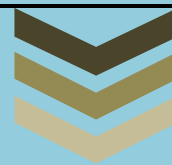


WEEKLY CURRENT AFFAIRS MAGAZINE for



U.P.S.C.-C.S.E.

NOVEMBER-VOL-III-2023

16 November to 22 November



.....

- UPSC/MPSC/NDA/CDS/CAPF/AFCAT
- PUNE/THANE/DADAR/ANDHERI/KALYAN/
PCMC/NERUL/BORIVALI/SATARA
- Offline/Online batches/Video course
- www.pioneeracademypace.com/.in
- IVR No. – 75060 10635

.....

Topic no	Topic Covered	Page No
SCIENCE AND TECHNOLOGY		
1.	NASA AND ISRO PREPARE TO LAUNCH JOINT SPACE MISSION	7
2.	RAYCHAUDHURI, THE PHYSICIST WHO QUIETLY DEFIED THE SYSTEM	8-9
3.	HOW WAS THE FIRST VACCINE FOR CHIKUNGUNYA APPROVED?	9-10
4.	IS IT BETTER TO EAT PLANT-BASED FOODS THAN RELY ON MEAT?	10-11
5.	CRYOGENIC UPPER STAGE OF LVM3 MAKES A REENTRY	11-13
6.	GENE THERAPY FOR SICKLE CELL DISEASE	13-14
7.	INDIA TARGETS \$40BN IN TECHNICAL TEXTILES	14-16
8.	U.S. DATA UNDERSCORE BENEFITS OF CHICKENPOX VACCINATION	16
9.	AI POWERED WEATHER FORECASTING FROM GOOGLE	17-18
10.	A NEW SENSOR TOOLKIT FOR STUDYING NEUROPEPTIDES	18-19
11.	AI POWERED ‘CHEMIST’ MAKES OXYGEN FROM MARTIAN METEORITES	19-20
12.	MODEST START TO BIG STRIDES: SPACE PROGRAMME TURNS 60	20-21
13.	CHIMAERAS – HOSTS TO MULTIPLE GENOTYPES, AND MAYBE HUMAN ORGANS	21-23
14.	FREEMARTINS: BLACK SHEEP AMONG THE CATTLE	23-24
15.	43% INCREASE IN MEASLES DEATHS FROM 2021-2022: WHO	24-25
16.	ENERGY BURST IN DISTANT GALAXY DISTURBED IONOSPHERE	25-26
17.	MEET THE LANGLANDS PROGRAM, THE WORLD’S BIGGEST MATH PROJECT	26-27
18.	FSSAI OPERATIONALISES AMENDED MICRONUTRIENTS LIMITS IN PREMIX FOR FORTIFIED RICE KERNELS	27-28
19.	A RENEWED FOCUS ON EMERGING TECHNOLOGIES	29-30
20.	FREE CANCER CARE ALONE WON’T HELP INDIA FIGHT CANCER	30-31
21.	EV BATTERY RECYCLING CAN GIVE WINGS TO INDIA’S DECARBONISATION DREAMS BUT FACES STIFF CHALLENGES	32-34
22.	HOW A NASA EXPERIMENT WILL STUDY ‘AIR GLOW’ TO UNDERSTAND SPACE WEATHER, WHY IT MATTERS	35-36
23.	EUTELSAT ONEWEB TO LAUNCH SATELLITE CONSTELLATION FOR BROADBAND SERVICE IN INDIA	36-37

