

Current Affairs Update (Sep 25-Oct 7)

National

CSR Policy Amendment Rules 2022

MCA (Ministry of Corporate Affairs) has released Companies (CSR Policy) Amendment Rules 2022.

New Rules:

- Unspent CSR amount must be utilized **within 3 years**
- Mandatory constitution of **CSR committee** to implement CSR works
- Amount Spent for Social Impact Assessment (SIA) to **not exceed 2.5% of total CSR** or Rs 50 lakh. SIA has been made mandatory for businesses with **Rs 10cr or more** CSR budget or for projects with an outlay of **Rs 1 cr or more**
- **Transparency:** Companies are to disclose the composition of the CSR Committee and CSR policy on the company website.

About Corporate Social Responsibility (CSR):

- It is a corporate initiative to assess and take responsibility for the company's effects on the environment and on social welfare.
- The rules in **Section 135 of India's Companies Act 2013** make it mandatory for companies (with an **annual turnover of 1,000 crores and more, or a net worth of Rs. 500 crores and more, or a net profit of Rs. 5 crores and more**) to **spend 2% of their average net profit** for the past three years on CSR.
- India is the **first country** in the world to **mandate CSR spending** along with a framework to identify potential CSR activities.

Issues with the Semiconductor chipmaking industry

- **Shortage of chips:** Due to Pandemic induced closure of factories, US-China tension in Taiwan, the Russia-Ukraine war disrupting the Supply chain, and rising demand.
- **The chip-making industry is a highly-concentrated one:** 90% of 5nm (nanometre) chips are mass-produced in Taiwan, by the Taiwan Semiconductor Manufacturing Company (TSMC).

So, governments all over the world are trying to create their domestic chip-making industry.

What are the challenges?

1. High Investments Required: one semiconductor fab requires an investment of anywhere between \$3 and \$7 billion
2. Minimal Fiscal Support from Government.
3. Lack of Fab Capacities.
4. Insufficient Grants under PLI Scheme.
5. Resource Inefficient Sector.
6. Chip production is a resource-intensive and expensive process
7. Chip-making also requires gallons of **ultrapure water** in a single day

Weather warnings

The top weather body in India, the Indian Meteorology Department (IMD) is tasked with identifying and issuing warnings for adverse weather events, relying on a system of colour-coded weather warnings to do so.

The IMD's four colour codes are:

- **Green (pre-cyclone watch):** This code means that “**all is well**”, there is no likelihood of any adverse weather-related and there are no advisories issued.
- **Yellow (cyclone alert):** The colour yellow signals authorities to “**be aware**” or **on their guard**, with the likelihood of severely bad weather that could last several days at a stretch, while also suggesting that the weather could take a turn for the worse and upset daily activities.
- **Orange (Cyclone warning):** Meaning “**Be prepared**”, the IMD issues the orange alert as a warning for extremely bad weather, electricity blackouts and the possibility of communication disruptions, including road and rail closures.
- **Red (during or post-landfall outlook):** The IMD issues the highest level of warning—indicating authorities should “**take action**”—only when it is guaranteed that bad weather is going to upend travel and power and pose a significant risk to life.

These warnings are based on ‘the probability of occurrences and ‘impact assessment’. The point of the exercise is to give authorities and people likely to be impacted **enough forewarning to be prepared to meet harsh or hazardous weather** that has the potential to wreak severe damage, disrupt daily life or cause loss of life. The warnings are updated daily.

UPSC Mains 2022 Q. Discuss the meaning of colour-coded weather warnings for cyclone-prone areas given by the India’s Meteorological department. (150 words)

Avalanche Monitoring Radar

The Indian Army and the Defence Geoinformatics and Research Establishment (DGRE) have jointly installed the **Avalanche Monitoring Radar**, the first of its kind in India, in north Sikkim

An avalanche is a rapid flow of snow down a slope, such as a hill or a mountain. Avalanches can be set off spontaneously, by such factors as increased precipitation or snowpack weakening, or by external means such as humans, animals, and earthquakes.

Benefits of Avalanche Monitoring Radar:

- Detection of avalanches (within **3 seconds** of the trigger) and landslides.
- Assist in **saving valuable life** of troops and civilians as also vehicles in super high altitude areas

DGRE is the Defence Research and Development Organisation's wing involved in forecasting and mitigating avalanche hazards faced by the Indian Army in the Himalayan region.

Importance of Bay of Bengal

- **Commerce hub:** It is a major commerce hub for the Indian Ocean.
- **Connects east to west:** It creates a conduit between the East and the West in terms of trade and culture.
- **Key sea lanes of communication:** They are lifelines for global economic security. Sea lanes are crucial to the energy security that powers the economies of many countries in the region.
- **Regional cooperation:** It provides an opportunity for greater regional cooperation in the environmentally friendly exploration of marine and energy resources.
- **Biodiversity:** The Bay has a biodiverse marine environment.
- **Home to many rare and endangered marine species and mangroves:** which are essential to the survival of the ecology and the fishing sector.

Sittanavasal

- It is considered by historians to be one of the **oldest inhabited areas in the district** and a major centre of **Jain influence**.
- This is the only place in Tamil Nadu where we can see **Pandya paintings**.
- The artwork on the ceiling of the sanctum and the **Ardha mandapam of Arivar Kovil is an early example of post-Ajanta cave paintings** of the fourth to sixth centuries, done using the fresco-secco technique.
- The ceiling paintings show '**bhavyas**' (**exalted souls who work to achieve moksha or spiritual liberation**) enjoying themselves in a pool, full of blooming lotuses; today much of it is obscured by patchy plastering.

Operation Megh Chakra

- The Central Bureau of Investigation (CBI) conducted searches across 20 States and one Union Territory, as part of a pan-India drive against the circulation and sharing of **Child Sexual Abuse Material (CSAM)**.
- **Megh Chakra**: The operation code named “**Megh Chakra**” is being carried out following the inputs received from Interpol’s Singapore special unit based on the information received from the authorities in New Zealand.
- **Operation Carbon**: similar exercise by CBI, in which the suspects in 13 States and one Union Territory were raided

Operation Garuda

- The Central Bureau of Investigation has launched a **multi-phase ‘Operation Garuda’** against illicit drug trafficking network, registering 127 new cases, arresting 175 people and seizing huge quantities of narcotic drugs.
- A CBI release said the operation seeks to **disrupt, degrade and dismantle drug networks with international linkages through rapid exchange of criminal intelligence** on drug trafficking and coordinated law enforcement actions across international jurisdiction through Interpol.
- This global operation was initiated in close coordination with **Interpol and Narcotics Control Bureau**, for combating the smuggling of illicit drugs and psychotropic substances, with special focus on Indian Ocean region.

Single women get equal abortion rights

In a historic judgment, the Supreme Court allowed **unmarried and single women** whose pregnancies are between **20 and 24 weeks** to access safe and legal abortion care on par with their married counterparts.

Key Highlights:

- **The rights of reproductive autonomy under Article 21**: It gives an unmarried woman the right of choice as to whether or not to bear a child on a similar footing as that of a married woman,” court held.
- **Violation of the right to equality before law and equal protection (Article 14)**: Prohibiting single or unmarried pregnant women while allowing married women with the same term of pregnancy.

The MTP Act 1971 and The MTP Act Amendments 2021

	MTP Act 1971	The MTP Amendment Act 2021
Indications (Contraceptive failure)	Only applies to married women	Unmarried women are also covered
Gestational Age Limit	20 weeks for all indications	24 weeks for rape survivors Beyond 24 weeks for substantial fetal abnormalities
Medical practitioner opinions required before termination	One RMP till 12 weeks Two RMPs till 20 weeks	One RMP till 20 weeks Two RMPs 20-24 weeks Medical Board approval after 24 weeks
Breach of the woman's confidentiality	Fine up to Rs 1000	Fine and/or Imprisonment of 1 year

Live streaming of SC hearing

SC will live stream the constitutional bench hearing from September 27, as a part of 3rd phase of e-courts projects (use of information technology in Judiciary)

Benefits:

- Will ensure Transparency and public scrutiny
- Will help in de-congestion of courts
- Improve physical access for litigants and trust of people in the judiciary
- Help in legal research and training
- Encourage legal awareness

Issues:

- Digital divide
- Lack of ICT infrastructure
- Lack of digitally trained court officials
- Risk of privacy breach
- Risk of the case getting sensationalised.

