrued to women involved in agricultural occupations through higher earnings, as MGNREGA contributed to the rapid rise in overall rural and agricultural wages in the country.
- In 2017, the Government amended the Maternity Benefit Act of 1961, which increased the 'maternity leave with pay protection' from 12 weeks to 26 weeks for all women working in establishments employing 10 or more workers.
- Skill India Mission to equip women with market-relevant skills to bridge

the learning to-livelihood gap and the gender pay gap

- One of the targets of the UN Sustainable Development Goal 8 is “achieving full and productive employment and decent work for all women and men, including for young people and persons with disabilities and equal pay for work of equal value” by 2030.
- In support of this Goal, the Equal Pay International Coalition (EPIC), was launched in 2017 as a multi-stakeholder initiative led by the ILO, UN Women and the Organisation for Economic Co-operation and Development (OECD) that seeks to achieve equal pay for women and men everywhere.

## THE HINDU

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### China and Pakistan nexus

- China’s misuse of its P-5 status disrupts collective efforts to counter terrorism.
  - The Sino-Pak nexus in the field of nuclear and missile proliferation is well recorded
  - Together, the two countries also helped North Korea with weapons of mass destruction (WMD) technologies
  - . Subsequent cooperation included Chinese supply to Pakistan of ring magnets for high-speed centrifuges and the grandfathering of existing arrangements to deepen cooperation through the Chashma series of nuclear reactors.
  - The so-called China-Pakistan Economic Corridor (CPEC), which runs through Pakistan-occupied Kashmir (POK) is one of the mainstays of connectivity under the Belt and Road Initiative (BRI).
  - It violates the Sino-Pak border agreement of March 1963, Article 6 of which explicitly refers to its interim nature.
  - Undertaken without any wider consultation with India, which has territorial claims over the region through which it runs, the CPEC has proved disruptive to both India-Pakistan and India-China relations.
- Recently, China used its status as a permanent member of the UN Security Council (UNSC) to put a hold on the UN Security Council’s Al Qaida and ISIL (Daesh) Sanctions Committee’s (also known as the UNSC 1267 Committee) listing of Laskar-e-Taiba (LeT) terrorist Sajid Mir, one of India’s most wanted in the 2008 Mumbai attacks

- China got engaged in the CPEC project for its own ends, more strategic than economic.
- The Karakoram Highway passes through the Khunjerab Pass and facilitates direct linkages between occupied Kashmir territory on both sides, including the trans-Karakoram tract of Shaksgam claimed by India, and now part of China occupied Kashmir.
- The CPEC offers China access to the Indian Ocean, natural resources and facilitates greater control over a strategic partner prone to upheavals.
- After the abrogation of Article 370 by India in August 2019, China vehemently opposed the internal political changes effected by India
- Apart from synchronising their positions at the UN, China and Pakistan have created new tandems extending to other international organisations such as the Organisation of Islamic Cooperation (OIC).
- Pakistan is China's main bridge to Islamic world. Pakistan plays a key role in fending off pressure on China within the OIC on account of its human rights violations in Xinjiang and the ill-treatment of its Muslim minorities, especially the Uyghurs.
- A key strategic objective for China is to seek access to basing facilities in Gwadar and other sites in the Indian Ocean littoral.

## THE HINDU

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### Ban on export of broken rice

#### The story so far:

- On September 9, the Centre instituted a ban on the export of broken rice. Additionally, it mandated an export duty of 20% on rice in husk (paddy or rough), husked (brown rice) and semi-milled or wholly-milled rice.
- The measures do not affect export of basmati or parboiled rice.
- The Secretary at the Department of Food and Public Distribution Sudhanshu Pandey stated that the measures would ensure adequate availability of broken rice for consumption by the domestic poultry industry and for other animal feedstock.
- Additionally, it would sustain production of ethanol that would further assist the successful implementation of the Union government's Ethanol Blending Programme (EBP).
- However, the measures may affect countries dependent on Indian food

exports in the face of a lost 'breadbasket' in Ukraine owing to the Russian conflict.

- Foodgrain stocks (including rice, wheat and unmilled paddy) in the Food Corporation of India (FCI)'s central pool had dropped 33.5% on a year-over-year basis to 60.11 million tonnes as of September 1 prompting doubts on the continuation of the scheme.
- It is imperative to note that rice is a water-intensive crop which also requires a hot and humid climate.
- Thus, it is best suited to regions which have high humidity, prolonged sunshine and an assured supply of water.
- It is for this reason that the eastern and southern regions of the country, with sustainable humidity and suitable mean temperatures are deemed favourable for the crop.
- While the two regions are able to grow paddy crops throughout the year, higher rainfall and temperature prompt the northern regions to grow only one crop of rice from May to November.
- Andhra Pradesh, Telangana, Punjab, Haryana, Chhattisgarh, Odisha, Madhya Pradesh, Tamil Nadu, Maharashtra, Uttar Pradesh, and Bihar are among the rice producing States in India.

- A perusal of Indian Meteorological Dept's data, between June 1 and September 14 illustrate that Uttar Pradesh, Jharkhand, Punjab and Bihar have experienced deficient rainfall.

### **What are the concerns on ethanol blending?**

- Ethanol is an agro-based product, mainly produced from molasses, which is a by-product of the sugar industry.
- The EBP endeavours to blend ethanol with vehicular fuels as a means to combat the use of fossil fuels and in turn, rising pollution.
- As per the government, sugar-based feed stocks alone would not be able to meet its stipulated target of 20% ethanol blending by 2025.
- Because of supply constraints there has been an uptick in the procurement of rice from the FCI
- Which is becoming prohibitively expensive. India accounted for 41% of the total rice exports in the world in 2021, larger than the next four exporters (Thailand, Vietnam, Pakistan, and United States) combined
- In descending order, China, Senegal, Vietnam, Djibouti and Indonesia are the biggest importers of India's broken rice.



## Process of inclusion/exclusion Of ST- art 342

- The process begins at the level of a State or Union Territory, with the concerned government or administration seeking the addition or exclusion of a particular community from the SC or ST list.
- The final decision rests with the President's office issuing a notification specifying the changes under powers vested in it from Articles 341 and 342.
- The inclusion or exclusion of any community in the Scheduled Tribes or Scheduled Castes list come into effect only after the President assents to a Bill that amends the Constitution (Scheduled Castes) Order, 1950 and the Constitution (Scheduled Tribes) Order, 1950, as is appropriate, after it is passed by both the Lok Sabha and Rajya Sabha.
- A State government may choose to recommend certain communities for addition or subtraction from the list of SCs/STs based on its discretion.
- This recommendation may come from studies it commissions like in the case of classifying the Hatti community in Himachal Pradesh.
- Following this, the proposal to include or remove any community from the Scheduled List is sent to the Union Ministry of Tribal Affairs from the concerned State government
- After this, the Ministry of Tribal Affairs, through its own deliberations, examines the proposal, and sends it to the Registrar General of India (RGI).
- Once approved by the RGI, the proposal is sent to the National Commission for Scheduled Castes or National Commission for Scheduled Tribes, following which the proposal is sent back to the Union government, which after inter-ministerial deliberations, introduces it in the Cabinet for final approval.
- As for the communities approved for addition to the list by the Cabinet earlier last week, a Bill was introduced in Parliament by the Tribal Affairs Minister this year, specifying the exclusion of the Gond community from the SC list in four districts of Uttar Pradesh and moving them to the ST list.
- Similarly, another Bill was also introduced by Mr. Munda, to shift certain communities in Jharkhand from the SC list to the ST list and add synonyms and variations in spellings for certain other communities in the ST list.



### **What is the criteria to begin the process?**

- To establish whether a community is a Scheduled Tribe, the government looks at several criteria, including its ethnological traits, traditional characteristics, distinctive culture, geographical isolation and backwardness.
- However, in March this year the Supreme Court said it wanted to fix fool-proof parameters to determine if a person belongs to a Scheduled Tribe and is entitled to the benefits due to the community.
- It said the judiciary was no longer sure about an “affinity test” used to sift through distinct traits to link a person to a tribe.
- There is the likelihood, it said, that contact with other cultures, migration and modernisation would have erased the traditional characteristics of a tribe.

### **THE HINDU**

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## Proof of stake vs proof of work

### The story so far

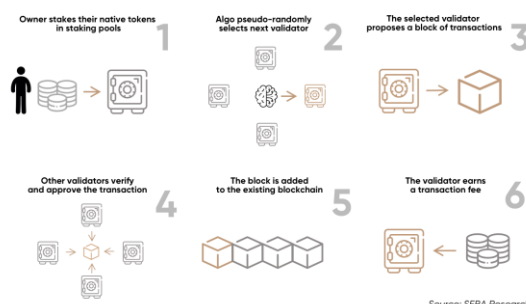
- On September 15, the Ethereum blockchain fully transitioned to a new way of processing transactions.
- This is an important day for crypto trackers as the Ethereum's Merge event, as it is known, could change the nature of crypto and Web3 itself.
- Developers say the transition to what is called a 'proof-of-stake' consensus mechanism will cut Ethereum's energy consumption by 99.95%.

### What is Ethereum?

- Ethereum is one of the most used platforms by developers to build decentralised apps (dApps), smart contracts, and even crypto tokens.
- The platform's currency, Ether is only second to Bitcoin (BTC) in terms of market capitalisation.
- The change in the way Ethereum builds the blockchain comes with not just environmental consequences, but also major cyber and financial security implications.
- What is the importance of consensus mechanisms? Why is there a need for a new mechanism?

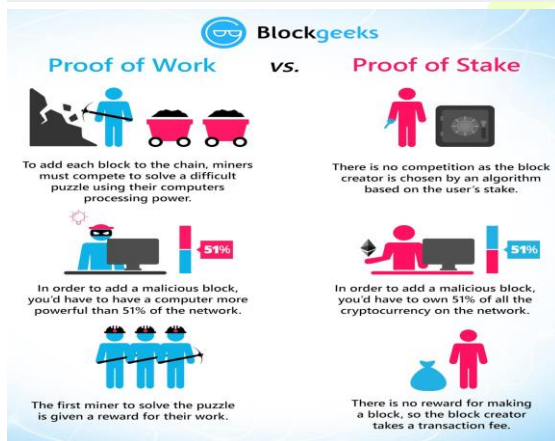
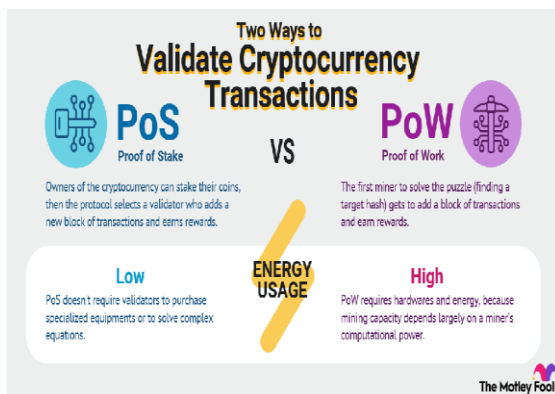
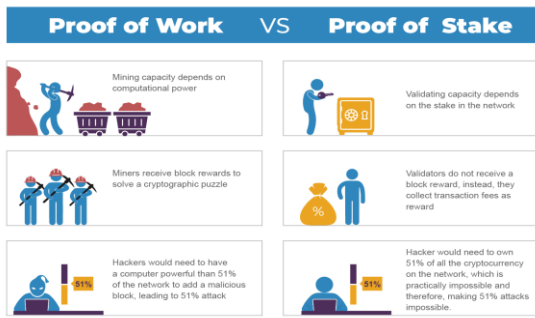
- Decentralised transactions are processed on blockchains using consensus mechanisms.
- Ethereum's former method, 'proof-of-work', which is also used by Bitcoin, needs powerful mining hardware that consumes a lot of electricity and generates enormous amounts of heat.
- This energy is then used to process extremely difficult mathematical puzzles, the solution of which would let new transactions be added to the blockchain so as to reward the miners with crypto.

#### HOW STAKING WORKS IN THE PROOF-OF-STAKE CONSENSUS MECHANISM



#### Proof of stake





consumption nearly matches that of Finland while its carbon footprint is comparable to Switzerland.

- For some time, European countries even mulled a crypto mining ban, while China actually carried out a nationwide crackdown on crypto miners, sending them fleeing overseas.
- Ethereum has decided to switch to a 'proof-of-stake' consensus mechanism, where Ether owners will stake their own coins in order to serve as collateral and help process new blockchain transactions, in return for rewards.
- Some Bitcoin supporters go so far as to say that miners' activities, though harmful to the environment now, will help bring about an energy revolution and the faster adoption of solar, wind, gas, and nuclear energy.
- However, consequences of crypto mining across the globe have included mass electricity blackouts, fire accidents, overburdened grids, struggles between locals and crypto miners for more control over the energy supply, and even crypto mining on indigenous land.