ECONOMY		
24.	TRADE DEFICIT HITS RECORD HIGH IN OCTOBER DRIVEN BY GOLD IMPORTS	37-42
25.	FY24 FISCAL DEFICIT SEEN AT 5.9% EVEN IF NOMINAL GDP MISSES BUDGET ASSUMPTION: OFFICIAL	42-43
26.	WALL STREET GAINS ON INFLATION DATA, BUT ROCKY ON GEOPOLITICS	43
27.	2ND NATIONAL SPICE CONFERENCE (NSC) IN HYDERABAD	44-48
28.	EFFORTS TO STOP COAL IMPORTS BY FY26: KEY POINTS	48-52
29.	MEASURES TO ADDRESS CONCERNS OVER THE GROWTH OF UNSECURED RETAIL LOANS	53-56
30.	INDIAN BANKS' NPAS TO DROP TO 3.5%, NET INTEREST MARGIN TO 2.9% BY FY25: S&P GLOBAL	56-61
31.	AS RUPAY ON UPI FACES SOME ROADBLOCKS, NPCI EXPLORES CORRECTIVE OPTIONS	61-66
32.	RISK WEIGHTS IN BANKING	66-74
33.	NPCI – INDIA'S FINTECH GIANT	75-77
34.	REQUEST FOR AUTHORIZATION OF MORE PORTS FOR EXPLOSIVE EXPORTS	77-80
35.	THE IMPACT OF BANGLADESH'S GARMENT WORKERS' STRIKE	80-82
36.	SOVEREIGN GOLD BONDS (SGBS)	82-85
37.	FUTURES AND OPTIONS (F&O) – MEANING, TYPES, DIFFERENCE	85-89
38.	FTA – INDIA AND UK	89-92
39.	THE OTHER OIL IMPORTS INDIA NEEDS TO WORRY ABOUT	92-93
40.	GST OFFICERS BUST 48 FAKE FIRMS AVAILING FRAUDULENT ITC OF OVER ₹199 CRORE	94-95
41.	INDIA'S EXPORT SCHEMES	96-103
POLITY		
42.	PRESS COUNCIL OF INDIA	103-104
43.	TAMIL NADU GOVERNOR RETURN 10 BILL, STATE CALL FOR SPECIAL SESSION	104-107
44.	ASCI PROPOSES GUIDELINES TO CHECK GREENWASHING IN ADS	107-108
45.	DIGITAL PERSONAL DATA PROTECTION ACT 2023 (DPDP)	108-110

46.	HC QUASHES HARYANA LAW FOR 75% QUOTA IN PVT SECTOR JOBS	110-111
47.	SEEKING 'SELF-GOVERNANCE'	111-112
48.	TAMIL ASSEMBLY READOPTS 10 BILL RETURN BY GOVERNOR	113-115
49.	SHOULDN'T REJECT CONSTITUTIONAL MORALITY, SAYS CJI CHANDRACHUD	115-116
50.	IMA, NURSES' ASSOCIATION HONOURED WITH INDIRA GANDHI PEACE PRIZE	116-117
51.	THE ROLE OF THE GOVERNOR IN LEGISLATURE	117-120
52.	GOVERNOR CAN'T WITHHOLD REPASSED BILLS, SAYS SC	120-122
53.	COURTS CAN GIVE LIMITED PRE-ARREST BAIL IN FIRS FROM OUTSIDE STATE	122-124
54.	A FACT CHECK UNIT THAT IS UNCONSTITUTIONAL	124-125
55.	DRAFT NATIONAL PHARMACY COMMISSION BILL	125-126
56.	OUT OF JAIL ON FURLOUGH, RAM RAHIM HEADS TO U.P. ASHRAM, ADDRESSES HIS FOLLOWERS	126-127
57.	TRIBAL ACTIVISTS HAIL COMPENSATION FOR LAND REGULARIZED UNDER FRA	127-129
58.	HC SAYS SURROGACY USING DONOR GAMETES CAN'T BE PROHIBITED AS A CONDITION IN CONSENT FORM	129-130
ENVIRONMENT		
59.	PLASTIC-FREE PLANET: PROTECTING SANITATION WORKERS & WASTE-PICKERS, JUST TRANSITION DISCUSSED ON DAY 2 OF INC-3	130-131
60.	RICH COUNTRIES MAY HAVE MET \$100 BLN CLIMATE GOAL LAST YEAR -OECD	131-132
61.	WHAT A US-CHINA CLIMATE DEAL MEANS FOR COP28	132-133
62.	INDIA HAS A CRITICAL ROLE IN DUBAI CLIMATE CONFERENCE: UAE OFFICIAL	133-134
63.	SAND AND DUST STORMS ARE INCREASING, HUMAN ACTIVITIES CONTRIBUTE 25% EMISSIONS: UNCCD	134-136
64.	EXTREME WEATHER EVENTS MAY BE DRIVING REPLACEMENT OF NATIVE SPECIES WITH EXOTIC ONES	136-137
65.	KADALUNDI'S SHRINKING MUDFLAT ECOSYSTEM KEEPS BIRDS AWAY	137-138
66.	AT TALKS ON CUTTING PLASTIC POLLUTION	139-140
67.	INDIA IS ADOPTING ADVANCED SEWAGE WASTEWATER TREATMENT TECH, BUT MUST CHOOSE THOSE THAT BEST MEET LOCAL NEEDS	140-142
68.	HORSESHOE CRAB DECLINE SPARKS URGENT CONSERVATION PLEA	142-144
69.	WCA REBRANDS AS FUTURECOAL, BATS FOR SUSTAINABLE COAL USAGE	144-145