Recommendations for improving the functioning of CBI and CVC

- **Amendment:** The CVC Act should be amended, providing for a **five/seven-member CVC**, which could broadly assume the role visualized for the **Lokpal**.
- **Prevent favouritism in selection:** The selection process to be more broad-based to prevent favouritism or from controversial persons being appointed.
- **CVC should constitute an advisory committee:** Consisting of at least 11 members drawn from **criminologists** and **forensic science experts**.
- **Expert or professional assistance:** CVC should be given the power to go to any expert or professional to assist it in screening complaints.
- **No permission from the government:** After assessing a complaint by broad-based CVC, there should be no need to seek prior permission from the government.
- **CBI should be made functionally and financially independent:** Of the controls of any government ministry/department. The professional supervision over the investigations of the **CBI should rest only with the CVC**.
- **Manner of the appointment of the CBI Director:** It should be broad-based as in the case of the CVC members.
- **Better synergy between anti-corruption laws and grievance handling:** The laws relating to whistleblowers and grievance redressal should be placed within the jurisdiction of the CVC.

New Chief of Defense Staff (CDS)

- The Government appointed former Eastern Army Commander Lt. General Anil Chauhan as the next **Chief of Defense Staff (CDS)**.
- The next Chief of Defense Staff (CDS) shall also function as **Secretary** to the Government of India, **Department of Military Affairs**.
- CDS acts as the **permanent Chairman** of the Chiefs of Staff Committee which will also have **three service chiefs as members**.

Financing poll promises

The **ECI** wrote to parties proposing that they spell out **ways and means** of raising additional resources to **finance** the promises.

Key Highlights:

- **ECI prescribed a standardized disclosure proforma:** To declare quantification of the physical coverage of the schemes promised, financial implications of the promise and availability of the financial resources.
- **Additional resources to finance schemes:** The parties will have to detail how they propose to raise the additional resources to finance the schemes.

- **Explain the impact of the additional resource raising plan:** On fiscal sustainability of the State or the Union Government.
- **Amendment to MCC:** EC plans to propose an amendment to the relevant clauses in the Model Code of Conduct.

Government Initiatives to address Mental Health issues

- **Constitutional Provision:** The right to Health (including mental healthcare) is a fundamental right under Article 21 of the Constitution.
- **National Mental Health Program (NMHP)** (To address the huge burden of mental disorders and shortage of qualified professionals)
- **Mental HealthCare Act 2017**(Guarantees every affected person access to mental healthcare and treatment from services run or funded by the government)
- **Kiran Helpline**(Ministry of Social Justice and Empowerment (2020) launched a 24/7 toll-free helpline)

YUVA 2.0-PM's Scheme

The **Ministry of Education**, Department of Higher Education launched **YUVA 2.0 – Prime Minister's Scheme for Mentoring Young Authors**.

Key Highlights:

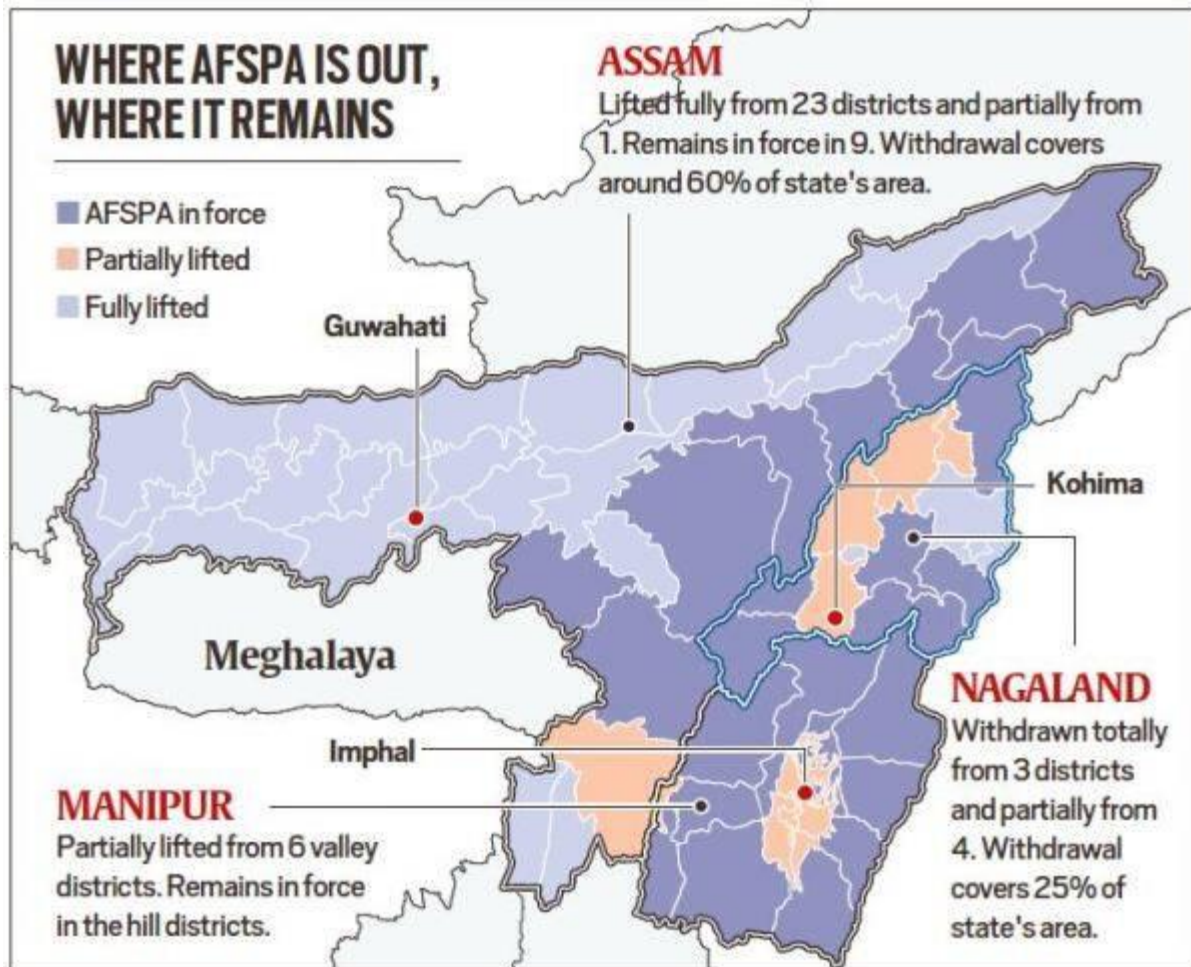
- **Author Mentorship programme:** To train young and budding authors (**below 30 years of age**) in order to promote reading, writing and book culture in the country.
- **YUVA 2.0:** It is a part of the **India@75**
- **THEME:** 'Democracy (institutions, events, people, constitutional values – past, present, future)' in an innovative and creative manner.

AFSPA

- The **Ministry of Home Affairs (MHA)** has extended the **Armed Forces (Special Powers) Act (AFSPA)** in parts of **Arunachal Pradesh** and **Nagaland** for another six months.
- Currently, the **Union Home Ministry** issues periodic "**disturbed area**" notification to extend AFSPA only for **Nagaland and Arunachal Pradesh**.
- **State government:** The **notification for Manipur and Assam** is issued by the **State governments**.

Revoked:

- **Tripura:** revoked the Act in 2015
- **Meghalaya:** revoked by the MHA from 1st April 2018.



International

Nord Stream pipelines

Nord Stream 1 subsea pipeline:

- Nord Stream 1 was completed in 2011 and runs from Vyborg in Leningrad (Russia) to Lubmin near Greifswald, Germany.
- **Majority ownership:** The Russian state-owned gas company Gazprom has a majority ownership in the pipeline
- **According to Bloomberg:** 40% of Europe's pipeline gas came from Russia before the war(now 9%).

Nord Stream 2:

- This is a **1,200-km pipeline** that runs from **Ust-Luga in Russia to Greifswald in Germany** through the Baltic Sea.
- It will carry **55 billion cubic meters** of gas per year.
- The Nord Stream crosses the **Exclusive Economic Zones (EEZs)** of several countries including: **Russia, Finland, Sweden, Denmark, and Germany**. Territorial waters of: **Russia, Denmark, Germany**

India's Stand at SCO Summit

In the recently concluded SCO summit in the historic city of Samarkand talked about the ideal world order. **India's Stand:**

- **Now is not an era of war:** India bluntly told Russia that this was not the time for war and that the war must stop.
- **Diplomacy and democracy:** It was the only country to demand a cessation of all hostilities and want diplomacy and democracy.
- **Other issues discussed by India:**
 - The oil crisis
 - Looming food scarcity
 - The disruption of supply chains
 - Transit trade access
- **On Pakistan:** Pakistan should give India transit trade access by land to **Afghanistan and Central Asia**.

India's stand on UNSC

Theme of the 77th General Assembly: "A watershed moment: Transformative Solutions to Interlocking Challenges". India's stand:

- **Reformed multilateralism:** India's call for structural overhaul of the UNSC must incorporate institutional accountability.
- **Wider representation of the developing countries:** Growing stakes of developing countries in the Security Council could foster trust and leadership across the world.

The UN's faultlines:

- **Unable to prevent wars:** UN-led multilateralism has been unable to provide strong mechanisms to prevent wars.