- Many environmentalists, policy makers, and regulators have strongly criticised the impact of Bitcoin mining on local communities.
- Common centres for mining included China (before a near total crypto ban), the U.S., Russia, and Kazakhstan countries with cheap electricity rates and colder climates.
- Ethereum's website admitted that their crypto's total annualised power



- Scandinavian countries have these features in common reliance on representative and participatory democratic institutions where separation of powers is ensured;
- A comprehensive social welfare schema with emphasis on publicly provided social services and investment in child care,
- Education and research among others, that are funded by progressive taxation;
- Presence of strong labour market institutions with active labour unions and employer associations which allow for significant collective bargaining.

## THE HINDU

### Death penalty and mitigating circumstances

- Trial judges are called upon to make a decision on whether only a death sentence will meet the ends of justice, or a life term will be enough.

- As a salutary norm, the Supreme Court has laid down that the death penalty can be imposed only in the “rarest of rare” cases.
- Subsequent judgments have sought to buttress this principle by holding that the gruesome nature of the offence may not be the sole criterion to decide what brings it under the ‘rarest of rare’ category.
- The offender, his socio-economic background, and his state of mind are also key factors in this regard. In practice, the sentencing part of the trial takes place after the court records a conviction.
- It is often done on the same day as the verdict, with only some limited arguments being heard on ‘mitigating circumstances’ from the convict’s side and on the ‘aggravating circumstances’ from the prosecution.
- Same-day sentencing has been upheld by several judgments, with the Supreme Court often saying where a meaningful opportunity has been given to the convict to present mitigating factors, the mere fact that death was awarded on the same day would not vitiate the sentence.
- Some High Courts have given a chance to convicts to present mitigating factors so that the inadequacy of the sentencing

process in the trial court does not matter.

- Present thinking, however, is veering towards the view that courts must elicit reports from the jail authorities, probation officers and even trained psychologists to assess the mitigating factors in favour of not imposing the death penalty.
- In its referral order, the Bench has also raised the question as to the stage at which mitigating factors are to be presented. It has noted that the scales are tilted against the convicts now, as it is only after conviction that they are able to speak about mitigating circumstances.
- The prosecution, on the other hand, presents its case from the beginning on how heinous the crime was, and how much the accused deserved maximum punishment.
- The Constitution Bench may come up with new guidelines under which the trial courts themselves can hold a comprehensive investigation into factors related to the upbringing, education and socio-economic conditions of an offender before deciding the punishment.

**THE HINDU**

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## Essential practice doctrines

- The essential practices doctrine owes its existence to a speech made by B.R. Ambedkar in the Constituent Assembly.
- “The religious conceptions in this country are so vast that they cover every aspect of life, from birth to death,” he said. “...I do not think it is possible to accept a position of that sort... we ought to strive hereafter to limit the definition of religion in such a manner that we shall not extend beyond beliefs and such rituals as may be connected with ceremonials which are essentially religious. It is not necessary that... laws relating to tenancy or laws relating to succession, should be governed by religion.”
- In a series of cases, the Court has assumed something akin to an ecclesiastical power and determined whether a practice which was religious in nature was also “essential” to that religion.
- The upshot is a conflation of tests through which the Court is now deciding not only when the state could lawfully interfere in the interests of social welfare and reform, but also which practices are deserving of constitutional protection in the first place.

- The effects the embedding of this test in the Court's jurisprudence has achieved at least two things, neither of which is particularly desirable.
- First, it has allowed the Court to narrow the extent of safeguards available to religious customs by directly impinging on the autonomy of groups to decide for themselves what they deem valuable, violating, in the process, their right to ethical independence.
- Second, it has also negated legislation that might otherwise enhance the cause of social justice by holding that such laws cannot under any circumstances encroach on matters integral to the practice of a religion.
- For example, in 1962, the Court struck down a Bombay law that prohibited ex-communications made by the Dai of the Dawoodi Bohra community when it held that the power to excommunicate is an essential facet of faith and that any measure aimed at social welfare cannot reform a religion out of its existence.
- The essential practices test is not without alternatives. In his concurring opinion, in the case concerning the ban on entry of women into the Sabarimala temple, Justice D.Y. Chandrachud proposed one such doctrine: a principle of anti-exclusion.
- Its application would require the Court to presume that a practice asserted by a religious group is, in fact, essential to the proponents of its faith.
- But regardless of such grounding, the Constitution will not offer protection to the practice if it excludes people on grounds of caste, gender, or other discriminatory criteria.
- As Justice Chandrachud put it, "the anti-exclusion principle allows for due-deference to the ability of a religion to determine its own religious tenets and doctrines.
- At the same time, the anti-exclusion principle postulates that where a religious practice causes the exclusion of individuals in a manner which impairs their dignity or hampers their access to basic goods, the freedom of religion must give way to the over-arching values of a liberal constitution.

## **THE HINDU**

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## **New NON Alignment dimensions**

- India's presence at the meeting of the Council of Heads of State of the SCO was significant, reflecting a desire to be a part of both blocs, without antagonising either.
- The justification provided is that it represented a 'new version' of Non-alignment, viz., steering an independent course, despite open association with rival blocs.
- The philosophical underpinning for this seems to be that 'Nonalignment of the past' had not succeeded, and a way had to be found for "multiple engagements of the future.
- While, China today presents an acute 'near-term problem' for India, it is important that India does not fall into the trap that the current adversarial relationship with China is 'carved in stone', and can or never will be altered.
- India's foreign policy should be creative enough to leave an opening for an improvement in India-China relations over the longer term.
- Refashioning relations with China over the longer term is important, but attention also needs to be given on how to manage relations in the near term in the context of the

growing closeness in China-Russia relations.

- As their relations become closer, they have the potential of adversely impacting the current warmth in India-Russia relations.
- India, no doubt, has been a firm adherent of the 'No First Use Doctrine', and while nuclear relationships involving India, China and Pakistan have remained remarkably subdued over many years, India's strategic and foreign policy establishment cannot afford to overlook the nuclear aspect, given that the country is wedged between two active, and hostile, nuclear powers China and Pakistan.

### **THE HINDU**

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#### **Lumpy skin disease**

- Lumpy skin disease is caused by the lumpy skin disease virus (LSDV), which belongs to the genus capripoxvirus, a part of the poxviridae family (smallpox and monkeypox viruses are also a part of the same family). The LSDV shares antigenic similarities with the sheep pox virus (SPPV) and the goat pox virus (GTPV) or is similar in the immune response to those viruses.
- It is not a zoonotic virus, meaning the disease cannot spread to humans.

- It is a contagious vector-borne disease spread by vectors like mosquitoes, some biting flies, and ticks and usually affects host animals like cows and water buffaloes.
- According to the United Nations Food and Agriculture Organisation (FAO), infected animals shed the virus through oral and nasal secretions which may contaminate common feeding and water troughs.
- Thus, the disease can either spread through direct contact with the vectors or through contaminated fodder and water.
- Studies have also shown that it can spread through animal semen during artificial insemination.
- LSD affects the lymph nodes of the infected animal, causing the nodes to enlarge and appear like lumps on the skin, which is where it derives its name from.

#### **What is the geographical distribution and how did it spread to India?**

- The disease was first observed in Zambia in 1929, subsequently spreading to most African countries extensively, followed by West Asia, Southeastern Europe, and Central Asia, and more recently spreading to South Asia and China in 2019.

#### **What are the economic implications?**

- The spread of the disease can lead to “substantial” and “severe” economic losses according to FAO and the World Organisation for Animal Health (WOAH).
- The disease leads to reduced milk production as the animal becomes weak and also loses appetite due to mouth ulceration.
- The income losses can also be due to poor growth, reduced draught power capacity and reproductive problems associated with abortions, infertility and lack of semen for artificial insemination.
- Movement and trade bans after infection also put an economic strain on the whole value chain.
- India is the world’s largest milk producer at about 210 million tonnes annually. India also has the largest headcount of cattle and buffalo worldwide.
- In Rajasthan, which is witnessing the worst impact of LSD, it has led to reduced milk production, which lessened by about three to six lakh litres a day.
- The FAO has suggested a set of spread control measures for LSD, which involves vaccination of susceptible populations with more than 80% coverage, movement

control of bovine animals and quarantining, implementing biosecurity through vector control by sanitising sheds and spraying insecticides, strengthening active and passive surveillance;

- Spreading awareness on risk mitigation among all stakeholders involved, and creating large protection and surveillance zones and vaccination zones.
- The Union Ministry of Fisheries, Animal Husbandry and Dairying informed that the 'Goat Pox Vaccine' is "very effective" against LSD and is being used across affected States to contain the spread.
- The affected States have put movement bans in place and are isolating infected cattle and buffaloes, spraying insecticides to kill vectors like mosquitoes, with some affected States such as Maharashtra, Rajasthan, Delhi, and Uttar Pradesh also setting up dedicated control rooms and helpline numbers to guide farmers whose cattle have been infected.
- In a major breakthrough, two institutes of the Indian Council of Agricultural Research (ICAR) have developed an indigenous vaccine for LSD, which the Centre plans to commercialise and roll out in the next three to four months.

## Spotted deer

- The chital also known as spotted deer, chital deer, and axis deer, is a deer species native to the Indian subcontinent. It was first described and given a binomial name by German naturalist Johann Christian Polycarp Erxleben in 1777
- It is sexually dimorphic; males are larger than females, and antlers are present only on males.
- The chital is listed on the IUCN Red List as least concern "because it occurs over a very wide range within which there are many large populations".
- The chital ranges over 8–30°N in India and through Nepal, Bhutan, Bangladesh, and Sri Lanka.
- The western limit of its range is eastern Rajasthan and Gujarat.
- The northern limit is along the Terai belt of the foothills of the Himalaya and from Uttar Pradesh and Uttaranchal through to Nepal, northern West Bengal and Sikkim and then to western Assam and the forested valleys of Bhutan, which are below an elevation of 1,100 m (3,600 ft).
- The eastern limit of its range is through western Assam to the Sundarbans of West Bengal and Bangladesh. Andaman and Nicobar

Islands and Sri Lanka are the southern limits.

**THE HINDU**

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REPORTER

## **The International Treaty on Plant Genetic Resources for Food and Agriculture (also known as ITPGRFA)**

- The International Treaty on Plant Genetic Resources for Food and Agriculture (also known as ITPGRFA, International Seed Treaty or Plant Treaty, is a comprehensive international agreement in harmony with the Convention on Biological Diversity,
  - It aims at guaranteeing food security through the conservation, exchange and sustainable use of the world's plant genetic resources for food and agriculture (PGRFA), the fair and equitable benefit sharing arising from its use, as well as the recognition of farmers' rights.
  - It was signed in 2001 in Madrid, and entered into force on 29 June 2004.
  - There are 148 contracting parties to the Plant Treaty (147 Member States and 1 intergovernmental organization, the European Union)
  - The treaty has implemented a Multilateral System (MLS) of access and benefit sharing, among those countries that ratify the treaty, for a list of 64 of some of the most important food and forage crops essential for food security and interdependence.
  - The list of plant genetic material included in the Multilateral System of the Treaty is made of major food crops and forages. The Forages are also divided in legume forages and grass forages. They were selected taking into account the criteria of food security and country interdependence
  - The treaty recognises farmers' rights, subject to national laws to:
    - The protection of traditional knowledge relevant to plant genetic resources for food and agriculture;
    - the right to equitably participate in sharing benefits arising from the utilisation of plant genetic resources for food and agriculture; and
    - The right to participate in making decisions, at the national level, on matters related to the conservation and sustainable use of plant genetic resources for food and agriculture.
  - The Treaty establishes the Multilateral System of Access and Benefit-sharing to facilitate plant germplasm exchanges and benefit sharing through Standard Material Transfer Agreement (SMTA).
- India**
- India stood for the creation of an option for implementation of

farmers rights, and proposed that use of Global Information System (GIS) for Plant Genetic Resources for Food and Agriculture needs capacity building among contracting parties

- It also mentioned that the country wants continued efforts towards conservation and sustainable use of Plant Genetic Resources for Food and Agriculture.
- “India, as member of Committee on Conservation and Sustainable Use, proposed joint programs with international and regional organisations/institutes to fulfil this agenda.