70.	ONE-DAY TEMPERATURES BREACH 2°C WARMING POINT FOR FIRST TIME: REPORT	145-146
71.	SAVING INDIA'S ONLY APE, THE HOOLOCK GIBBON	146-147
72.	THE OECD REPORT ON CLIMATE FINANCE	147-148
73.	EMISSIONS GAP REPORT: ONLY 14% CHANCE OF LIMITING GLOBAL WARMING TO 1.5°C EVEN IN MOST OPTIMISTIC SCENARIOS	148-149
74.	INTERNATIONAL TROPICAL TIMBER COUNCIL CONCLUDES WITH MAJOR DECISIONS, INCLUDING ITS EXTENSION	150
INTERNATIONAL RELATIONS		
75.	INDIA, US AND OTHER IPEF MEMBER INK SUPPLY CHAIN RESILIENCE PACT	151-152
76.	UNSC ADOPTED RESOLUTION TO CALL FOR PAUSE IN GAZA	152-153
77.	LANCET COUNTDOWN REPORT CALLS FOR CLIMATE-DRIVEN HEALTH ACTION	153-154
78.	THE NEW FLARE-UP IN MYANMAR	155
79.	BORDER PEACE AND TRANQUILITY AGREEMENT	156
80.	NAVY READY FOR EVACUATIONS IF GAZA SITUATION WARRANTS IT	157-159
81.	WHAT IS THE BDS MOVEMENT	159-160
82.	FINLAND CLOSES FOUR CROSSING POINTS ON RUSSIA BORDER	161
83.	CHINA KEEN ON EXTENDING CHINA-MYANMAR ECONOMIC CORRIDOR TO SRI LANKA	161-162
84.	PHILIPPINES INVITES NEIGHBOR TO FRAME SOUTH CHINA SEA CONDUCT RULE	163-164
85.	CEA NAGESWARAN CALLS ON WORLD BANK TO MAKE GOVERNANCE INDICATORS TRANSPARENT	164-165
86.	THE PROTECTION OF HOSPITALS DURING ARMED CONFLICTS	165-166
87.	RECORD INFLATION IN ARGENTINA	167
88.	ATOMS 4FOOD	167-168
GEOGRAPHY		
89.	IN PARCHED BUNDELKHAND, CHASING ELUSIVE DIAMONDS AND SUSTENANCE	169-170
90.	UNCERTAIN FUTURE IN SEA OF POPPIES	170-172
91.	WHY WATER RESERVES IN SOUTHERN INDIA ARE FAST DEPLETING IN 2023	172-173
92.	SHIPPING MINISTRY LOOKS TO PUSH SEA PLANE OPS IN ANDAMAN, LAKSHADWEEP	173

93.	MEASURES ON TO EXPAND CULTIVATION OF GI-TAGGED ONATTUKARA SESAME	174
94.	STORAGE IN CAUVERY BASIN RESERVOIRS HAS DIPPED TO NEARLY HALF THEIR GROSS CAPACITY	175-176
95.	WHAT IS TANTALUM, THE RARE METAL FOUND IN SUTLEJ?	176-177
SCHEMES		
96.	PM LAUNCHES MISSION FOR MOST BACKWARD OF THE SCHEDULED TRIBES	177-178
97.	STEERING ROAD SAFETY IN INDIA BACK ONTO THE RIGHT LANE	178-181
HISTORY		
98.	BIRSA MUNDA AND MUNDA REBELLION	181-182

Topic 1. NASA AND ISRO PREPARE TO LAUNCH JOINT SPACE MISSION

Important for the subject: Science and Technology

The collaborative effort between NASA and ISRO i.e. NASA-ISRO Synthetic Aperture Radar (NISAR) mission, is on track for its scheduled launch in the first quarter of 2024.