- **China's rise and aggression:** Through its actions in the **South China Sea**, the **Indo-Pacific region** etc have also underscored the limitations of UN-style multilateralism.

Steps taken by India for Reforms in UN:

- **G4:** Ministerial meeting of the **G4 (Brazil, India, Germany and Japan)**.
- **69:** Meeting of the Indian delegation with the **L.69 Group**(membership spread over Asia, Africa, Latin America, Caribbean and Small Island Developing States)

Seti River project

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**.

Benefit of this project for India:

- **Geopolitical influence of China:** It will help India minimize the Chinese influence and firm its presence in Nepal. The **West Seti Hydroelectric Project** was a **major Chinese venture under the Belt and Road Initiative**.
- **Cross-border exchange:** The project has the potential to enhance cross-border power exchanges between the two countries.
- **Growing energy demand:** The **West Seti Hydroelectric Project** can provide an added alternative and viable way to address power deficits.

Italy's first female premier

- Giorgia Meloni, the leader of the far-right political party Brothers of Italy, is set to become the first female premier of Italy.

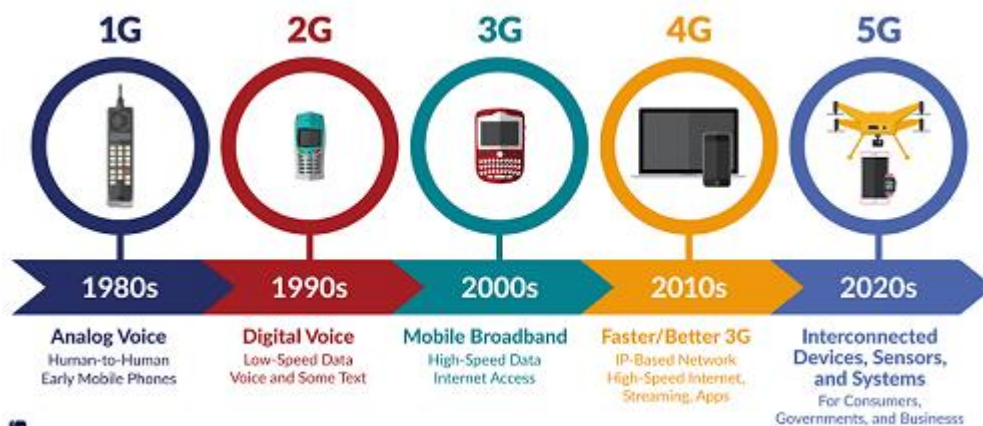
Science-Tech & Environment

C-Band

- India's Aviation safety regulator (DGCA) has written to the telecom department flagging concerns over the likely interference of the **5G C-Band spectrum** with aircraft radio altimeters.
- **A radio altimeter** is an instrument that provides direct height-above-terrain information to various aircraft systems. These altimeters as well as a part of the 5G telecom services operate in the C-Band and therefore risks interference.
- For telecom service providers, the C-Band presents a sweet spot for rolling out 5G services, ensuring coverage as well as high bandwidth, resulting in faster internet speeds. For aircraft

operations, the use of altimeters in this band ensures highly precise measurements of the plane's altitude.

- However, experts say, India has auctioned the C-Band spectrum in frequency ranging from **3.3 GHz to 3.6 GHz**. Aircraft radio altimeters mainly use frequencies ranging from **4.2-4.4 GHz**. So, there is a significant **500 MHz gap** between the two frequency ranges.



Rotterdam Convention

- International trade of two new hazardous pesticides — Iprodione and Terbufos — has been recommended for “**prior informed consent**” (PIC) procedure under the Rotterdam convention. The chemicals are dangerous for humans and aquatic animals.
- The Rotterdam Convention is an international treaty designed to facilitate informed decision-making by countries with **regard to trade in hazardous chemicals**.
- **Terbufos is a soil insecticide** used commonly on sorghum, maize, beet and potatoes. It has also been found to pose risk to aquatic organisms due to its toxicity.
- In India, the use of these chemicals was permitted by the 2015 **Anupam Verma committee report**. The country is among the largest exporters of Terbufos.
- **Iprodione, a fungicide** used on vines, fruits, trees and vegetables, has been classified as carcinogenic and toxic for reproduction.

Integrated Cryogenic Engine Manufacturing Facility (ICMF)

- President **Droupadi Murmu** inaugurated Hindustan Aeronautics Limited's (HAL) **Integrated Cryogenic Engine Manufacturing Facility (ICMF) in Bengaluru**.
- The ICMF is dedicated to **Rocket Manufacturing** and its assembly for ISRO. The facility will boost **self-reliance in the manufacturing of high-thrust rocket engines**.
- On January 5, 2014, India successfully flew **GSLV-D5 with a cryogenic engine** (made by ISRO through private industries) and **became the sixth country in developing cryogenic engines**.



New Target under National Clean Air Programme

- The Indian Government has set a new target of **40 per cent reduction** in the particulate matter concentration by 2026 in cities under the NCAP.
- This is an update of the earlier goal of **20 to 30 per cent reduction** of particulate matter concentration by 2024.
- According to the Environment Ministry, 95 of the 131 non-attainment cities covered under the NCAP have reduced their PM10 levels in 2021 when compared with the 2017 levels.
- The NCAP was **launched in 2019** as the first-ever national framework for air quality management with time-bound reduction target. It aims to bring down the concentration of **PM10 and PM2.5** across India with 2017 as the base year for the comparison of concentration of the pollutants.

Swachh Vayu Sarvekshan

- MoEFCC will rank **131 cities** on the efforts to reduce air pollution (and not on the measurement of air quality parameters)
- Previously, City Action plans were prepared as part of **NCAP (national clean air programme, 2019)** for reducing air pollution up to **40% by 2025-26**.
- The Sarvekshan will pick up **three best performing cities** from each category (population more than 10 lakh, between 3-10 lakh and less than 3 lakh) and will be given cash awards.
- NCAP aims to **reduce Particulate Matter (PM2.5 and PM10) concentration by 20% by 2024**, with **2017** as the base year for comparison.

Government steps for defence manufacturing exports

- **FDI limit raised to 74%**
- **Defence corridors established in UP and TN**
- **Innovation for Defence Excellence (iDEX) initiative etc.**
- **Mission Raksha Gyan Shakti:** It will boost Intellectual Property culture in defence.
- **Defence Acquisition Procedure (DAP) 2020:** To promote Make in India and AtmaNirbharta in Defence.
- **Agreements:**g. India signed an agreement with the Philippines for the supply of an anti-ship variant of **BrahMos Supersonic cruise missile**.
- **Indigenization:** Indigenous Advanced Light Helicopter Mk-III's squadron commissioned recently, aircraft carrier INS Vikrant, new generation nuclear-capable ballistic missile 'Agni P'.

Use of technology in Agriculture

- **Seed quality enhancing: High-yielding varieties and genetically engineered seeds (BT Cotton)** lead to efficient use of pesticides, water, etc and can increase yields.
- **Efficiency in farm inputs:**
 - **Water:** drip irrigation technology, use of sensors for moisture control, sprinklers for irrigation.
 - **Fertilizers and pesticides:** fertilizer sensors, drones for spraying pesticides
 - **Efficient input data:** Kisan suvidha portal, M-Kisan
 - **Electricity:** Solar-powered water pumps.
 - **Labour:** Mechanization of harvest led to improved labour productivity.
- **Harvest management:**
 - **PUSA Biodecomposer-** for dealing with stubble/crop residue
 - **Agricultural waste is used as input for bioethical production.**

DART

- In the first-of-its-kind, save-the-world experiment, NASA's **Double Asteroid Redirection Test (DART) spacecraft will crash into** a small moonlet called **Dimorphos**.
- The impact of the collision should be just enough to nudge the asteroid into a slightly tighter orbit around its companion space rock — demonstrating that if a killer asteroid ever heads our way, we'd stand a fighting chance of diverting it.

Madhav National Park (MNP)

60 years after they were last seen, tigers are being reintroduced to Madhya Pradesh's Madhav National Park.

About MNP:

- **Location:** Shivpuri District, Madhya Pradesh.
- It was the **hunting ground** of Mughal emperors and Maharaja of Gwalior.
- **Ecosystem:** It has a diverse ecosystem consisting of lakes (**Sakhya Sagar and Madhav Sagar**), dry deciduous & dry thorn forests.
- **Tiger Corridor:** It is part of the **Ranthambhore-Kuno-Madhav** (Madhya Pradesh and Rajasthan) Tiger Corridor of Central India & Eastern Ghats landscape.
- Home to **Particularly Vulnerable Tribal Groups** (PVTG)s like Saharia

Khosta-2

Khosta-2 **variant of coronavirus** found in Russian bats in **Sochi National Park**. The zoonotic virus is capable of infecting humans. This is unlike the Khosta-1, which is also found in Russian bats but cannot easily spread to humans. Sochi National Park is UNESCO world heritage site in Russia. Established in 1983, it is the oldest national park in Russia.