## THE HINDU

### PLI SCHEME

- The Cabinet on Wednesday cleared a ₹19,500-crore production-linked incentive (PLI) scheme to incentivise manufacture of domestic solar cell modules to reduce the industry’s reliance on Chinese-made panels.
- Production Linked Incentive or PLI scheme is a scheme that aims to give companies incentives on incremental sales from products manufactured in domestic units.
- The scheme invites foreign companies to set up units in India, however, it also aims to encourage local companies to set up or expand existing manufacturing units and also to generate more employment and cut down the country’s reliance on imports from other countries.
- It was launched in April 2020, for the Large Scale Electronics Manufacturing sector, but later towards the end of 2020 was introduced for 10 other sectors.
- This scheme was introduced in line with India’s Atmanirbhar Bharat campaign.
- Based on the ten sectors to which the Production Linked Incentive scheme was expanded to, the government aims at achieving the following targets:
  - The government aims to make India an integral part of the global supply chain and enhance exports
  - India is expected to have a USD 1 trillion digital economy by 2025 as it expects the demand for electronics to increase under its projects like Smart City and Digital India
  - The PLI scheme will make the Indian automotive Industry more competitive and will enhance the globalisation of the Indian automotive sector
  - The Indian Textile Industry is one of the largest in the world and with this scheme, it shall attract large investment in the sector to further



boost domestic manufacturing, especially in the manmade fibre (MMF) segment and technical textiles

- India, being the second-largest producer of steel in the world, introducing it under the PLI scheme will benefit the country as it may expand export opportunities
- Similarly, telecom, solar panels, pharmaceuticals, white goods, and all the other sectors introduced can contribute to the economic growth of the country and make India a manufacturing hub globally.
- All the other sectors introduced can contribute to the economic growth of the country and make India a manufacturing hub globally.

## THE HINDU

### **The Criminal Procedure (Identification) Act, 2022**

- Ministry of Home Affairs (MHA) notified the rules governing The Criminal Procedure (Identification) Act, 2022
- The Act seeks to repeal the Identification of Prisoners Act, 1920, which is over 100- years-old.
- The old Act's scope was limited to capturing of finger impression, footprint impressions and

photographs of convicted prisoners and certain category of arrested and non-convicted persons on the orders of a Magistrate

- The Act empowers a Magistrate to direct any person to give measurements, which till now was reserved for convicts and those involved in heinous crimes.
- It also enables the police upto the rank of a Head Constable to take measurements of any person who resists or refuses to give measurements.
- As per the rules, "measurements" include finger-impressions, palm-print, footprint, photographs, iris and retina scan, physical, biological samples and their analysis, behavioural attributes including signatures, handwriting or any other examination referred to in Section 53 or Section 53A of the Code of Criminal Procedure, 1973 (2 of 1974). Though it has not been specified, analysis of biological samples could also include DNA profiling.
- The Opposition members termed it "unconstitutional" and an attack on privacy as it allowed the record of samples of even political detainees.

### **Who will be the repository of the data?**

- The National Crime Records Bureau (NCRB) under MHA will be the one-stop agency for storing and preserving the data of arrested persons.
- The State governments can also store the data, but it shall provide compatible application programming interfaces for sharing the measurements or record of measurements with the NCRB.
- What are the provisions for destruction of records in case a suspect is acquitted?
- The procedure for destruction and disposal of records are yet to be specified by the NCRB.
- The rules state that any request for destruction of records shall be made to the Nodal Officer who is to be nominated by the respective State Government.
- The nodal officer will recommend the destruction after verifying that such record of measurements is not linked with any other criminal cases.
- The horrific fire accident on September 12 in Secunderabad, Telangana
- A report by the Regional Fire Officer pointed out several irregularities, including absence of set-back spaces and escape routes, defunct firefighting equipment, spiral staircase around the elevator shaft, basement utilised illegally for commercial purposes, and absence of smoke management and emergency lighting.
- Applicability of fire safety norms is another gap through which several builders escape.
- Almost all commercial establishments where fire mishaps took place in recent past did not fall into the category

### **FIRE SAFETY NORMS**

- **The horrific fire accident on September 12 in Secunderabad, Telangana**
- **A report by the Regional Fire Officer pointed out several irregularities, including absence of set-back spaces and escape routes, defunct firefighting equipment, spiral staircase around the elevator shaft, basement utilised illegally for commercial purposes, and absence**

**THE HINDU**

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### **FIRE SAFETY**

## **of smoke management and emergency lighting**

- The residents need to conduct Fire Safety Audits in every half-yearly and submit its report to the regulated fire department.
- Hazard Identification & Risk Assessment (HIRA) shall focus on identifying potential hazards.
- A comprehensive Fire Safety Audit will address the inherent fire hazards of the daily activities in occupancy and shall recommend fire measures to reduce them.
- Each Municipal Corporation having a population of more than 1 million must put in a fire hazard response and prevention plan for their respective jurisdictions.
- 13th Finance commission recommendation on fire safety must get implemented.
- A part of the grant allocated by the commission to the Urban Local Bodies (ULBs) must get utilized on refurbishing the Fire services in their jurisdiction.
- The Urban Local Bodies (ULBs) shall provide financial support to State Fire Services Department.

**THE HINDU**

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## Kyrgyzstan and Tajikistan conflict

- Regular talks have tried to resolve the issue, one of the crucial points of disagreement remains over the map which should be used for demarcation purposes.
- Almost half of its close to a 1000 km border is disputed.
- The creation of the Soviet Union saw the large-scale redistribution of livestock to collective and state farms, which upset the existing status quo. Unfortunately, there was only so much land to go around.



- The Tajik territory saw their livestock increase, and with scarce grazing land, agreements were signed between the two populations over the utilisation of Kyrgyz territory by the Tajiks' livestock.

### What led to the current flare-up?

- The ideological basis of the current set of clashes is reinforced by developmental issues, thus providing a fertile ground for the entire geopolitical space to become a hotbed of multiple minor conflicts and clashes.
- The environmental trajectory of the conflict can be further highlighted by incidents which saw groups from either side planting trees in disputed

areas and engaging in a physical confrontation using agricultural equipment as weapons.

- Ferghana valley continues to be a site of struggle and frequent violent outbursts, with the location consisting primarily of Tajiks, Kyrgyz, and Uzbeks, who have historically shared common sociological specificities, economic activities, and religious practices.

### **What is the road ahead?**

- The path to resolution of the conflict will require groups to agree upon a common map.
- The international community will have to make efforts to solve the dispute by involving elders in the communities, as historically, elders have been used to resolve conflicts.

### **THE HINDU**

#### **Internal election in political parties**

- And the ECI generally has been very soft on this.
- The ECI does not question the result or the procedure the parties followed.
- The ECI expects political parties to abide by their constitution, a copy of which is also submitted to the

commission when the parties are registered.

- It is not for the commission to step in or criticise if anyone is elected unopposed.
- India, it seems, is a party-led democracy or democracy based on political parties. But the phrase “political party” [was] nowhere mentioned or described in our Constitution.
- The definition of a political party for the first time enters through the anti-defection law in 1985.
- All rules and regulations apply more to candidates than to political parties in India.
- The courts have made an observation that nothing in Article 324 of the Constitution, or Section 29A of the Representation of the People Act, 1951 tells us that the ECI can actually regulate internal structures, organisations or elections of the party.
- Having these internal elections, meetings and contests of ideas is important. Second, and as you rightly pointed out, internal elections are key for upward mobility.
- And that is why what we are witnessing today in India and South Asia is problematic for democracy,



where all political parties are centralised.

- They are family-controlled parties, and dynastic politics has become a norm.
- E-government must consider state funding of political parties.
- Currently, they have to beg, borrow and steal to run their outfits.
- They take money from the corporates and, of course, there are no free lunches.
- One very objective criterion of this funding could be the votes they get; for example, the state can pay them ₹100 for each vote polled in their favour.

## THE HINDU

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### National sports code

- The International Olympic Committee (IOC) has made it clear that it would not recognise any acting/interim president of the IOA.
- The IOC is not pleased that the long-pending elections to the IOA have not been held and has even threatened India with serious consequences.
- The IOC could ban India if the elections are not held by December.
- Then, Indian athletes would not be able to represent the country in

events, including the Olympic Games, and India would not be able to receive funds from the IOC.

- Only a month ago, the Gokulam Kerala football team found out what happens when such a ban is enforced.
- The players had to return from Uzbekistan, where they had gone to take part in the AFC Women's Club Championship.
- That was because the world football governing body FIFA had banned the All India Football Federation (AIFF).
- The ban has since been lifted and the AIFF has conducted its elections.
- But there are other sports, such as hockey and table tennis that continue to be run by the court-appointed committees of administrators.
- The main reason behind the messy state of affairs in India's sports administration at the moment is the reluctance of the officials, across sports bodies, to accept the National Sports Development Code of India, introduced by the central government in 2011.
- Its intention was noble. By putting a limit to the tenure and age of an administrator, it had the potential to stop sports federations from remaining as the personal fiefdoms of a few, many of them politicians.



## What is the National Sports Code?

- As aforementioned, the sole aim of the National Sports Code is to develop a culture of transparency and accountability in the functioning of national sports federations.
- Formerly known as the National Sports Development Code of India, it strives to promote good governance practices in the management of sports at the national level.

## Salient Features

- Restoring limits on tenures of office bearers
- Annual Recognition of National Sports Federations
- The organisations that follow the National Sports Code and whose Constitutions abide by the guidelines enjoy various facilities/ concessions provided by the Government of India.
- Setting roles and responsibilities for agencies
- The National Sports Code also lays down the roles and responsibilities of agencies such as the Ministry of Youth Affairs and Sports (MYAS), National Sports Federations (NSF) and the Sports Authority of India (SAI). The MYAS determines the eligibility conditions for recognition of NSFs among other duties.

## THE HINDU

### Annual Recognition of NSFs

- The purpose of this is to make sure that the NSFs have basic standards, norms and procedures with regard to their internal functioning.
- They should conform to the laws laid down by the concerned International Federations. Every year, the NSFs must submit detailed documentations for a grant of recognition.
- Long Term Development Plans (LTDP)
- Sports Code clarifies that in order to receive assistance from the government, NSFs must submit LTDPs.
- The guidelines for submitting an LTDP have been clarified in the Sports Code wherein they should contain detailed planning in areas like development of sportsperson, coaching, officiating, participation, broadcasting, development of clubs, domestic tournament, schedule, participation in international tournaments, hosting of major events, professionalization of management, financial management, marketing, promotion, sports sciences, facilities, equipment and special projects.

### **Democracy within political parties**

- The Election Commission of India (ECI) has rejected the idea of a 'permanent president' for a party, while taking issue with the Yuvajana Shramika Rythu Congress Party (YSRCP), which rules Andhra Pradesh.
- The party reportedly elected Chief Minister Y.S. Jagan Mohan Reddy as its president for life in July 2022. The ECI says such a step is inherently anti-democratic.
- Any party that participates in a democratic process, and wants to govern and legislate, should include formal and periodic election of office-bearers as part of the way it functions as an association.
- Increasingly, the fragmentation of India's polity into a federalised, multi-party system has also given way to domination by "charismatic" individuals or their families, mainly because of the nature of support that these parties enjoy or due to their financing structures which necessitates centralised control by a single coterie or a family.
- This is why several political parties today do not insist on thoroughgoing internal elections to secure their leadership; and even if they do conduct polls, they lack sufficient contestation and are done to

reaffirm the dominance of the high command.

- The ECI has periodically used guidelines issued for registration of parties under Section 29A of the Representation of the People Act, 1951 to remind parties to conduct elections and to ensure that their leadership is renewed, changed or re-elected every five years.
- But the commission does not have any statutory power to enforce internal democracy in parties or to mandate elections.
- The lack of such substantive power only leads to parties carrying out the ECI's edicts in a mechanical manner.

**THE HINDU**

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## Child marriage

- With the aim of eradicating child marriage, Nayagarh, a tiny Odisha district, has adopted a unique initiative by scrupulously recording information on all adolescent girls in the district.
- From birth registration date to Aadhaar number, from family details to skill training, information of 48,642 adolescent girls can be found in registers named Aliva.
- The register has been useful for law enforcement agencies, as parents lie about the age of their girls.
- “When tipped off, district administration and the police refer to registers for ascertaining proof of girls’ age.