AVGAS 100 LL

- **Indigenously developed** special aviation fuel AVGAS 100 LL was launched by the Indian Government.
- AVGAS 100 LL was indigenously developed by the **Indian Oil Corporation** for the piston engine aircrafts and unmanned aerial vehicles.
- This indigenously developed fuel is a blue aviation gasoline with a **high octane number**, which measures the fuel's ability to resist compression without bursting.
- The IOC's newly developed aviation fuel would provide for the requirements of India's aviation industry, which is witnessing an increased footfall in airports, increased number of aircraft and Flying Training Organizations (FTOs) for pilot training.
- It will be produced in Indian Oil's refinery in **Vadodara, Gujarat**.

What is LiFE?

- LiFE (Lifestyle for the Environment) was launched on June 5, 2022 on the occasion of World Environment Day to harness the power of individual and collective action to address the global climate crisis.
- It was introduced by Prime Minister Narendra Modi at the COP26 in Glasgow, Scotland.
- This concept advocates for a mindful and deliberate utilization of resources as opposed to "mindful and wasteful consumption".

- It aims to create a global movement towards the adoption of simple and specific climate-friendly behaviours in daily life.
- The LiFE seeks to make such daily actions an integral part of collective social norms and promote sustainable development of the overall global community. It will deploy behavioural techniques like nudges, social and behaviour change communication to achieve its goals.

IMEI number

- The Department of Telecommunications (DoT) has made it mandatory for mobile phone manufacturers to register the **International Mobile Equipment Identity (IMEI)** – the 15-digit numbers that uniquely identify each mobile device – of all handsets made in India with the government.
- The IMEI is a **unique number that is used to identify a device on a mobile network**. It has **15 digits and is like a phone's unique identity**. The number is used to verify the identity of a device when a user uses the Internet or places a call through it.
- **Phones with a dual-SIM option have two IMEI numbers**, one for each SIM. The IMEI number can help network providers track down a device in case it gets stolen or is lost. Once such loss or theft is reported, the carriers can deny the device access to the cellular network even with a new SIM card.

Nobel Prize for Physiology or Medicine 2022

- Swedish scientist **Svante Pääbo** has been awarded the Nobel Prize for Physiology for the year 2022 “for his discoveries concerning the **genomes of extinct hominins and human evolution**.”
- **Svante Pääbo** found that gene transfer had occurred from these now extinct hominins to Homo sapiens. This ancient flow of genes to present-day humans has physiological relevance today, for example affecting how our immune system reacts to infections.

Achievements:

- **Paleogenomics**: Through his groundbreaking research, Svante Pääbo established an entirely new scientific discipline, paleogenomics.
- **Sequencing** the genome of the **Neanderthal**, an extinct relative of present-day humans
- New powerful methods for sequence analysis indicate that **archaic hominins** may also have mixed with Homo sapiens in Africa.

Significance of his discovery:

- Will help better understand human evolution and migration.
- How archaic genes influence present-day humans: eg. Denisovan version of the gene **EPAS1** confers an advantage for survival at high altitudes and is common among present-

day Tibetans. Neanderthal genes that affect our immune response to different types of infections.

Nobel Prize in physics 2022

- The **Nobel Prize in physics** for 2022 is being awarded to **Alain Aspect, John F. Clauser and Anton Zeilinger** for their work on **quantum mechanics**
- **Awarded for:** Experiments with entangled photons, establishing the violation of Bell inequalities, and pioneering quantum information science.
- **Conducted groundbreaking experiments:** using entangled quantum states, where two particles behave like a single unit even when they are separated.

Importance:

- **Development of experimental tools:** laid the foundation for a new era of quantum technology.
- **Being able to manipulate and manage quantum states and all their layers of properties:** It gives us access to tools with unexpected potential.

Nobel Prize in Chemistry

- **Carolyn Bertozzi (USA), Morten Meldal (Denmark), and Barry Sharpless (USA),** won the 2022 Nobel Prize in Chemistry for the development of **click chemistry and bioorthogonal chemistry**.
- While Barry Sharpless and Morten Meldal laid the foundation for a functional form of chemistry click chemistry in which molecular building blocks snap together quickly and efficiently. Carolyn Bertozzi took it to a new dimension and started utilising it in living organisms.
- These reactions are now used globally to explore cells and track biological processes. Using bioorthogonal reactions, researchers have improved the targeting of cancer pharmaceuticals, which are now being tested in clinical trials.
- Click chemistry and bioorthogonal reactions have taken chemistry into the era of functionalism. This is bringing the greatest benefit to humankind.

Prachand

- The Indian Air Force (IAF) today inducted the first fleet of indigenously-built Light Combat Helicopters (LCH), which have been developed primarily for mountain warfare.
- The **HAL Prachand**(meaning "*Fierce*") is an Indian multi-role, light attack helicopter designed and manufactured by the Hindustan Aeronautics Limited (HAL) under project LCH
- Its flight ceiling(maximum density altitude) is the highest among all attack helicopters in the world.
- The LCH drew extensively on an earlier indigenous helicopter developed and manufactured by HAL, the **ALH Dhruv**

SASTRA Ramanujan Prize 2022

- The **SASTRA Ramanujan Prize for 2022** will be awarded to **Yunqing Tang, Assistant Professor** with the University of California, Berkeley, U.S.A.
- The award, instituted by the **Shanmugha Arts, Science, Technology & Research Academy (SASTRA) in 2005** with a cash prize of **\$10,000**.
- It is presented annually to individuals aged **32 and below**, who made outstanding contributions in the field of **mathematics**, influenced by **Srinivasa Ramanujan**.

Economics

Asian Palm Oil Alliance

Formed by edible oil industry associations of **5 major palm oil importing countries – India, Pakistan, Sri Lanka, Bangladesh and Nepal**, with the aim to gain **collective bargaining power** and change the negative image of palm oil for various purposes.

About Palm Oil

- It is edible vegetable oil produced from the palm fruit of **Elaeis Guineensis/Oliefera**.
- It is rich in **A and E** and has no trans fatty acids.
- Asia accounts for **40% of global palm oil** demand (India is the largest importer (world's 15%))
- **In India:** Palm oil cultivation is mainly concentrated in Andhra Pradesh and Telangana

Water Trading

- Niti Aayog will bring out a policy for trading in Water on commodity exchange in India, similar to Gold, Silver and Oil. It aims to ensure better price discovery of water, efficient use and more investment into water resources.
- **Water trading** is the process of buying and selling water access entitlements, also often called water rights. **Water trade allows water** holders to decide whether they need to buy or sell water at a particular time.
- **1st tradable water price** futures index was launched on the **Chicago stock exchange in 2020**.
- **It is in practice in Australia, Chile, USA Etc.**

Nutri-garden

- Nutri-garden is an advanced form of kitchen garden in which fruits and vegetables are grown as a source of food and income.
- In order to provide the right kind of nourishment, **Poshan Vatikas or Nutri-gardens** are being set under POSHAN Abhiyaan. It will provide easy and affordable access to locally produced fruits, vegetables, medicinal plants and herbs to women and children.

Benefits:

- **Enhance dietary diversity** by providing key micronutrients through local fruits and vegetables.
- It will **reduce external dependency** and make communities **Atmanirbhar** for their nutritional security.

Global Innovation Index 2022

- **India rose to 40th among 132 countries** in the Global Innovation Index 2022, jumping six places from a year ago, according to the rankings released by the **World Intellectual Property Organisation (WIPO)**.
- **Reasons:** Improvement in information and communication technologies (ICT) services exports, venture capital recipients' value as well as finance for start-ups.
- **Switzerland, the US, Sweden, the UK and the Netherlands** are the world's most innovative economies, with China on the threshold of the top 10.

Current Affairs Update (Oct 8-15)

National

Rules regarding online gaming

A task force set up by the **Ministry of Electronics and Information Technology** has prepared a final report of its recommendations **to regulate the** online gaming industry in India.

An online game is a video game that is **either partially or primarily** played through the Internet or any other computer network available.

What are the types of online gaming?

1. **e-sports** (well-organized electronic sports which include professional players),
2. **Fantasy sports**
3. **Casual games**: these can be either **skill-based** (mental skill) or **chance based** (based on a random activity like a roll of a dice) online games.

How big is the online gaming market in India?

Revenue generated: The revenue is estimated to **reach \$5 billion in 2025**.

Growth: CAGR of 38% between **2017-2020**, as opposed to 8% in China and 10% in the US.

Law on online gaming in India

- **State subject:** Online gaming so far has been a **state subject**, but state governments are finding it extremely difficult to enforce certain rules like geo-blocking certain apps or websites within the territory of their state.
- **Applicability issue:** there is a concern that rules passed in one state are not applicable in another, which has caused inconsistency in regulation.
- **Lack enough power:** State governments also do not have enough blocking powers like the Centre to issue blocking orders for **offshore betting sites**.