### THE HINDU

#### QUAD (HADR) PARTNERSHIP

- Foreign Ministers of the Quad group of countries India, the U.S., Australia, and Japan met on the fringes of the United Nations General Assembly (UNGA) to sign a Humanitarian Assistance and Disaster Relief (HADR) partnership into effect.
- External Affairs Minister S. Jaishankar said the world was going through a difficult period listing the Ukraine conflict and climate events, and said that it was especially important for the Quad to further the “constructive agenda.
- Humanitarian Assistance and Disaster Relief (HADR) partnership
- The signing of these Guidelines marks a significant moment in Quad cooperation, which traces its origin from the 2004 ad hoc Tsunami Core Group which catalyzed international response efforts in the aftermath of the tsunami that devastated many countries in the region.
- The Partnership has been designed to respond to the vulnerabilities of the Indo-Pacific region and will serve as a dedicated framework for Quad partners to coordinate their disaster response operations in the region.
- Quad partners may provide joint or coordinated individual assistance in crisis preparation or alert, crisis-response or post crisis review phases of disaster response.
- Any humanitarian action will be carried out with respect for the sovereignty, territorial integrity and national unity of the affected state.
- Under the partnership, Quad partners will promote inclusion by advancing gender equality and women’s and girl’s empowerment, ensuring persons with disabilities are agents and beneficiaries of

humanitarian action, and by ensuring indigenous people, minority groups and persons in vulnerable situations are not left behind.

- The guidelines call for zero tolerance for inaction on tackling Sexual Exploitation, Abuse and Harassment (SEAH).
- Quad partners will meet twice a year to share lessons and operational updates and will conduct at least one scenario-based table-top exercise to improve preparedness, coordination and interoperability.
- The Partnership will coordinate HADR operations with the UN and other international agencies and donors, regional and local governments, public and private organizations, and non-government organizations where appropriate and in the best interest of humanity.

## THE HINDU

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### G4

- In addition to reiterating their support for each other's bids to become permanent members of the UNSC, the G4 also reiterated its support for African countries being represented in a permanent and non-permanent capacity.

- The G4 felt that the UN decision making bodies needed to be urgently reformed as global issues were increasingly complex and interconnected.

### Who are the G4 members?

- The G4 is a grouping of Brazil, Germany, India and Japan which are aspiring to become permanent members of the United Nations Security Council (UNSC).
- The G4 countries are supporting each other's bids for permanent membership of the UNSC.
- All the four countries have been figured among the elected non-permanent members of the council since the UN's establishment.
- The G4 nations traditionally meet on the sidelines of the annual high-level UN General Assembly session.
- At present, the UNSC comprises five permanent members and 10 non-permanent member countries which are elected for a two-year term by the General Assembly of the United Nations. The five permanent members are Russia, the UK, China, France and the United States and these countries can veto any substantive resolution.

### Highlights of the meeting:

- The ministers reiterated their support for each other's candidatures as aspiring new permanent members in a reformed Security Council.
- They expressed their strong determination to work towards launching text-based negotiations without further delay in the Inter-Governmental Negotiations (IGN), on the basis of a single document, with a view to its adoption in the General Assembly.
- They expressed their strong support to the Common African Position (CAP) as enshrined in the Ezulwini Consensus and the Sirte Declaration.
- The Consensus underscores Africa's goal to be fully represented in all decision making organs of the UN particularly the Security Council.
- unequivocal message that it remains squarely focused on taming inflation
- The rupee's slide was softened by the Reserve Bank of India's intervention to smoothen volatility.
- The fact that the rupee is not alone in depreciating against the dollar can be of little comfort to Indian companies reliant on imports of raw materials or services for the smooth functioning of their businesses.
- The higher import bill is also bound to add inflationary pressures to an economy already beset by persistently elevated inflation and further complicates monetary policy makers' efforts to rein in the price gains.
- The rupee's more than 8% depreciation against the dollar so far in 2022, with almost all of the weakening having occurred in the wake of Russia's invasion of Ukraine.

### THE HINDU

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#### Rupees depreciation

- The rupee is yet again facing renewed pressure, along with major peers, as the dollar continues to strengthen in the wake of the Federal Reserve's latest jumbo 75 basis points interest rate increase and the U.S. central bank's
- Overseas portfolio investors too have once again turned net sellers of Indian stocks and debt in the last two sessions after having resumed their purchases of local assets
- Overseas portfolio investors too have once again turned net sellers of Indian stocks and debt in the last two sessions after having resumed their purchases of local assets.
- And the Fed's projection of further steep monetary tightening, of at

least another 125 basis points, is only likely to lead to more outflows over the last quarter of this year.

- With the rupee's real effective exchange rate (REER), or trade-weighted average of its value, also signalling that the Indian currency is still overvalued, the RBI's rate setting panel will have a fine tightrope to walk next week as it battles to restore a semblance of price stability without choking growth and by ensuring the rupee does not weaken too sharply.

### **What is a Real effective exchange rate (REER)?**

- REER is the weighted average of a country's currency as compared to an index or basket of other major currencies.
- A comparison of the relative trade balance of a country's currency against each country within the index tells about the weightage.
- This exchange rate is used to determine an individual country's currency value relative to the other major currencies in the index.

### **THE HINDU**

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## **South Asia and changing geopolitics**

- The international system is witnessing geopolitical changes and a push for competitive great power hegemony.
- The United States leads with its goal for primacy in the international system.
- The U.S.'s national security documents advocate curbing China's rise, weakening Russia's capabilities, securing Europe behind U.S. leadership and building satellite alliances with countries which conform to U.S. interests and values.
- But other players have different agendas and the Global South matters more than before.
- They see Russia especially when in alliance with China or any other country as dangerous to U.S. geopolitics
- Countries of the Global South, especially India, China and others, are being blamed for the failing sanctions against Russia in the context of the Ukraine war.
- The truth is that the Global South, with a few exceptions (except seven), wants a quick and negotiated end to this terrible war.
- The reasons for neutrality include: the needs for regime survival



especially because many in the South are dependent on Russian energy, fuel, fertilizers, wheat, commodities and defence equipment

- Recent experiences such as the refusal by the West to grant a one-time exception for patents for the COVID-19 vaccine have not helped either.
- Media images of the way refugees from the South are treated in contrast to the welcome to Ukrainian refugees have revealed the unsurprising racism.
- China's expanding military footprint is problematic for many countries in Asia. China's 'grey zone' policies of creeping expansionism, violation of maritime zones in the South China Seas and elsewhere have antagonised several countries which include Vietnam, Indonesia, India and the Philippines.
- But even then, most of these Southern countries would not like to be a part of security or military alliances with either the West or the Russian or Chinese side.
- The U.S. response to this neutrality has been to put massive pressure for sanctions on Russia and build threat narratives about China. But there has been an unprecedented pushback from the South that wants to make its own strategic choices.
- . Of course regional powers also work with the U.S. to project their own power for example Saudi Arabia vis-à-vis Iran. Smaller states do a balancing act between regional powers as Sri Lanka does between India and China. Stronger countries of the Global South such as India have used their leverage to negotiate with multiple sides.
- India increased oil purchases from Russia, shrugging off western pressure.
- India has a military Logistics Exchange Memorandum of Agreement (LEMOA) with the U.S.; at the same time it has developed the International North South Transport Corridor connecting Russia and India via central Asia and Iran with three sanctioned states.
- It participates in military exercises such as the U.S.-led RIMPAC (the Rim of the Pacific Exercise, and one of the world's largest maritime exercises) but also sends a military contingent for the Vostok exercises (one of exercises Moscow routinely conducts) with Russia and China. So, India, Vietnam, Indonesia, Malaysia, Turkey and others have developed the capacity to transact with competing and conflicting sides

- The South's choices are extending slowly to Geoeconomics.
- The fear of the U.S. strategy of freezing dollar reserves has made the South cautious.
- Further, there is the U.S. Treasury Secretary Janet Yellen's recent announcement about U.S. trade policies of 're-shoring' and 'friend-shoring' meaning trade between allies.
- Reshoring is also known as onshoring, inshoring, or back shoring. It is the opposite of offshoring, which is the process of manufacturing goods overseas to try to reduce the cost of labor and manufacturing.
- This is leading the South to gradually find ways of bypassing the dollar in bilateral trade by using local currencies.
- Currency swap arrangements are used by China and Association of Southeast Asian Nations (ASEAN) + 3 countries; India with Russia and 23 other countries.
- This does not mean the end of dollar dominance, but alternate paths are opening up for them.
- In sum, the Global South has new agency. Multilateral institutions, ranging from BRICS (Brazil, Russia, India, China and South Africa) and the African Union, to ASEAN, and the

Community of Latin American and Caribbean States, have given it new confidence.

- Several countries including India, Brazil, South Africa, Indonesia and Malaysia have become economic powerhouses, albeit with their own inequalities and domestic problems.

### **THE HINDU**

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## Sea turtle poaching

- The first worldwide estimate of the number of adult sea turtles moved on the black market suggests that 1.1 million of the reptiles were illegally harvested between 1990 and 2020
- But poaching is dropping sharply, and most populations worldwide are doing well.
- But researchers also found that the illegal catch has declined in the past decade 2010 to 2020 by nearly 30%, with some exceptions occurring in large, stable, and genetically stable diverse marine turtle populations.

## THE HINDU

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### Recombinant viruses

- Lumpy Skin Disease (LSD) is a viral disease that predominantly affects cattle.
- First identified in an outbreak in Zambia in 1929, the disease is caused by the LSD virus (LSDV), a poxvirus of the genus capripoxvirus.
- . In 2016, LSD was reported from Russia and South-East European nations. In the Indian subcontinent, the disease was initially observed in Bangladesh in 2019, followed by China, India, Nepal, Bhutan, Vietnam, Hong Kong and Myanmar

- Adaptation of poxviruses are dominated by genomic mutations, deletions, and recombinations.

### Recombinant viruses

- A recombinant virus may occur naturally or be produced by recombining pieces of DNA using recombinant DNA technology.
- This may be used to produce viral vaccines or gene therapy vectors.
- The term is also used to refer to naturally occurring recombination between virus genomes in a cell infected by more than one virus strain.
- This occurs either by Homologous recombination of the nucleic acid strands or by reassortment of genomic segments.
- Both these and mutation within the virus have been suggested as ways in which influenza and other viruses evolve.
- Recombination events are now well catalogued in poxviruses and mediated by the poxvirus DNA polymerases in cells being co-infected by viruses of same or different genus.
- Recombination of pathogenic and vaccine strains are, therefore, likely when an infected animal is immunised or infection occurs in the pre-immune phase after vaccination.

## Working of antiviral drugs

- Pfizer's PAXLOVID™ is an investigational SARS-CoV-2 protease inhibitor antiviral therapy, specifically designed to be administered orally so that it can be prescribed at the first sign of infection or at first awareness of an exposure, potentially helping patients avoid severe illness which can lead to hospitalization and death.

## Working of Antiviral drugs

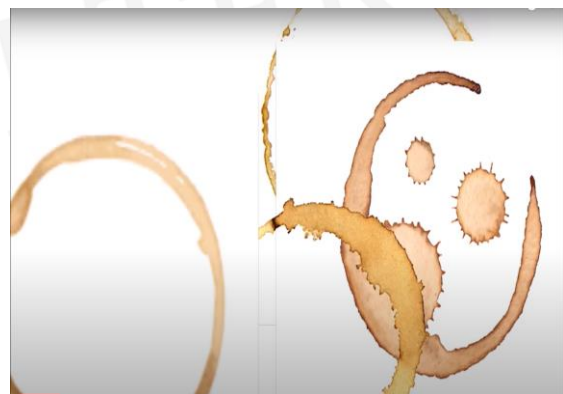
- Rather than killing a virus directly, antivirals usually suppress the virus's ability to infect and multiply in your cells,
- These drugs often work by inhibiting molecular interactions and functions needed by the virus to produce new copies of itself.
- The way a drug produces its therapeutic effect is called its mechanism of action. Antivirals are often delivered in combinations that have different mechanisms of action.
- This helps to prevent the emergence of mutated drug-resistant viral strains that can bypass the effects of a single drug.
- For example, combination antiviral therapy is now the standard of care in HIV and hepatitis C virus

infections. It is highly desirable to develop multiple antivirals whenever possible.

## THE HINDU

### Coffee ring effect

- For about two decades now, the 'coffee ring effect' has been known as when a drop of spilt coffee dries up, the outermost edge of the dried drop is a little darker than the centre, forming a darker 'ring'.
- This is caused by the outward drift of suspended coffee particles from the centre, causing a denser, darkened rim.



- Now, researchers from Indian Institute of Technology, Madras, have shown that after reaching the rim, as the drop dries, some of the particles undergo an inward drift too.
- This research has applications in agriculture, forensic science and even disease diagnosis.

- The inward movement takes place because the particles are 'squished' between the solid plate and the evaporating liquid interface.
- Hence, the 'coffee' ring is not formed at the point where the liquid touches the solid, but there is a small gap between the outermost edge and the ring.
- Launch: July 30, 2020
- Landing: Feb. 18, 2021, Jezero Crater, Mars
- Following the rover's arrival, NASA named the landing site Octavia E. Butler Landing.
- Perseverance has a similar design to its predecessor rover, Curiosity, although it was moderately upgraded. It carries seven primary payload instruments, nineteen cameras, and two microphones.
- The rover also carried the mini-helicopter Ingenuity to Mars, an experimental aircraft and technology testbed that made the first powered flight on another planet.