Societal concerns that can emerge with the proliferation of online gaming—

- **Increased suicidal incidents:** people are losing large sums of money on online games, leading to suicides in various parts of the country.

- **Uncertainty:** For online gaming businesses, inconsistency has led to uncertainty.
- **Other concerns:** there is currently **no regulatory framework** to govern various aspects of online gaming companies such as having a **grievance redressal mechanism, implementing player protection measures, protecting data and intellectual property rights, and prohibiting misleading advertisements.**

What are the recommendations of the task force?

- **Central-level law** for online gaming should apply. **Casual games** with no real money element in the form of stakes may be kept outside the scope of such rules.
- **Creating a regulatory body** for the online gaming industry
- **A three-tier dispute resolution mechanism**, similar to that prescribed under the **Information Technology Rules, 2021** for online streaming services.
- Any online gaming platform – **domestic or foreign**– need to be a **legal entity** incorporated under Indian law.
- **Regulating Body: MeitY** may act as a **nodal ministry** to regulate online gaming, **except for the e-sports** category on which the **Department of Sports** can take the lead.
- **Information and Broadcasting Ministry** can regulate advertisements, code of ethics relating to content classifications, etc.
- **Consumer Affairs Ministry** can regulate the sector for unfair trade practices.

Modhera- first solar-powered village

- PM declared Modhera in Mehsana (Gujarat) as the country's first round-the-clock solar-powered village
- During the day time, the village will get solar power and at night, it will be powered by BESS (Battery Energy Storage System).
- **Modhera** is known for **Sun Temple**. It was built after **1026-27 CE** during the reign of Bhima I of the Chaulukya dynasty.

The lingering monsoon

Recurring rains in October call for a change in monsoon definition.

Why call for a change in the monsoon definition?

- **Shifting patterns in monsoon activity:** Incessant rain over Delhi and several other parts of North and Northwest India over the last few days.

- **Change in Monsoon month:** The monsoon season, earlier confined neatly to the **four-month June-September period**, is clearly spilling over into October now. The country as a whole received **67 per cent more rainfall** from October 1-10.
- **Revision in withdrawal dates:** Three years back the **India Meteorological Department (IMD)** revised the expected dates of onset and withdrawal of the monsoon for several regions of the country. The rainfall happening after **30 September** is counted as '**post-monsoon rainfall**', even though the rainfall is mainly happening due to weather systems that form during the monsoon season.
- This is happening for the **third year in a row**- 2020, 2021 and 2022.

RTI pleas pile up at information commissions

Nearly **3.15(three point one five)**lakh RTI complaints or appeals are pending with **26** information commissions across India.

Key Highlights:

- The highest number of pending cases in Maharashtra(99,722)
- **Defunct commission: 29** information commissions across the country are completely defunct
 - Four of them headless at the moment
 - **Jharkhand** and **Tripura** have been completely defunct for **29 months** and **15 months**
 - Only **5%** of the positions are occupied by **women**.
- **Analysis of penalties imposed:** It shows that the commissions did not impose penalties in **95%** of the cases where penalties were potentially imposable.
- **Lack of transparency:** The report flags concerns regarding disposal rates in several commissions and the lack of transparency in their functioning.
- **Digitisation.** Only **11** information commissions out of **29** provide **e-filing facilities for RTI applications** or appeals, but only five are functional.

Transparency International report:

- **Vacant posts:** One-fourth of information commissioner posts are vacant
- **Women:** There are only 5% women information commissioners in the country.
- **Information commissioners:** Out of a total of **165 posts** of information commissioners, **42** are vacant, including two chief State information commissioners.

Justice DY Chandrachud: 50th Chief Justice of India

- Justice **Dhananjaya Yeshwant Chandrachud** is set to become the 50th Chief Justice of India (CJI) in November 2022.
- The current CJI Chief Justice of India **U.U. Lalit** nominated Justice DY Chandrachud as his successor during a meeting involving other judges of the Supreme Court held on October 11, 2022.
- Justice DY Chandrachud's father – **Justice YV Chandrachud** – was the **16th Chief Justice of India**.
- Justice YV Chandrachud became the CJI in 1978. He held this position for the **longest tenure** of seven years. His son, Justice DY Chandrachud, has been a Supreme Court Justice for two years – the longest in the recent past.

PM-DevINE

The Union Cabinet has recently approved a new scheme called Prime Minister's Development Initiative for North East Region (PM-DevINE).

Key facts

- PM-DevINE scheme was announced by the Central Government during Union Budget 2022-23 to remove the developmental gaps in the North Eastern Region (NER).
- The recently launched scheme will be implemented for the remaining four years of the 15th Finance Commission from 2022-23 to 2025-26.
- It will be **fully funded by the central government** and implemented by the Union Ministry of Development of North Eastern Region (**DoNER**).
- The government has allocated **Rs.6,600 crore** for the implementation of this scheme.
- The scheme provides funding **for infrastructure projects and social development** projects that will help remove developmental gaps in various sectors in Northeastern region.
- The ultimate aim of this initiative is to boost livelihood opportunities in Northeastern region, especially for women and youth.

International

2nd UN World Geospatial International Congress

- The second edition of the UN World Geospatial International Congress is being organized in **Hyderabad, Telangana** from October 10 to 14 this year.

- The 2nd United Nations World Geospatial Information Congress (UNWGIC 2022) is being hosted by the **Department of Science and Technology (DST)** and convened by the United Nations Committee of Experts on Global Geospatial Information Management (UN-GGIM).
- It is organized by the **United Nations Department of Economic and Social Affairs**.
- It will promote dialogues on the global geospatial information management that would help governments, non-governmental organizations (NGOs), private entities and academia.
- The theme of the event is **“Geo-Enabling the Global Village: No one should be left behind”**.
- It will focus on achieving an inclusive and equitable global society by creating a community for the collection of human data.
- Geospatial technology uses tools like **GPS (Global Positioning System), GIS (Geographic Information System)** and **Remote Sensing** for geographic mapping and analysis.
- **How technology is a tool for inclusion?**
- **South Asia satellite** is facilitating connection and communication in India’s neighbourhood.
- Opening of the **drone sector and space sector** to private entities.
- **JAM trinity** has delivered welfare benefits to **800 million** people seamlessly.
- **Potential growth:** India’s geospatial economy is expected to cross **₹63,100 crores by 2025** at a growth rate of **12.8%**.

Science-Tech & Environment

Foreign direct product rule

Recently, US officials applied the foreign direct product rule to China’s advanced computing and supercomputer industry to stop it from obtaining advanced computing chips.

What is the Foreign Direct Product Rule?

It enables US regulators to extend their technology **export control powers** far beyond America’s borders to transactions between **foreign countries and China**. It essentially says that if a product was made using **American technology**, the US government has the power to stop it from being sold – including products made in a foreign country.

Significance of the move: It may stop advanced chip use in Chinese supercomputers, which can be used to develop nuclear weapons and other military applications.

What other countries are included in this rule: The rule is currently applied in **Russia and Belarus**. It was imposed in protest against the invasion of Ukraine.

Greenwashing exercise

The United Nations Framework Convention on Climate Change (**UNFCCC**) Conference of Parties 27's (CoP 27) Egyptian presidency named **Coca-Cola Company** — one of the biggest plastic polluters in the world — as the **official provider and supporter of the year's biggest climate change conference**.

Activists and commentators have called Coca-Cola's sponsorship of the world's biggest climate summit a '**greenwashing exercise**'

Greenwashing is the process of conveying a false impression or providing misleading information about how a company's products are more environmentally sound. Greenwashing is considered an unsubstantiated claim to deceive consumers into believing that a company's products are environmentally friendly.

Kuafu-1

- Kuafu-1 is China's first space-based solar telescope
- The Advanced Space-based Solar Observatory (ASO-S) was launched aboard the Long March-2D carrier rocket from the Jiuquan Satellite Launch Center in northwestern part of China.
- It is nicknamed Kuafu-1, after a mythical giant that sought to capture and tame the sun.
- The solar mission, which is expected to last for 4 years, will enable scientists to capture and study the previously unprecedented images of the Sun during the "solar maximum" (when sun has the highest number of sun spots). The solar maximum is expected to occur around the year 2025.
- The ASO-S is China's first full-scale satellite dedicated to researching the Sun. It is the world's first solar telescope capable of simultaneously monitoring both solar flares and coronal mass ejections.
- It will study the Sun from an orbit 720 km above the surface of the Earth.

Kadavur Slender Loris sanctuary

- The state government of Tamil Nadu has notified the establishment of Kadavur Slender Loris Sanctuary.
- Tamil Nadu is set to host India's first ever Slender Loris Sanctuary.
- Named Kadavur Slender Loris Sanctuary, it will span across 11,806 hectares
- The government notified the establishment of the new sanctuary under Section 26 A(1)(b) of Wildlife (Protection) Act, 1972.