## THE HINDU

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### Perseverance

#### Why in news?

- Since July, NASA's Perseverance rover has drilled and collected four slim cores of sedimentary rock, formed in what was once a river delta on Mars.
- They are the first of this type of rock to be gathered on another world and scientists are excited because at least two of the cores probably contain organic compounds, which, on Earth, are often associated with living things.

#### About Perseverance

- Mission Name: Mars 2020
- Rover Name: Perseverance
- Main Job: Seek signs of ancient life and collect samples of rock and regolith (broken rock and soil) for possible return to Earth.

## THE HINDU

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### Triple dip La Nina

#### When does the monsoon withdraw?

- The monsoon begins its withdrawal from the last State it reaches, which is Rajasthan.
- Around September 15, cyclonic systems from the Arabian Sea and the Bay of Bengal that fuel the monsoon from June September are replaced by an 'anti-cyclone' circulation which means dry,

windless conditions start to prevail over western and northern India.

- More technically, withdrawal is a cessation of rainfall activity over northwest India for five straight days, an anticyclone establishing itself in the lower troposphere and a marked reduction in moisture content.

### **What led to excessive rains in southern and central India?**

- In April, the IMD had forecast 'normal' rains over India but by May-end indicated it to be above normal.
- Central India and the southern peninsula were expected to get 6% more than their historical average but what we have seen are rains far in excess of this.
- These heavy rains are premised on a La Nina, the converse phenomenon of the El Nino and characterised by cooler than normal sea surface temperatures in the central Pacific.
- While, El Ninos are linked to reduced rains over India, La Ninas indicate surplus rainfall.
- India is seeing an extended spell of the La Nina, called a 'triple dip' La Nina which is a phenomenon lasting across three winter seasons in the northern hemisphere.

- This is only the third time since 1950 that a triple dip La Nina has been observed.

### **Are monsoon patterns changing?**

- Since 2019, monsoon in India has returned surpluses, barring a slight dip last year.
- The June-September rainfall in 2019 was 10% more than the 88 cm that India usually gets
- In 2020, India saw 9% more rain with August registering 27% more rain and September 4% more than its usual quota.
- The rainfall over the country as a whole, in 2021, was 1% less than normal though rainfall in September was a remarkable 35% above what is usual.
- This year the monsoon is already in surplus by about 6% and a vigorous September is likely to see India post yet another year of surplus rain.

### **THE HINDU**

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#### **UNSC reform**

- At the heart of India's participation in the 77th General Assembly is the call for a 'reformed multilateralism' through which the United Nations Security Council should reform itself into a more inclusive organisation



representing the contemporary realities of today.

- India's call for this structural overhaul of global multilateral institutions incorporates institutional accountability and a wider representation of the developing countries.
- For a global organisation such as the UN, growing stakes of developing countries in the Security Council could foster trust and leadership across the world.
- The theme of the 77th General Assembly, which seeks "A watershed moment: Transformative Solutions to Interlocking Challenges", places India right in the midst as a strong partner of the UN.
- The COVID-19 pandemic was a weak moment for UN's multilateralism.
- It highlighted the UN's institutional limitations when countries closed their borders, supply chains were interrupted and almost every country was in need of vaccines
- Countries of the global South, including India, which stepped up through relief efforts, drug distribution and vaccine manufacturing, have created space for a more inclusive UN, particularly through its Security Council (UNSC) reform.

### **The UN's faultlines**

- Second, UN-led multilateralism has been unable to provide strong mechanisms to prevent wars.
- The shadow of the ongoing Russia-Ukraine war has loomed large over several deadlocks in UNSC resolutions since the war broke out in February this year
- Finally, China's rise, belligerence and aggression which has been on display through its actions in the South China Sea, the Indo-Pacific region, and now increasingly globally, have also underscored the limitations of the UN-style multilateralism.
- China's control of multilateral organisations, including the UN, is only increasing most recently seen in the unofficial pressure China exerted on the former UN's human rights chief, Michelle Bachelet, to stop the release of a report by the UN Human Rights Council on the condition of Uyghurs in China.
- Moreover, China's unabashed use of veto power against India continues at the UN.
- In the most recent case, it blocked a joint India-U.S. proposal at the UN to enlist Sajid Mir, a top Lashkar-e-Taiba (LeT) operative involved in directing the 2008 Mumbai attacks, as a 'global terrorist.

- India hosting of a ministerial meeting of the G4 (Brazil, India, Germany and Japan) holds special significance.
- Another high-level meeting of the Indian delegation with the L.69 Group, on “Reinvigorating Multilateralism and Achieving Comprehensive Reform of the UN Security Council”, will be critical in the planning of the next steps.
- The L.69 group’s vast membership spread over Asia, Africa, Latin America, Caribbean and Small Island Developing States could bring about a wider global consensus on the issue of the UNSC reforms.
- The UN’s responses to both global and regional events have evinced a clear space for leadership and representation, as much as they have depicted its institutional inability to lead globally on its own.
- With starker divisions between countries as result of the Russia-Ukraine war and lingering pandemic-induced restrictions, the need for the UN’s reform is likely to be felt more palpably than ever before.
- Beyond the UN, the Minister’s participation in plurilateral meetings of the Quad (Australia, India, Japan, the U.S.), IBSA (India, Brazil and South Africa), BRICS (Brazil, Russia, India, China and South Africa), Presidency Pro Tempore CELAC (Community of Latin American and Caribbean States), India-CARICOM (Caribbean Community) and other trilateral formats, such as India-France-Australia, India-France-the United Arab Emirates and India-Indonesia-Australia underlines India’s search for new frameworks.
- Of global governance, amidst growing frustration with the extant multilateral order.

## THE HINDU

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### Improving sports culture -and soft power

- First, India should concentrate on forging MoUs with nations that excel in specific sports.
- The aim should be to train Indian players overseas.
- For example, Australia and the United Kingdom can assist us in swimming given their standing here.
- When it comes to running, negotiating collaborative training agreements with African countries such as Kenya would be ideal.
- Take this example too: China has requested Indian assistance in improving cricket development in China (Chongqing city).
- Second, TOPS China too also had a similar scheme has demonstrated that focusing on a few sports is

beneficial for a country such as India, which is striving to enhance its sporting abilities and standing.

- India needs to boost the number of athletes under TOPS at least 500 athletes should train under the scheme to foster a competitive climate, in turn aiding performance.
- Third, private investment needs to be harnessed to develop infrastructure.
- The better a country performs in sporting events the greater a sports person's interest in their sports atmosphere.
- This also creates a huge market for private players to invest in.
- For example, leading corporate houses in India have already shown how their active participation and investment can improve sporting performance as a result of unique corporate sports programmes.
- The Government should also work on a public-private partnership (PPP) model to create basic sporting infrastructure, as recommended by NITI Aayog, at the district level so that talent can be captured at an early stage
- "Soft power", is a "power of attraction through culture, political ideas, and policies rather than coercion" that military hard power exhibits.

## THE HINDU

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## Space as social product

- Social theorists like Edward Soja and Andrzej Zieleniec have theorized about individuals' interactions with space and how space becomes a social product and a place for practising discrimination.
- Spatial vulnerability results from the intersection of social relations of production, class relations, institutional relations and entitlement relations.
- Considering the private plantation land as a social space, the authors explain how the land is symbolic of the economic vulnerability of the labourers which has its roots in the history of slave labour, and how this vulnerability forces them to continue living and working in such deplorable conditions.
- The company, with its ownership of the space, claims power over the workers.
- The social exclusion of the community pervades public discourses and government policies as they are considered mere beneficiaries of State schemes.

**THE HINDU**

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## Semiconductor industry

- The basic component of a semiconductor chip is a sliver of silicon, which is etched with billions of microscopic transistors, forming patterns to control the flow of current widening different computational instructions
- The chip-making industry is a highly-concentrated one, with the big players being Taiwan, South Korea and the U.S.
- Therefore, the global chip shortage, U.S.-China tensions over Taiwan, and the supply chain blockages owing to the Russia-Ukraine conflict have led major economies to enter the chip-making sector with a renewed push.

### What are the changes to India's chip-making scheme?

- In December 2021, India announced its roughly \$10 billion dollar production linked incentive (PLI) scheme to encourage semiconductor and display manufacturing in the country.
- It also announced fiscal support for a design-linked initiative (DLI) scheme to drive global and domestic investment related to design software, IP rights etc.
- According to the Electronics and IT Ministry, semiconductor demand in India would increase to \$70-\$80 billion by 2026 with the growing

demand for digital devices and electronic products.

- In the previous version of the scheme, the Centre was offering to fund 30% of the project cost for 45nm to 65nm chip production, 40% for 28nm to 45nm, and 50% or half of the funding for chips 28nm or below.
- The modified scheme provides uniform 50% fiscal support for all nodes. Besides, it will provide 50% of capital expenditure for other steps of the process as well (chip design and ATMP).

### What are the challenges?

- The outlay of the scheme remains \$10 billion. Notably, just the setting up of one semiconductor fab requires an investment of anywhere between \$3 and \$7 billion.
- They also argue that the initial funding should focus on areas like design and R&D, for which India already has an established talent pool.
- Chip-making also requires gallons of ultrapure water in a single day, which experts say, could be a task for the government to provide to factories, compounded also by the drought conditions which often prevail in large parts of the country.
- Another task for the government is to drive up consumer demand in the semiconductor and linked

electronics industry to not end up in a situation where these ventures remain successful only till taxpayers are forced to fund required subsidies.

## THE HINDU

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### SCO and relation dynamics

- China was vulnerable because of the deal it had struck with Russia on Taiwan in return for a pledge to support Russia in its war with Ukraine.
- China appears to have made up its mind that its future lies with Russia as it does not see itself becoming a partner of the U.S.
- The U.S. seems to have chosen to be with democratic countries in its eventual return to centre stage.
- The emergence of a Red Quad may well be a possibility to counter democratic forces in the Indo-Pacific.
- The U.S.'s decision to modernise the Pakistani air force may be to preempt Pakistan from becoming a closer ally of China.
- India, with its special historic bonds with Russia, was the only country to demand a cessation of hostilities and want diplomacy and democracy.
- India bluntly told Russia that this was not the time for war and that the war

must stop because of the immense challenges it had posed to the world.

- India spoke about the oil crisis and the looming food scarcity, the disruption of supply chains and transit trade access.
- India's real business should have been with China, which had violated every bilateral agreement and occupied territories across the Line of Actual Control
- The only point that Mr. Modi made was that Pakistan should give India transit trade access by land to Afghanistan and Central Asia
- As Chairman of SCO, India cannot transform it from within, because a China-Russia-Iran-Pakistan axis will dominate it.
- India should concentrate on cultivating bilateral relations with democratic nations to build a pole for itself in the new world order
- The ripples of the events in Samarkand became evident in the United Nations General Assembly at its present session when both the U.S. and Russia declared for the first time that they would favour an expansion of the UNSC to make it more effective.

## **THE HINDU**

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### **Dharamshala declaration**

- 'The Dharamshala Declaration' aims to recognise India's role in contributing towards global tourism as well as focusing on recovery by also promoting domestic tourism which has been overlooked for long.
- In the declaration, the Tourism Ministry has come up with a strategy and action plan to encourage more Indians to travel domestically and explore India's natural, cultural, and spiritual beauty while simultaneously reaching the goal of an 'Ek Bharat Shreshtha Bharat' (interaction and mutual understanding).
- A draft National Tourism Policy 2022, which aims at improving the framework conditions for tourism development in the country, supporting tourism industries, strengthening tourism support functions and developing tourism sub-sectors.
- The guiding principles include promoting sustainable, responsible and inclusive tourism in line with our civilizational ethos.
- From Gautama to Gandhi, India has always spoken about the inherent need to live harmoniously with nature and within our means.
- The National Green Tourism Mission aims at institutionalising this approach.



- The National Tourism policy also aims to give impetus to digitalisation, innovation and technology through the National Digital Tourism Mission and skilling through the Tourism and Hospitality Sector Skill Mission.
- The policy also gives a special impetus to private sector participation through public-private-partnerships (PPP).
- The country has an opportunity to position itself as a major tourism destination during India's presidency of the G20 (December 2022-November 2023)
- By 2030, India is estimated to grow at 7%-9% compounded annual growth rate and we expect the enabling policy framework to bring in \$250 billion in GDP contribution from tourism, 140 million jobs in the tourism sector and \$56 billion in foreign exchange earnings with more than 25 million foreign arrivals.
- The Union government wants to reduce dependence on foreign systems, including the widely used U.S. Global Positioning System (GPS), and says NavIC provides more accurate domestic navigation and that its use would benefit the economy.
- China, the European Union, Japan and Russia have their own global or regional navigation systems to rival GPS.

### **About IRNSS**

- IRNSS is an independent regional navigation satellite system being developed by India.
  - It is designed to provide accurate position information service to users in India as well as the region extending up to 1500 km from its boundary, which is its primary service area.
  - An Extended Service Area lies between primary service area and area enclosed by the rectangle from Latitude 30 deg south to 50 deg North, Longitude 30 deg East to 130 deg East.
  - IRNSS will provide two types of services, namely, Standard Positioning Service (SPS) which is provided to all the users and Restricted Service (RS), which is an encrypted service provided only to the authorised users.
- The Union government is pushing tech giants to make smartphones compatible with its home-grown navigation system within months, worrying the likes of Samsung, Xiaomi and Apple who fear elevated costs and disruptions as the move requires hardware changes,

## **THE HINDU**

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### **IRNSS**

- The Union government is pushing tech giants to make smartphones compatible with its home-grown navigation system within months, worrying the likes of Samsung, Xiaomi and Apple who fear elevated costs and disruptions as the move requires hardware changes,

- The IRNSS System is expected to provide a position accuracy of better than 20 m in the primary service area.

**Some applications of IRNSS are:**

- Terrestrial, Aerial and Marine Navigation
- Disaster Management
- Vehicle tracking and fleet management
- Integration with mobile phones
- Precise Timing
- Mapping and Geodetic data capture
- Terrestrial navigation aid for hikers and travellers
- Visual and voice navigation for drivers.

**THE HINDU**

## **DART- Planetary Defense at NASA**

- DART (Double Asteroid Redirection Test) spacecraft collided with the space rock Dimorphos (just 160 metres wide).
- Double Asteroid Redirection Test (DART)
- DART is a spacecraft designed to impact an asteroid as a test of technology. DART's target asteroid is NOT a threat to Earth. This asteroid system is a perfect testing ground to see if intentionally crashing a spacecraft into an asteroid is an effective way to change its course, should an Earth-threatening asteroid be discovered in the future.
- DART is the first-ever mission dedicated to investigating and demonstrating one method of asteroid deflection by changing an asteroid's motion in space through kinetic impact.
- This method will have DART deliberately collide with a target asteroid which poses no threat to Earth in order to change its speed and path.
- DART's target is the binary, near-Earth asteroid system Didymos, composed of the roughly 780-meter (2,560-foot) -diameter "Didymos" and the smaller, approximately 160-meter (530-foot)-size "Dimorphos," which orbits Didymos.
- DART will impact Dimorphos to change its orbit within the binary system, and the DART Investigation Team will compare the results of DART's kinetic impact with Dimorphos to highly detailed computer simulations of kinetic impacts on asteroids.
- Doing so will evaluate the effectiveness of this mitigation approach and assess how best to apply it to future planetary defense scenarios, as well as how accurate the computer simulations are and how well they reflect the behavior of a real asteroid.
- This kinetic impact technique, which appears as the climax of Hollywood sci-fi movies like Deep Impact and Armageddon, is also known as the 'kick' method.
- It could one day save humanity from a potential cataclysmic collision by safely deflecting a killer asteroid on its course towards earth.
- It could also fuel space mining technologies and unleash the space economy in decades to come.

### **What was NASA's mission?**

- NASA, to put it simply, undertook the 'kick' technique. Compared to the massive Dimorphos, DART is a tiny

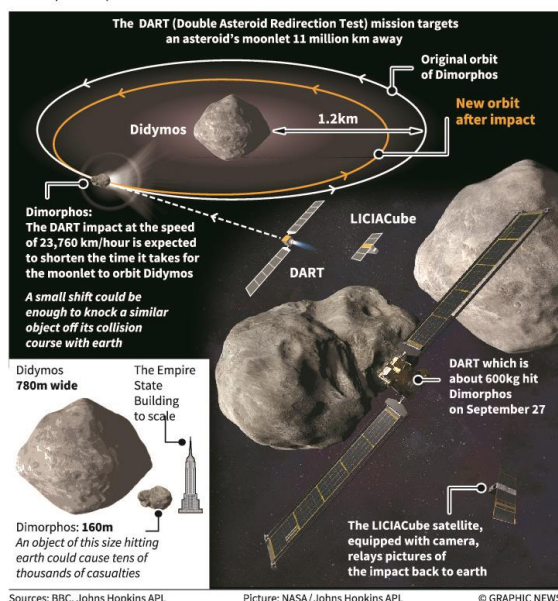
Goliath close-up images transmitted by the DART moments before the fatal collision indicate that Dimorphos is more like a pile of rubble loosely held by gravity.

- If true, the impact will eject a cascade of debris, each piece carrying away a bit of momentum and energy.
- And as a net result, the asteroid will suffer a considerable loss.
- It will speed up more, and the orbit will become nearer to Didymos.
- The orbital period will then reduce by as much as 10 minutes.

THE HINDU

Ready, set, crash!

NASA's DART spacecraft collided with the space rock Dimorphos (which orbits around Didymos, the primary asteroid) and has therefore, deflected the trajectory of the pair of space rocks



### What has been the impact assessment?

- The DART craft carried a high-resolution DRACO (Didymos

Reconnaissance and Asteroid Camera for Optical navigation) camera to observe the collision and its consequences.

- The close-up images until its fatal crash are being analysed.
- In addition, like a kangaroo with a baby in its pouch, a tiny toaster-sized Italian Space Agency-built Light Italian CubeSat for Imaging of Asteroids (LICIACube) took a piggyback ride with the DART.

### What are the other possibilities of this technique?

- At the heels of NASA, China is set to deflect a 40m diameter earth-crossing asteroid called 2020 PN1 sometime in 2026.
- While ostensibly the drive comes from the desire to protect earth from killer asteroids, perhaps the lure of space mining lurks behind.
- Mining rare earth elements comes with a high environmental cost.
- In the coming years, the penalty for polluting could make space mining economically viable.
- The 'kick' technique that deflects asteroids can then be used to move a small asteroid into a convenient position for space mining.
- Now shelved, NASA's Asteroid Redirect Mission (ARM) aimed at precisely this by bringing a 20-tonne

space rock near earth to study and mine.

- In a way, the DART mission is also part of this frame.
- For developing green energy technologies electric vehicles, solar panels, wind turbines, and energy storage devices and ushering in the low carbon economy of the future, rare earth elements such as yttrium, niobium, rhodium, palladium, osmium, iridium and scandium are critical.
- They are short in supply, and asteroid mining, it is believed, could solve the rare earth supply problem.
- From the robotic Soviet Luna 16 in the 1970s to U.S. Apollo missions and China's first lunar sample-return mission, Chang'e 5 all have brought back lunar soil.

### **Planetary Defense at NASA**

- Near-Earth objects (NEOs) are asteroids and comets that orbit the Sun like the planets, but their orbits can bring them into Earth's neighbourhood within 30 million miles of Earth's orbit. Planetary defense is "applied planetary science" to address the NEO impact hazard.
- NASA established the Planetary Defense Coordination Office (PDCO)

to manage its ongoing mission of planetary defense. The PDCO:

- Provides early detection of potentially hazardous objects (PHOs) the subset of NEOs whose orbits predict they will come within 5 million miles of Earth's orbit; and of a size large enough (30 to 50 meters) to damage Earth's surface;
- Tracks and characterizes PHO's and issues warnings of the possible effects of potential impacts;
- Studies strategies and technologies for mitigating PHO impacts; and
- Plays a lead role in coordinating U.S. government planning for response to an actual impact threat.

### **THE HINDU**

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#### **Quality engineering education**

- The All-India Council for Technical Education (AICTE) has already approved an adequate number of institutions in engineering and technology to admit at least 23.67 lakh students.
- That is twice the number of aspirants for engineering education.
- There is, thus, neither a scarcity of seats nor capacity constraints.
- The nation is, in fact, staring at a dearth of institutions offering quality



engineering education at an affordable cost.

- In business parlance, that is the ability to deliver value for money. A quick review of the data reveals that the task is daunting.
- AICTE has so far approved 5,926 institutions to offer programmes in engineering and technology.
- Of these only 1,249 (21.07%) came forward to get ranked under the NIRF in 2022. India probably doesn't need more institutions.
- The scope of enhancing the intake in the existing quality institutions also appears limited.
- What is needed is improvement in the overall quality of technical higher education across the board.
- The youth are aspirational. Monetary rewards are a major attraction.
- But that does not mean that they are not orientated towards national development.
- Headline placements serve the purpose of sustaining such motivations.
- It is now for the nation to mitigate the widening gap between the best and the rest, and ensure equality of opportunity in access to quality technical higher education.

**THE HINDU**

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## **Banning online content**

- The Government's order asking YouTube to remove 45 videos from 10 channels can be seen as a justified response to growing concern over the propagation of hate and communally sensitive material over the free video sharing website.
- Section 69A of the IT Act, which empowers the Government to block content, was upheld by the Supreme Court only after it noted that the rules provided procedural safeguards, including the need to issue notice to the originators or the intermediary, before a blocking order.
- The latest order invokes the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021.
- It has a procedure by which an inter-departmental committee considers complaints on content and makes recommendations.
- The Authorised Officer has to take the approval of the Secretary, I&B, before directing the publisher or intermediary to block the relevant content.
- There is an emergency provision under which the Secretary may order content blocking as an interim



measure, and thereafter confirm it after getting the committee's views.

- All such blocking orders are meant to be examined by a review committee, which ought to meet once in two months, but it is not known whether the panel meets regularly.

## THE HINDU

### Hydro diplomacy between India and Nepal

- The Investment Board Nepal signed a Memorandum of Understanding (MoU) with India's National Hydroelectric Power Corporation (NHPC) Limited to develop the West Seti and Seti River (SR6) projects a total of 1,200 MW.



- In an MoU in 2012, China's Three Gorges International Corporation was assigned to develop the project, but it withdrew in 2018, citing issues of resettlement and rehabilitation

- India is already involved in the Mahakali Treaty (6,480 MW), the Upper Karnali Project (900 MW) and the Arun Three projects (900 MW) in western and eastern Nepal, respectively.
- This will also help India minimise the geopolitical influence of China and firm its presence in Nepal, considering that the West Seti Hydroelectric Project was a major Chinese venture under the Belt and Road Initiative
- The project has the potential to enhance cross-border power exchanges between the two countries.
- India's severe deficit in coal-based thermal power plants in recent years, which meet 70% of India's electricity demand, has compelled the Government to arrange supplies through coal imports, accelerating the search for better alternatives.
- Steps
- First, the revised cost around the construction process has increased to \$2.04 billion
- Second, Nepal is concerned that the electricity rates and supply from India is inadequate to meet the rising demands.
- Third, the project can also be extended to other regional partners under the Bangladesh-Bhutan-India-

Nepal (BBIN) framework for cross-border energy cooperation.

## THE HINDU

### Permanent membership of UNSC

- The inescapable fact is that none of the P-5 wants the UNSC's ranks to be increased.
- One or the other of them might make some noise about supporting one or more of the aspirants.
- Each is confident that someone among them will torpedo the enlargement of the club
- There is considerable unhappiness among membership at large in the UN about the right of veto.
- The debate about veto is most often raked up when the western members of the P-5 club are not able to have their way
- There are four declared candidates for permanent membership: India, Japan, Brazil and Germany, called the G-4. Africa and Latin America and the Caribbean are unrepresented in the permanent category at present.
- Africa's claim for two permanent seats has wide understanding and support, but the Africans have yet to decide which two countries these are to be.
- As for India, we can discount Pakistan's opposition; China will not support India nor will it ever support Japan. Brazil has regional opponents and claimants.
- As for Germany, Italy is firmly opposed to its claim. Italy has an interesting argument.
- There is quite a debate going on about whether the aspiring countries should accept permanent membership without the right of veto
- Changing the membership of the Council requires amending the Charter.
- This involves consent of two-thirds of the total membership of the U N, including the concurring votes of P-5.
- This means that each of the five has a veto.
- The Charter was amended once in the 1960s to enlarge the Council by additional non-permanent seats.
- Even now, if the proposal was to add a few non-permanent seats only, it would be adopted with near unanimity or even by consensus.
- It is the permanent category that poses the problem.
- One can have a good idea of the difficulty of amending the Charter by the fact that the 'enemy clause' contained in Article 107 of the

Charter remains in it even though some of the enemy states such as Germany, Japan, Italy, etc. are very active members, often serve on the Council, and are close military allies of some of the victors in the war.