About Slender Loris

The slender lorise, belonging to genus loris, are **native to Sri Lanka and southern India**. These species **spend majority of their life in trees**, travelling the atop the branches with slow and precise movements. These nocturnal animals are found in scrub forests, semi-deciduous forests, swamps and tropical rain

forests. Though **insectivorous**, these animals also consume plants. They play a critical role in the terrestrial ecosystem. They are also crucial in agriculture since **they consume pests** that are harmful to crops. They are categorized as endangered animal by the International Union for the Conservation of Nature (IUCN) Red List. These **endangered** primates are listed under **Schedule I of the Wildlife (Protection) Act of India, 1972**. The species is currently among the **least studied** of all primates in India. They are poached because of the erroneous belief that they have magical powers. Poaching and the habitat loss are the main threats faced by them. The loss of acacia tree, habitat fragmentation, hunting for pet trade and meat are among the reasons for the dwindling population of this species.

Economics

2022 Nobel Prize for Economics

- This year, the Nobel Prize for Economics was conferred to **Ben Bernanke, Douglas Diamond and Philip Dybvig**.
- The 2022 Nobel Prize for Economics recognized the works that have significantly improved the world's understanding of the role of banks in the economy, especially during the times of financial crises.
- The research by Ben Bernanke, Douglas Diamond and Philip Dybvig found why is it important to prevent the collapse of banks.
- A research by Dybvig and Diamond provided recommendations to prevent the collapse of the banks.
- Banks are involved in the combination of activities of offering long-term loans to borrowers and accepting deposits and allowing their access to concerned clients.
- The combination of these activities are making banks vulnerable to rumours of their imminent collapse, leading to rapid withdrawal from savings accounts and the ultimate collapse of the banks.
- Dybvig and Diamond recommended that this worst-case scenario can be prevented if the government provides deposit insurance and acts as a last resort lender to the banks.
- Diamond's research showed how the banks can assess borrowers' credit worthiness and ensure that the loans are used for worthy investments.

The e-Rupee

e-rupee is akin to sovereign paper currency but in digital form, exchangeable at par with the existing currency and will be accepted as a medium of payment, legal tender and a safe store of value.

Features:

- e-rupee appears as a **liability** on a central bank's balance sheet.
- e-rupee can be structured as **'token-based'** or **'account-based'**:

A token-based CBDC: whosoever holds the tokens at a given point in time would be presumed to own them, similar to banknotes.

- The person receiving a token will verify that his ownership of the token is genuine
- It is preferred for retail payments.

An account-based system: would require maintenance of the record of balances and transactions of all holders of the CBDC and indicate the ownership of the monetary balances, similar to Bitcoins.

- An account-based CBDC, an intermediary verifies the identity of an account holder
- More preferred for wholesale payments.

RBI has been opposing private cryptocurrencies, stating that they are a threat to India's macroeconomic and financial stability.

International acceptance: As of July 2022, 105 countries were exploring CBDC. **Ten countries** have launched CBDC, the first of which was the **Bahamian Sand Dollar in 2020** and the latest was **Jamaica's JAM-DEX**.

Benefits of CBDC: Bring a cultural shift towards virtual currency by reducing currency handling costs, universal access, easier Cross-Border Payments, and greater financial Inclusion.

Challenges: There are privacy Concerns (RBI may hold data on the individual use of user transactions), the digital divide, low financial literacy, Faster obsolescence of technology, etc.

Current Affairs Update (Oct 28-Nov 4)

National

Images of gods and Goddesses on Indian coins

- India has a long tradition of coinage with images of gods and goddesses.
- **Kushanas:** According to historians, the Kushans, who hailed from the Central Asian region and ruled till the 3rd century AD, were the **first to use the image of Goddess Lakshmi on their coins**, along with **Ardochsho**, the Iranic Goddess of wealth.
- **Gupta rulers:** Similarly, on the coins of the Gupta Empire one can witness forms of Durga, Laxmi and Ganga.
- **Mohammed Ghori:** coins with Goddess Lakshmi issued by Mohammed bin Sam, known to us as Mohammed Ghori after defeating Prithviraj Chauhan in the battle of Terrain in 1192 AD.
- **Vijayanagara Kingdom: Harihara –II** (1377-1404) introduced coins that had Brahma-Saraswati, Vishnu-Lakshmi and Shiva-Parvati.
- **British Raj:** The British East India Co. at Madras Presidency minted coins labelled as the **Three Swamy Pagoda**, which depicts Lord Balaji flanked by Sridevi and Bhudevi on either side.
- **French and Dutch:** The tradition of minting coins to win the confidence of local people continued when the French and Dutch minted coins showing **Vishnu** between 1715 and 1774 and **Goddess Kali** in the late 17th century.

One Nation, One Uniform for police

Recently in line with his broader attempt to introduce a uniform set of policies across the country PM has suggested 'One Nation, One Uniform' for police forces.

Who decides on uniforms for the police?

- **Law and order are part of state subject:** Both '**public order**' and the '**police**' are placed in List II (**State List**) of the **Seventh Schedule** of the Constitution: Thus each state has the liberty to decide on the uniform.
- **Variation in Uniform:** While police personnel in India are often associated with the **colour khaki**, their uniforms do **differ in varying degrees in different regions**.

Equal pay for men and women cricketers

In a landmark move, the Board of Control for Cricket in India (BCCI) announced that it will be implementing a **new pay equity policy for its contracted women cricketers**, effectively paying men and women cricketers the same match fees.

Pay equity is also known as **equal pay for work of equal value**. That means if two different jobs contribute equal value to their employer's operations then the employees in those positions should receive equal pay.

Is India the only country to bring pay parity in sports?

No, the first country to do so was **New Zealand in July 2022**. New Zealand Cricket, the governing body for professional cricket in the country, and the players' association signed a **five-year deal** so that **both international and domestic level-women players will receive the same match fees as men across all formats and competitions**.

Raskhan and Taj Bibi

Recently tourism department of Uttar Pradesh has redeveloped the tombs of **Raskhan** and **Taj Bibi** (both devotees of Lord Krishna) as a tourist complex with an open-air theatre.

Who was Raskhan?

Raskhan or **Syed Ibrahim Khan** was a **16th-century** Sufi Muslim poet born either in Amroha or Hardoi in Uttar Pradesh. Raskhan was his **pen name in Hindi**.

- In his early years, he became a follower of **Sri Krishna** and learned the religion from **Goswami Vitthalnath**. His poetry is in the form of **Doha, Padawali and Savayya**.
- **Writings:** Raskhan's Khariboli writings are numerous, the five most important being the **Sujana Raskhana**, the **Premavatika (most popular)**, the **Danalila**, the **Astayama** and a collection of **Padas** (rhymed couplets).

Taj Bibi: aka the '**Mughal Mirabai**', was born in the **17th century** as the daughter of a Muslim nobleman **Padna Khan**.

- Taj Bibi was **married to Emperor Akbar** and was appointed by the Mughals to protect the **Gokul area**.
- She **wrote poetry** during the Mughal time when the ruling class belonged to the Muslim religion.

Should governments sell liquor and run lotteries?

Kerala Governor recently criticized the State government for relying heavily on **liquor** and **lottery** to generate revenue.

Should the government sell sin goods?

- **The role of the state is to provide public goods:** The consumption of sin goods is instead linked with 'public bad'.
- **Negative effects of sin goods:** Disproportionately impact the weaker sections of society.
- **Public health concern:** The rising demand for alcohol is a public health concern
- **Revenue-maximizing objective:** It takes precedence over the public interest.

How can the state play a positive role?

- **Raising the tax rates and prices of sin goods:** It will discourage people from consuming them in the long run.
- **Developmental programmes:** Taxes collected from a significant source can be used for development programmes.

Prevalence of superstitious killings in India

- **NCRB Data:** According to NCRB data for 2021, **six deaths** were linked to human sacrifices, while witchcraft was the motive for **68 killings**. In 2020, India saw **88 deaths** due to witchcraft and **11 died** as part of 'human sacrifices'.
- **Maximum prevalence:** Chhattisgarh (20), followed by Madhya Pradesh (18) and Telangana (11) recorded the maximum number of witchcraft cases.

Legal provisions against superstitions in India:

- **There are no nationwide legislations** to deal with superstitious practices, black magic, or human sacrifice, in particular, certain sections of the Indian Penal Code enlist penalties applicable for such incidents.
- **IPC: Section 302** (punishment for murder) takes cognisance of human sacrifice, but only after the murder is committed.
- **Article 51A (h)** of the Indian Constitution makes it a fundamental duty for Indian citizens to develop a scientific temper, humanism and the spirit of inquiry and reform.
- **Drugs and Magic Remedies Act of 1954** also aims to tackle the debilitating impact of various superstitious activities prevalent in India.