## **THE HINDU**

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GES  
REPORTER

## Tax reform

- The Union Budget 2023-24 will include steps decriminalises taxation laws, remove provisions in the Income Tax, Goods and Services Tax (GST) and Customs laws that are similar to sections that can be invoked under the Indian Penal Code (IPC), and reduce 'prohibitive' compounding charges under GST.
- The law provides for launching prosecution against offenders in cases where the amount of Goods and Services Tax (GST) evasion or misuse of input tax credit is more than Rs 5 crore.
- We have Section 132 under CGST Act which criminalises illegal credit for GST evasion.
- The compounding provisions in GST, which entail penalties from 50% to 150% of the tax amount involved, make it "impossible for anybody to pay"
- Removing provisions that are overlapping with the IPC so that they become simpler as the GST gets streamlined,"
- Compounding regime had to be made simpler and discretion had to be reduced.
- We can increase the thresholds for declaring a particular act as a crime and we can look at removing those

sections in those Acts which are actually a duplication.

- Robust growth in tax collection both in direct and indirect tax collections has paved the way for bringing in more taxpayer friendly reform to ensure ease of doing business and decriminalisation of tax laws.

## THE HINDU

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### New CDS and role of CDS

- The government appointed Lt. Gen. Anil Chauhan (retd.), former General Office Commanding-in Chief, and Eastern Army Commander, as the Chief of Defence Staff (CDS).
- The Kargil Review Committee, headed by Shri K Subramaniam in 1999 had recommended Chapter-1 A wait too long Pending Recommendations Since 1999 Chief of Defence Staff 3 comprehensive review of the National Security frame work for improved decision-making in defence matters.
- The Committee also recommended that the mechanisms established between the Defence Ministry and the Service Headquarters and the interface between them, should be holistically studied and reorganised.
- Based on Shri K Subrahmanyam Committee Report, a Group of Ministers (GoM) in 2001

recommended creation of the post of the Chief of Defence Staff.

- The Cabinet Committee on Security, in its decision dated 24th December 2019, had also approved the creation of the Department of Military Affairs.
- The creation of the 'Department of Military Affairs' (DMA) in the Ministry of Defence and the appointment of the Chief of Defence Staff as the Permanent Chairman of the Chiefs of Staff Committee (COSC) as well as the Secretary of the Department of Military Affairs.
- In addition, to provide Subject Matter Expertise, Officers from the three Armed Forces have also been appointed to the Department of Military Affairs.
- The Department of Military Affairs (DMA), by virtue of being a truly integrated department, will achieve better results at all levels through effective coordination between the Armed Forces and the Civil Services.
- This will help facilitate inter-service integration and better civilian-military coordination in the Nation's Higher Defence Organisation.
- It will also strengthen the process of Joint Planning, Operations and Procurement, thereby making Armed Forces more effective and efficient.
- Under this new Department, the Logistics structure is being fully revamped to make it more efficient.
- In this regard, three Joint Services Study Groups (JSSG) are developing common logistic policies for Services that will enhance all supply chain functions such as planning, procurement, inventory-maintenance, distribution, disposal and documentation.
- A concerted effort is being made to move forward from a Single Service approach to integrated planning and execution
- Ten subjects have been fixed for conducting joint training among the three Services.
- Of these, joint training has already started in five areas. •
- Keeping in mind the goal of 'Atma Nirbhar Bharat', Department of Military Affairs released the First Positive Indigenisation List of 101 items in August 2020 and the Second Positive Indigenisation List comprising of 108 items on 31st May 21.
- The work of establishing Theatre/Joint Commands is also progressing swiftly.
- Bring about reforms in the functioning of the three Services aimed at augmenting combat

capabilities by reducing wasteful expenditure.

- Promote use of indigenous equipment and usher self-reliance in the Defence Industrial Sector.
- Ensure optimal utilisation of Infrastructure and rationalise it through Jointness among the Services.
- Integrate and rationalise International Cooperation Plans of the Services in coordination with Ministry of External Affairs.
- Promote greater Jointness and Standardisation between the Services. Formulate Joint Promotion Policy for the Services.
- Promulgate Joint Staff Assignments for Career Progression and increase cross staffing.
- IVth Cadre review of the Armed Forces. Abolition of obsolete Rules and Acts.
- Review the terms of deployment of Territorial Army.

## THE HINDU

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### Geopolitics of Bay of Bengal

- Announced the opening of the Centre for Bay of Bengal Studies (CBS) at Nalanda University.
- The official launch of the CBS has once again demonstrated India's

commitment to advancing constructive agendas by forging connections and setting up platforms for all those with an interest in the Bay.

- CBS will offer collaborations in areas such as geo-economics and geopolitics, ecology, trade and connectivity, maritime security, maritime law, cultural heritage, and blue economy to generate opportunities for the Bay region.
- This will strengthen India's overall framework for maritime engagement, which aims to advance sustainable economic growth for all by fostering closer nautical ties.
- The Bay has long been a major commerce hub for the Indian Ocean.
- It created a conduit between the East and the West in terms for trade and culture.
- An Indo-Pacific orientation and the realignment of global economic and military power towards Asia have had a considerable impact on the Bay region.
- The key sea lanes of communication in this area are lifelines for global economic security and are crucial to the energy security that powers the economies of many countries in the region.
- Further, non-traditional dangers including terrorism and climate



change have become more prevalent.

- The Bay also provides an opportunity for greater regional cooperation in the environmentally friendly exploration of marine and energy resources.
- The Bay has a biodiverse marine environment.
- The Bay's ecosystem is going through an unprecedented crisis brought on by widespread environmental exploitation and geopolitical unrest.
- Species extinction is a result of careless exploitation of the maritime environment, which has severe consequences on biodiversity.
- Problems such as population growth, altered land use, excessive resource exploitation, salinization, sea level rise, and climate change are exerting significant strain on the Bay's environment.
- Operational discharge from small and medium feeder ships, shipping collisions, unintentional oil spills, industrial waste, pollution, and the accumulation of non-biodegradable plastic litter are all contributing to the deterioration of the Bay.
- A dead zone has formed as a result, and the mangrove trees that protect the shore from the fury of nature are under more threat than ever.
- It is essential that nautical neighbors develop a partnership and cooperate because of the maritime domain's interrelated and interdependent nature, transnational character, and cross-jurisdictional engagement of various governments and diverse organizations and enterprises.
- A few concerns that need immediate attention include expanding cooperation in maritime safety and security, enhancing cooperation on maritime connectivity and the ease of maritime transit, and boosting investment possibilities in the maritime connectivity sector.
- The latter subject involves addressing non-traditional threats and fostering group efforts to reduce illicit, unreported, and unregulated fishing
- Littoral governments need to support and promote skill-building, research, and training.
- Countries in the region will need to mobilise incentives and investments, manage oceanic affairs more effectively, and support people as they switch to alternative lifestyles.

## **THE HINDU**

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### **International law and Flooding**

- There has been an increase in the magnitude, the frequency and the

intensity of floods in many parts of the world.

- Flooding is still considered to be a natural phenomenon that cannot be entirely prevented.
- But it is compounded by the lack of transparency in the sharing of hydrological information and also information relating to activities (such as by one riparian state) that are transboundary in their effect (affecting other riparian states),

#### **On customary international law**

- In accordance with customary international law, no state has to use its territory in a manner that causes harm to another state while using a shared natural resource; this amounts to saying that there is a binding obligation on all states not to release water to cause floods in another co-sharer of the river water.
- This obligation gives rise to other procedural norms that support the management of floods, which include notification of planned measures, the exchange of data and information, and also public participation.
- The Brahmaputra and India's concerns Closer home, there is the case of China being the upper riparian in the Brahmaputra, which spans India and Bangladesh,

enjoying apparent leverage vis-à-vis lower riparian India.

- During the monsoon, flooding has been the recurrent feature in the last several decades in Assam.
- India faces other woes in the form of the construction of dams by China. China's excessive water release, as a "dam controller", in violation of customary international law has the potential to exacerbate flooding in Assam in future.
- India's main concern is that there is no comprehensive sub-basin or all basin-level mechanism to deal with water management of Brahmaputra.
- Neither India or China are party to the United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses (UNWC) 1997 or the United Nations Economic Commission for Europe (UNECE) on the Protection and Use of Transboundary Watercourses and International Lakes 1992 (Water Convention).
- The UNWC contains a direct reference to floods, which covers harmful conditions and emergency situations.
- Article 27 of the Convention says: "The Watercourse States shall, individually and, where appropriate, jointly, take all appropriate measures to prevent or mitigate

conditions ...that may be harmful to another watercourse States, whether resulting from natural causes or human conduct, such as floods or ice conditions, water-borne diseases, siltation, erosion, salt-water intrusion, drought or desertification.”

- In the absence of any mechanism, India relies on its memorandum of understanding (MoU) with China in 2013 with a view to sharing hydrological information during the flood season (June to September).
- The MoU does not allow India access to urbanisation and deforestation activities on the Chinese side of the river basin.
- With the MoU in the background, India by becoming a party to either the UNWC and the Water Convention could lay the groundwork for a bilateral treaty on the Brahmaputra.
- India, Nepal and flood prevention Floods are also a recurrent problem in the Koshi and Gandak river basins that are shared by India and Nepal.
- The intensity and magnitude of flooding is rising because of heavy seasonal precipitation as well as glacial retreat due to global warming and human-induced stressors such as land use and land cover changes

in the river basin area of Nepal (Terai) and Bihar.

- It is important that the two neighbours view the river basins as single entities, which will help in facilitating an integrated approach for improved basin and flood risk management.
- The India-Nepal Koshi agreement 1954 (revised in 1966) is aimed at reducing devastating flooding in the river basin. The treaty-based joint bodies have also tried to refine the early warning systems for flood forecasting.

#### **THE HINDU**

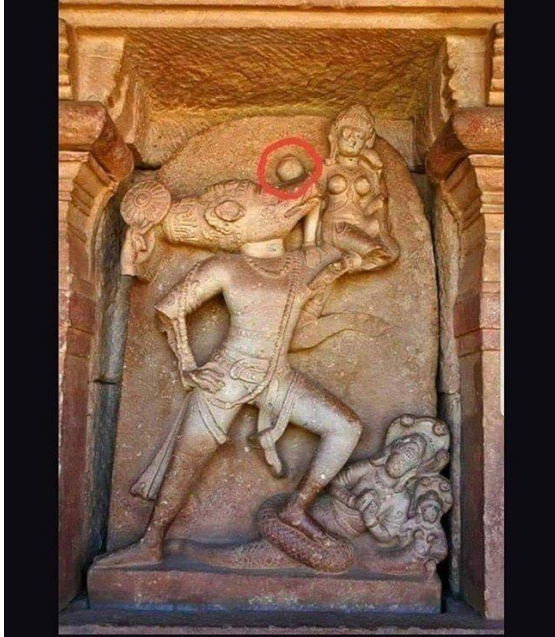
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#### **Buddhist caves in Bandhavgarh**

- The Archaeological Survey of India (ASI) earlier this year discovered Buddhist caves and stupas, and Brahmi inscriptions, dating back to the 2nd century, and Hindu temples from the 9th-11th centuries, and possibly the world's largest Varaha sculpture also dating to the same period, at the Bandhavgarh Tiger Reserve in Madhya Pradesh.

#### **THE HINDU**

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This 8th Century Statue of Sri Varaha Swamy is in Durga Vishnu Temple, Aihole, Bagalkot District, Karnataka  
In this statue Indian sculptors shown the 'Earth in Round Shape' 800 years earlier than Galileo!!  
So no foreign scientist is greater than the Sanatana Hindus !!?

GES  
REPORTER

## US IN PACIFIC ISLANDS

- The United States announced \$810 million in new funding for Pacific islands at a summit with President Joe Biden amid inroads by China in the strategic but sparsely populated region.
- \$600 million will be in the form of a 10-year package to clean up and develop dirty waters to support the tuna industry, while the United States will also expand climate and development aid and its diplomatic presence.
- China has asserted itself strongly in recent years through investment, police training and, most controversially, a security pact with the Solomon Islands.
- The Biden administration also announced that the United States would recognise Cook Islands and Niue, a self-governing territory whose foreign and defence policies and currency are linked to New Zealand.
- The step will allow the United States to increase its diplomatic footprint in the Cook Island and Niue, which have fewer than 20,000 inhabitants.
- Western officials and analysts fear that Beijing will use the Solomon Islands as a base to expand militarily into the Pacific.
- The United States and the Region U.S. Indo-Pacific Command, based in Hawaii, encompasses the Pacific Islands as part of its area of responsibility.
- The U.S. military has air and naval bases on Guam and operates the Ronald Reagan Ballistic Missile Defense Test Site at Kwajalein Atoll in the Marshall Islands.
- The Department of Defense is building a high-frequency radar system in Palau.
- The U.S. military has ties with Fiji, PNG, and Tonga, the only PICs with regular armed forces.
- The Biden Administration's Indo-Pacific Strategy (February 2022) states that the United States "will work with partners to establish a multilateral strategic grouping that supports Pacific Island countries as they build their capacity and resilience as secure, independent actors."