The tragedy in Morbi

The century-old cable suspension bridge in Gujarat's Morbi, collapsed into the river, sending hundreds plunging into the water. The bridge was a tourist attraction and had long been hailed as a magnificent engineering marvel.

Technical reasons for the collapse of the 19th Century pedestrian bridge are:

1. Overcrowding
2. Crowd-induced vibrations
3. End of the 'service life'

Probable cause of such disasters: Coming out of the long restrictions on travel necessitated by the COVID-19 pandemic, people all over the world appear to be binging on travel and outings.

- A **stampede in Seoul in South Korea** killed 154 people last week.
- In India also, record numbers of people are thronging tourism and pilgrimage spots.

What is a suspension bridge?

As the name implies, suspension bridges suspend the roadway by cables, ropes or chains from two tall towers. In simple words, it is a **type of bridge in which the deck is hung below suspension cables on vertical suspenders.**

How does it work?

Suspension bridges **depend on the balance of the forces** of compression and tension.

- The design ensures that the **load on the suspension cables is transferred to the towers at the two ends**, which transfer them further by vertical compression to the ground by way of the anchorage cables.
- All of this balancing has to happen **within the permissible weight restrictions for the bridge.**

Two-finger test

The **Supreme Court** declared that any person conducting the invasive '**two-finger**' or '**three-finger**' vaginal test on rape or sexual assault survivors will be found guilty of misconduct.

Two-finger test: The test is conducted to check whether the victim has had recent sexual intercourse, the victim of rape or sexual assault.

SC said:

- **The test has no scientific basis:** It neither proves nor disproves allegations of rape.
- Court also ordered the **two-finger test to be removed from the syllabus of medical education.**
- **Guidelines:** The court ordered that the guidelines be circulated to private and government hospitals. **The Ministry of Health and Family Welfare guidelines for health providers** forbid the application of the two-finger test.
- **2013 SC order:** Two-finger test and its interpretation violate the right of rape survivors to privacy, physical and mental integrity and dignity.

Chhath pooja

- Chhath Puja, an **ancient Hindu Vedic festival**, is dedicated to the solar deity **Surya and Shashthi Devi.**
- Thanking them for bestowing life on earth, as part of the tradition, women (and some men too) fast for the well-being of their sons and the happiness of their families.
- Chhath Puja is also known as **Pratihara, Dala Chhath, Chhathi and Surya Shashthi.**
- **Primarily observed** in the states of **Bihar, Jharkhand and Uttar Pradesh**
- **Festival period:** worshipping of the Sun God spans four days.

Amendments to the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules 2021

The **Ministry of Electronics and IT** notified amendments to IT Rules, 2021 aimed at protecting the rights of **Digital Nagriks (citizens).**

Key Amendments:

- **Legal obligation on intermediaries:** Take reasonable efforts to prevent users from uploading content that intentionally communicates any misinformation or information that is patently false or untrue. **72-hour time** frame for content removal instead of 24 hours.
- **Regional languages:** For effective communication of the rules and regulations of the intermediary, communication should be done in regional Indian languages as well.
- Removing the words '**defamatory**' and **libellous**. Whether any content is **defamatory or libellous** will be determined through **judicial review.**
- To deal particularly with **misinformation**, and **content** that could incite violence between different religious/caste groups.
- **Respect rights:** The rules have made it explicit for the intermediary to respect the rights accorded to the citizens under **Articles 14, 19 and 21.**

- **Grievance Appellate Committee(s):**
 - It will be established to allow users to appeal against the inaction or decisions taken by intermediaries on user complaints.
 - Users have the right to approach courts for any remedy.

First Women Inspector General of CRPF

- For the first time in the history of Central Reserve Police Force (CRPF), two women officers reached the rank of Inspector General (IG).
- Two women officers who were recently promoted to the rank of Inspector General are IG Seema Dhundiya and IG Annie Abraham.
- While **IG Seema Dhundiya** will head the Bihar Sector of CRPF, **IG Annie Abraham** will head the Rapid Action Force (RAF).

International

Russia withdraws from Black Sea Grain Initiative

- Russia recently pulled out of the Black Sea Grain Deal, which was launched to mitigate food inflation caused by conflict in Ukraine.
- The Black Sea Grain Initiative was an agreement between Russia and Ukraine with Turkey and the United Nations.
- It sought to create a safe passage of food grains exported from Ukraine, which is currently in war with Russia.
- Under this agreement, export of grain, food and fertilizers will be allowed to resume from Ukraine via a “safe maritime humanitarian corridor” from three key Ukrainian ports i.e., Chornomorsk, Odesa, and Yuzhny/Pivdennyi.

New President of Brazil

The leftist leader **Lula da Silva** recently made a comeback as the new President of Brazil after defeating incumbent far right President Jair Bolsonaro.

Science-Tech & Environment

Terai Elephant Reserve

- The Indian Government approved the establishment of Terai Elephant Reserve in **Uttar Pradesh**.

- The Terai Elephant Reserve will be established in **Dudhwa-Pilibhit** in Uttar Pradesh. It will span across 3,049 sq km area.
- It will be the **33rd elephant reserve** to be set up in India.
- It will be in the joint forest regions of Dudhwa and Pilibhit tiger reserves that are involved in the conservation of tiger, Asian elephant, swamp deer and one-horned rhinoceros.
- It is the third elephant reserve to get approval from the Union Environment Ministry in the past three months under Project Elephant, with the other two being **Lemru in Chhattisgarh** and **Agasthyalai in Tamil Nadu**.

UP gets its fourth tiger reserve

- **Ranipur Tiger Reserve** in Uttar Pradesh has become the **53rd tiger reserve in India**. As of right now, **the RWS in the Chitrakoot district has no tigers of its own**
- The Ranipur Tiger Reserve in the Chitrakoot district is the **fourth in the state**.
- The other tiger reserves in Uttar Pradesh **include Dudhwa, Pilibhit, and Amargarh** (a buffer of **Corbett** Tiger Reserve).

Senna spectabilis

An invasive species, **Senna spectabilis**, an exotic tree, has taken over between 800 and 1,200 hectares of the buffer zones of the Mudumalai Tiger Reserve (MTR) in the picturesque Nilgiris hill district.

What is the 'Invasive species'?

An invasive species is an organism that is not indigenous, or native, to a particular area. Invasive species can cause great economic and environmental harm to the new area.

Senna spectabilis:

It was introduced as an **ornamental species** and for use as firewood from South and Central America. The species has become highly invasive in the Sigur plateau in both the core and buffer zones of the MTR.

Amur falcon hunting banned in Manipur

- The hunting, killing and sale of **amur falcons** have been banned in Manipur.
- Locally known as **Akhuipuina**, the amur falcons arrive mainly in Manipur and Nagaland on its southbound migration from breeding grounds in North China, Eastern Mongolia and far-east Russia en route to its wintering grounds in South Africa.
- Over two lakh amur falcons come each year to Manipur alone.

Related laws:

- **The Manipur Wildlife (Protection) Act 1972:** “The Act has made it clear that these migratory birds cannot be hunted, sold or killed. Those who disobey it will be pulled up”.
- The migratory bird is protected under the **Wildlife Protection Act 1972** and included under **Schedule IV**.
- Hunting of the birds or possessing their meat is punishable with imprisonment of up to three years or a fine of up to Rs 5,000.
- **IUCN Red List Status:** Least Concern

Glyphosate

Government has restricted the use of the Herbicide glyphosate to authorized pest control operators, attracting criticism from industry bodies.

Glyphosate: It is a non-selective **herbicide (kills both ally types of plants)**. It is also used to **regulate plant growth and ripen specific crops**. It is **banned in 28 countries**, including Australia, Canada, Brazil, Germany, Italy, Netherlands and Sri Lanka, as it may be **carcinogenic** (as per a WHO study) and remains as a residue in the environment for up to 6 months.

Usage of glyphosate in India: It is widely used in **plantation agriculture**. It is also used to control weeds in **afforestation** activities and in areas along irrigation channels, Railway tracks etc. It may also be combined with **BT cotton**, leading to high usage in **Deccan belts**.

Polluter Pays Principle

The National Green Tribunal has slapped thousands of crores of fines on seven states on Supreme Court directions, totalling around **Rs 28,180 crore** and about Rs 2,000 crore in other cases **over waste**.

The ‘polluter pays’ principle is the commonly accepted practice that **those who produce pollution should bear the costs of managing it to prevent damage to human health or the environment**.

How does NGT calculate the penalty amount?

- The NGT has equated the amount of penalty fixed on the states based on the “**polluter pays principle**” to **environmental compensation and the cost of restoration**.
- The compensation for untreated liquid waste (sewage) was determined to be Rs 2 crore per million litres per day (MLD) and Rs 300 per tonne for unprocessed legacy waste.
- The interesting thing is **that it is the responsibility of the states to keep track of violations committed**, as per the polluter pays principle while calculating the penalty.

Two more Indian beaches get ‘Blue Flag’ certificates

Two more Indian Beaches both in Lakshadweep, (Minicoy Thundi beach and Kadmat beach) get coveted International Blue Flag Certification. India now has **12 Blue Flag beaches**.

Other beaches in the blue list are Shivrajpur (Gujarat), Ghoghla (Diu), Kasarkod and Padubidri (Karnataka), Kappad (Kerala), Rushikonda (Andhra Pradesh), Golden beach (Odisha), Radhanagar (Andaman and Nicobar Islands), Kovalam (Tamil Nadu) and Eden (Puducherry).

What is the Blue flag certification?

- Blue Flag certification is a globally recognised eco-label accorded by the “**Foundation for Environment Education in Denmark**” based on **33 stringent criteria**.
- **Certification awarded by** an international jury comprising members of the **United Nations Environment Programme (UNEP), United Nations World Tourism Organisation (UNWTO), and International Union for the Conservation of Nature (IUCN), besides FEE.**
- It was **started in France in 1985**. Certification is **awarded annually**.
- **Benefits: Neat and clean beaches** are an indicator that the coastal environment is in good health and the Blue Flag certification is a global recognition of India’s conservation and sustainable development efforts.

What is the ‘Blue Flag Beach’?

The ‘Blue Flag’ beach is an ‘**eco-tourism model**’. It marks our beaches as providing tourists and beachgoers with clean and hygienic bathing water, facilities/amenities, a safe and healthy environment, and sustainable development of the area.

What is CAR T-cell therapy?

- It is a type of treatment in which a patient’s T cells (a type of immune cell) are changed in the laboratory so they will bind to cancer cells and kill them.
- CAR-T cells are a new form of, immunotherapy, itself a fledgling branch of cancer treatment.
- It entails re-engineering the body’s T immune cells with some genetic material so that they selectively target cancer cells for destruction.

Why in news? The eight-year-old got the treatment as part of the safety trials for India’s first indigenously made CAR-T cells — a joint effort between IIT-Bombay and Tata Memorial Centre, Mumbai.

Sandalwood spike disease

Sandalwood spike diseases which hitherto were confined mainly to forest areas, started spreading to commercial areas.

Sandalwood spike diseases:

- **Cause:** The disease is caused by phytoplasma — **bacterial parasites** of plant tissues — which are transmitted by insect vectors.

- **Origin:** the disease was first reported in Kodagu in 1899.
- **Symptoms:** The sandalwood trees dry up once affected by SSD. Leaves turn thin and yellow and no new leaves will sprout. Within four years, the tree dies.
- **Treatment:** As of now, no cure exists for the disease. Hence, the infected tree has to be cut to reduce the spread of the disease.
- **Concerns:** Every year about **1% to 5%** of sandalwood trees are lost due to the disease.

Humpback Whale

- Every year, an estimated 40,000 humpback whales leave the freezing waters of Antarctica on the world's longest mammal migration.
- They make their way up Australia's east and west coasts to the tropics before returning, calves in tow, a couple of months later. However, they get caught up in the fishing gear nets and get injured or die.
- **Humpback whales (currently least concern at IUCN)** were hunted to near extinction last century. Since bans on whaling, however, the local population has bounced back into the tens of thousands, experts say.
- **Named after the distinctive hump** in front of their small dorsal fin, humpback whales often feed in large groups and are famous for their **singing ability**.

What is a satellite phone?

- A satellite phone is a telephone that can connect to orbiting satellites.
- Similar to terrestrial mobile phones, they can connect to voice and short messaging services as well as low bandwidth Internet access.
- Satellite phones can connect from anywhere as they are directly connected to satellites around the world and do not depend on terrestrial mobile networks.
- Satellite phones usually cover most of the planet with fairly robust connectivity.

What's wrong with carrying a satellite phone?

- It's not legal to carry a satellite phone in India unless you have permission.
- Restrictions on the possession and use of these phones were tightened after the Pakistani terrorists who attacked Mumbai in November 2008 **used these devices** to keep in touch with their Lashkar-e-Taiba handlers.

2022 Forest Declaration Assessment

- In 2021, deforestation rates have declined at the global level by 6.3 per cent compared to 2018-20 baseline.

- Though the rate of forest loss has deaccelerated, the climate goal of stopping deforestation by 2030 will not be achieved.
- In 2021, Brazil is the largest contributor of deforestation in the world. It recorded a 3 per cent increase in the deforestation rate last year compared to the 2018-2020 baseline.
- The deforestation rate in Bolivia and the Democratic Republic of the Congo is 6 per cent and 3 per cent respectively.
- Around **145 countries** have committed to stop and reverse deforestation and land degradation by 2030 at the COP26 in 2021.
- China recorded the largest net increase in green cover of 2.1 million hectares. India recorded 0.87 million hectares increase in tree cover.

COP 27 (2022 United Nations Climate Change Conference)

The Government of **Egypt** will host the 27th Conference of the Parties of the UNFCCC (COP 27) at **Sharm El Sheikh**. This is the **fifth time** that a Conference of the Parties (COP) is being held in **Africa**.

The COP27 will focus on **three main objectives** – emission reduction, help countries prepare and respond to climate change and provide technical aid and funding for developing countries to respond to climate change.

What major challenges will COP27 address?

- Climate finance will be the major sticking point at the COP27. In 2009, the developed countries committed to provide 100 billion USD aid each year to developing countries by 2020 to help them minimise emissions and respond to climate change. This target was missed and deferred to 2023.
- Presently, developing countries are demanding payments for loss and damage caused by carbon emissions by developed economies. These countries argue that they suffer impact of climate change more than richer nations and have less financial capacity to address it. They are demanding the US and Europe to compensate for this. However, the US and Europe do not agree as they fear that if they compensate for their historic emissions, it could cost their economies billions of dollars for decades or even centuries into the future.

Aceclofenac

- Indian Veterinary Research Institute (IVRI) has demanded a ban on using aceclofenac in cattle after a new study showed that the drug metabolises into diclofenac in water buffaloes.
- Aceclofenac gets rapidly converted to diclofenac after being injected into the water buffaloes.
- Aceclofenac in water buffaloes poses the same threat to vultures as it is a pro-drug of diclofenac.

What was diclofenac?

- Diclofenac — an **anti-inflammatory drug** — was **banned for veterinary use** by the Government of India in **2006**. It was found to be the **main cause of a dramatic decline (99 per cent) of the vulture** population across Asia.
- The drug caused **accidental poisoning in raptors** after they fed on carcasses of cattle injected with it.

Ethical Issues Concerned with Tesla's Autopilot

A **driverless car** is a vehicle which can sense its surrounding environment and can navigate without human input. It combines **multiple sensors and techniques** to perceive their surroundings like radar, laser light, GPS, odometer, computer vision, etc.

Ethical issues involved

- **Accountability:** In the case of any crash, it would arise an issue of accountability whether the car owner would be accountable or the manufacturer of that vehicle.
- **Law vs Ethics:** Autonomous cars are made to follow traffic rules strictly. But sometimes traffic rules have to be compromised. For example when a **critical patient** has to be taken to the hospital.
- **Displaying human values:** When the vehicle finds an injured person or an old lady, will it stop to help them and display the qualities of compassion and empathy?
- **Impacts on Environment:** This will promote vehicle usage at a time when the objective is to reduce vehicles to reduce greenhouse gas emissions
- **Automation vs Human livelihoods:** Job loss to drivers without compensatory skill development and job creation. It is believed that in the coming future automation will **kill 69% of the job**.
- **Hacking/privacy vs security-** There is a problem if a car is hacked and programmed for killing. Also, problems related to the privacy of people.

Economics

Indian Steel Industry Is World's Second Largest

PM recently emphasized that the Indian steel industry has become the second largest, after China

According to the Department for Promotion of Industry and Internal Trade (DPIIT):

- The **total steel production capacity** of the country at present is **154 million tons (MT)**.

- India produced **10.14 MT of crude steel in April 2022, making it the second-largest producer in the world.**
- India has set a **target to double the crude steel production capacity from 154 MT per annum now to 300 MT per annum** in the next 9-10 years in an order to **boost indigenous capabilities.**

One nation, one ITR form

The Central Board of Direct Taxes (CBDT) has proposed a **single income tax return (ITR) form for all taxpayers.** There are **seven kinds of ITR forms**, which are used by different categories of taxpayers.

What is the change that has been proposed?

According to the proposal, all taxpayers, barring trusts and non-profit organisations (ITR-7), will be able to use a common ITR form, which will include a separate head for disclosure of income from virtual digital assets.

Benefits:

- The proposed draft ITR takes a relook at the return filing system in tandem with international best practices.
- The draft form aims to make it easier to file returns and to considerably reduce the time taken for the job by individuals and non-business-type taxpayers.