### China's Influence

- China has become a significant actor in the region through diplomacy and economic engagement.
- The PRC is an important market for PIC natural resource exports and tourism. China's fishing fleet in the



region has contributed significantly to IUU fishing.

- Ten PICs have joined China's Belt and Road Initiative, which promotes PRC-backed infrastructure development.
- In May 2022, the PRC proposed a sweeping diplomatic, economic, and security pact between China and the region that met resistance among some PICs and was shelved.

## THE HINDU

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### UNESCO LISTS INDIAN TEXTILE

- UNESCO released a list of 50 exclusive and iconic heritage textile crafts of the country.
- Toda embroidery and Sungadi from Tamil Nadu, Himroo from Hyderabad, and Bandha tie and dye from Sambalpur in Odisha were some of the textiles that made the cut
- According to UNESCO, one of the major challenges to the safeguarding of Intangible Cultural Heritage in the South Asia is the lack of proper inventory and documentation.
- The publication, which aims to bridge this gap, brings together years of research on the 50 selected textiles.
- Some of the iconic handcrafted textiles documented from north

India are Khes from Panipat, Chamba rumals from Himachal Pradesh, Thigma or wool tie and dye from Ladakh, and Awadh Jamdani from Varanasi.

- Finding a place from the south, Ilkal and Lambadi or Banjara embroidery from Karnataka, Sikanayakanpet Kalamkari from Thanjavur have been included.
- Kunbi weaves from Goa, Mashru weaves and Patola from Gujarat, Himroo from Maharashtra and GaradKoirial from West Bengal also find a place among the 50 iconic textiles.

## THE HINDU

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### FLOOD AND CORRUPTION

- We must decongest the city, plant more trees, save wetlands, even reclaim them, desilt drains, enlarge sewers, deconcretise pavements and stop the clogging of waterways with unsegregated garbage.
- The State government announced tough measures such as the demolition of unauthorised encroachments impeding drainage streams in the city, but quickly backed away. It now plans to divert drains to avoid already built-up areas.



- Corruption cripples economic growth in ways not readily apparent.
- Apart from transferring inordinate wealth to the undeserving, it creates a slew of vested interests, who resist anti-corruption process reforms.
- Our narrow, legal definition of corruption enables many in a corrupt system to escape culpability.
- Indian law recognizes only corrupt acts by public servants to be 'acts of corruption' under the law.
- As private corruption is not criminalised, many government actions are outsourced to private agents, who collect 'handling fees' on behalf of their partners in crime within the government.
- E-Governance is often not the effective solution as claimed. E-enabled systems often only relocate the locus of corruption; they do not solve all of it.
- First, regular assessments and evaluations of ongoing anti-corruption measures
- Second, a genuine regime of whistleblower protection assures honest citizens, politicians, bureaucrats and judges of protection, as they otherwise fear the adverse repercussions for uncovering illegal activities

- Third, there has to be a conscious move towards promoting ethical behavior.

## **THE HINDU**

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### **DRAFT Telecommunication bill 2022**

- Why has the government issued a draft Telecommunication Bill?
- Through the Indian Telecommunication Bill, 2022, the Centre aims to consolidate and amend the existing laws governing the provision, development, expansion and operation of telecommunication services, telecom networks and infrastructure, in addition to assignment of spectrum.
- What are some of the key amendments to existing telecom laws?
- One of the key changes is inclusion of new-age over-the-top communication services like WhatsApp, Signal and Telegram in the definition of telecommunication services.
- As per the draft law, providers of telecommunication services will be covered under the licensing regime, and will be subjected to similar rules as other telecom operators.

- This issue has been under contention for several years now with telecom service providers seeking a level-playing field with OTT apps over communication services such as voice calls, messages, etc. where operators had to incur high costs of licences and spectrum, while OTT players rode on their infrastructure to offer free services.
- Are there other areas where the government has proposed to increase its powers?
- The Centre is also looking to amend the Telecom Regulatory Authority of India Act (TRAI Act) to dilute the sectoral watchdog's function of being a recommendatory body.
- The current TRAI Act mandates the telecom department to seek the regulator's views before issuing a new licence to a service provider. The proposed Bill does away with this provision
- It has also removed the provision that empowered TRAI to request the government to furnish information or documents necessary to make this recommendation.
- Additionally, the new Bill also proposes to remove the provision where if the DoT cannot accept TRAI's recommendations or needs modification, it had to refer back the recommendation for reconsideration by TRAI.
- Does the proposed Telecom Bill also look to address issues being faced by the telecom industry?
- The DoT has also proposed that if a telecom entity in possession of spectrum goes through bankruptcy or insolvency, the assigned spectrum will revert to the control of the Centre.
- So far, in insolvency proceedings, there has been a lack of clarity on whether the spectrum owned by a defaulting operator belongs to the Centre, or whether banks can take control of it.
- The draft Bill also accords the Centre powers to defer, convert into equity, write off or grant relief to any licensee under extraordinary circumstances, including financial stress, consumer interest, and maintaining competition, among other things.
- It also proposes to replace the Universal Service Obligation Fund (USOF) with the Telecommunication Development Fund (TDF).
- USOF is the pool of funds generated by the 5 per cent Universal Service Levy that is charged upon all telecom fund operators on their Adjusted Gross Revenue.

- The USOF has largely been used to aid rural connectivity. However, with the TDF, the objective is also to boost connectivity in underserved urban areas, R&D, skill development, etc.

### SC on abortion

- The Supreme Court in a significant judgment on Thursday said it is unconstitutional to distinguish between married and unmarried women for allowing termination of pregnancy on certain exceptional grounds when the foetus is between 20-24 weeks.
- What is the court's decision?
- A three-judge Bench comprising Justices D Y Chandrachud, A S Bopanna, and J B Pardiwala framed the interpretation of Rule 3B of the Medical Termination of Pregnancy Rules, 2003, as per which only some categories of women are allowed to seek termination of pregnancy between 20-24 weeks under certain extraordinary circumstances.



### What does the law on abortion say?

- The Medical Termination of Pregnancy Act allows termination of pregnancy by a medical practitioner in two stages.
- After a crucial amendment in 2021, for pregnancies up to 20 weeks, termination is allowed under the opinion of one registered medical practitioner. For pregnancies between 20-24 weeks, the Rules attached to the law prescribe certain criteria in terms of who can avail termination.
- It also requires the opinion of two registered medical practitioners in this case.
- For pregnancies within 20 weeks, termination can be allowed if:
- The continuance of the pregnancy would involve a risk to the life of the

pregnant woman or of grave injury to her physical or mental health; or

- There is a substantial risk that if the child was born, it would suffer from any serious physical or mental abnormality.
- Who falls in the category of women allowed to terminate a pregnancy between 20-24 weeks?
- For pregnancies between 20-24 weeks, Section 3B of the Rules under the MTP Act lists seven categories of women:
- Survivors of sexual assault or rape or incest; (b) minors; (c) change of marital status during the ongoing pregnancy (widowhood and divorce); (d) women with physical disabilities (major disability as per criteria laid down under the Rights of Persons with Disabilities Act, 2016); (e) mentally ill women including mental retardation; (f) the foetal malformation that has substantial risk of being incompatible with life or if the child is born it may suffer from such physical or mental abnormalities to be seriously handicapped; and (g) women with pregnancy in humanitarian settings or disaster or emergency situations as may be declared by the Government.”

### **What is the court’s interpretation?**

- The court stated that the whole Rule 3B(c) cannot be read in isolation but has to be read together with other sub-clauses under 3B.
- When other sub-clauses do not distinguish between married or unmarried women, for example survivors of sexual assault, minors, etc., only 3B(c) cannot exclude unmarried women, the court hel
- “Rule 3B(c) is based on the broad recognition of the fact that a change in the marital status of a woman often leads to a change in her material circumstances. A change in material circumstance during the ongoing pregnancy may arise when a married woman divorces her husband or when he dies, as recognized by the examples provided in parenthesis in Rule 3B(c). The fact that widowhood and divorce are mentioned in brackets at the tail end of Rule 3B(c) does not hinder our interpretation of the rule because they are illustrative,” the court said.
- The court also expanded on Rule 3B (a) “survivors of sexual assault or rape or incest” to include married women in its ambit. Although it does not have the effect of striking down the marital rape exception under the Indian Penal Code, the ruling said

that even women who have suffered “marital assault” can be included under the provision.

### What is the effect of the judgment?

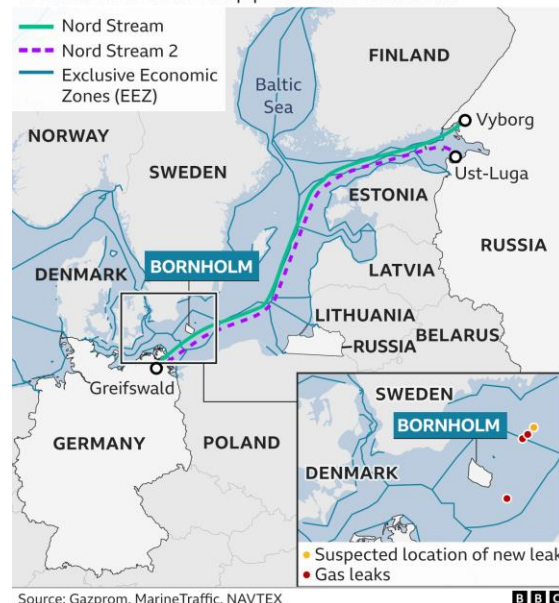
- The court’s “purposive interpretation” states that the common thread in Rule 3B is “a change in a woman’s material circumstance”.
- While the ruling recognises the right of unmarried women, it leaves the enforcement of the right to be decided on a case-to-case basis.
- “It is not possible for either the legislature or the courts to list each of the potential events which would qualify as a change of material circumstances.

### Nord Stream

- The North Atlantic Treaty Organisation or NATO has called the Nord Stream pipeline leaks in the Baltic Sea deliberate acts of sabotage.
- Leaks in two gas pipelines Nord Stream 1 and Nord Stream 2 off Nato member Denmark and would-be member Sweden in international waters in the Baltic Sea have raised concerns amid the ongoing Russia-Ukraine war.

### Nord Stream pipelines from Russia

Leaks detected on both pipelines near Bornholm



### About Nord stream

- Nord Stream is a pair of offshore natural gas pipeline sets in Europe that run under the Baltic Sea from Russia to Germany.
- It includes the Nord Stream 1 pipeline running from Vyborg in northwestern Russia, near Finland, and the Nord Stream 2 pipeline running from Ust-Luga in northwestern Russia, near Estonia.
- Both pipelines run to Lubmin in the northeastern German state of Mecklenburg-Vorpommern. Nord Stream 2 has been denied certification as a result of the Russian invasion of Ukraine.
- The name "Nord Stream" occasionally refers to a wider pipeline network, including the



feeding onshore pipeline in Russia, and further connections in Western Europe.

- Nord Stream 1 is owned and operated by Nord Stream AG, whose majority shareholder is the Russian state company Gazprom. Nord Stream 2 is owned and planned to be operated by Nord Stream 2 AG, which is a wholly-owned subsidiary of Gazprom.
- The first line of Nord Stream 1 was laid by May 2011 and was inaugurated on 8 November 2011.
- The second line of Nord Stream 1 was laid in 2011–2012 and was inaugurated on 8 October 2012.
- At 1,222 km (759 mi) in length, Nord Stream 1 is the longest sub-sea pipeline in the world, surpassing the Norway-UK Langeled pipeline.
- The laying of Nord Stream 2 was carried out in 2018–2021. [7] The first line of Nord Stream 2 was completed in June 2021, and the second line was completed in September 2021.
- According to data from 2015, Germany imported about 40% of natural gas from Russia, 29% from the Netherlands, 34% from Norway, with only around 10% from Germany's own gas fields.
- According to a media report, about a quarter of Germany's electricity now

comes from coal, about another quarter from renewables, 16% from natural gas and around 11% from nuclear energy.

- The dispute over Nord Stream 2 takes place at a time when Germany has set out a plan to shut down its nuclear and coal power plants, with an objective of gradually moving towards renewable sources of energy.
- In order to fill the supply gap and diversify the sources, the country plans to build its first LNG terminal to receive gas from Qatar, the U.S., and others.

**THE HINDU**

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