About the Mission

- **The Joint Collaboration:** NISAR is a Low Earth Orbit observatory developed jointly by NASA and ISRO, highlighting international collaboration in space exploration.
- **Launch Vehicle:** The mission is set to launch from the Satish Dhawan Space Centre in Sriharikota onboard ISRO's GSLV Mark-II launch vehicle.
- **Data Utility:** NISAR data will offer unprecedented detail and assist researchers in various ways, including monitoring volcanic activity, tracking groundwater use effects, measuring ice sheet melt rates, and observing changes in global vegetation distribution.
- **Mission Life:** The \$1.5-billion NISAR mission has a planned mission life of three years and will survey Earth's land and ice-covered surfaces every 12 days following a 90-day commissioning period.

Advanced SAR Technology

- **Dual-Band SAR:** NISAR carries L and S dual-band Synthetic Aperture Radar (SAR) using the Sweep SAR technique, providing both wide coverage and high-resolution data.
- **Observatory Structure:** The SAR payloads are mounted on the Integrated Radar Instrument Structure (IRIS) along with the spacecraft bus, forming an observatory.
- **Contributions:** NASA's Jet Propulsion Laboratory (JPL) provides the L-band SAR and several key components, while ISRO's U R Rao Satellite Centre contributes the spacecraft bus, S-band SAR electronics, launch vehicle, and mission operations.

Important Milestones achieved

- **Thermal Vacuum Testing:** The thermal vacuum testing, a critical system-level test, was successfully completed in Bengaluru. This test ensures that the spacecraft can operate effectively under extreme temperature conditions.
- **EMI and EMC Testing:** Electromagnetic interference (EMI) and electromagnetic compatibility (EMC) testing have also been successfully accomplished.
- **Upcoming Vibration Tests:** The next phase involves conducting vibration tests to simulate the harsh launch environment. This test will be important for the subject the satellite to intense vibrations while mimicking the conditions of a rocket launch.

Topic 2. RAYCHAUDHURI, THE PHYSICIST WHO QUIETLY DEFIED THE SYSTEM

Important for the subject : Science and Technology

Amal Kumar Raychaudhuri, an Indian physicist, overcame obstacles and restrictions to make a profound contribution to the field of general relativity

Introduction

- Amal Kumar Raychaudhuri, born in Barisal (now in Bangladesh) in 1923, was a renowned Indian physicist with a profound impact on general relativity.
- His birth centenary falls this year.

Breakdown in General Relativity

- General relativity, developed by Albert Einstein in 1916, predicted singularities where gravity could become infinitely strong.
- This opened up the question of whether singularities were anomalies or inherent features of the universe.
- This signalled issues with the model and could have led to the rejection of this theory.

Institutional Hurdles

- Meghnad Saha, the director of the Indian Association of Cultivation of Science (IACS), opposed Raychaudhuri's pursuit of general relativity.
- General relativity was deemed impractical; Raychaudhuri was instructed to focus on 'useful' topics or find another job.
- Despite institutional constraints, Raychaudhuri persisted and delved into the problem of singularities in his spare time.

Raychaudhuri Equation

- Raychaudhuri devised an innovative approach that circumvented mathematical challenges.
- Explored the motion of matter in the curved fabric of spacetime, drawing an analogy with northbound ships converging at the North Pole.
- Discovered an elegant formula known as the Raychaudhuri Equation. Described how the volume of matter spread across a region would always decrease in curved spacetime, leading to convergence.

Global Impact

- Raychaudhuri's equation played a crucial role in the work of physicists Roger Penrose and Stephen Hawking.
- This was central to Hawking's area theorem, demonstrating that the surface area of a black hole never decreases.

Recognition and Career Challenges

- Raychaudhuri faced a lack of appreciation in India until his work gained recognition in the West.
- His contributions didn't significantly transform his career, facing challenges such as scuttled promotions and rejections from academic institutions

Legacy and Inspiration

- Eventually joining Presidency College, Kolkata, Raychaudhuri became a legendary teacher, inspiring future physicists.
- His story emphasizes the importance of scientists following their passion and the challenges faced when dictated what to work on.

Topic 3. HOW WAS THE FIRST VACCINE FOR CHIKUNGUNYA APPROVED?

Important for the subject: Science and Technology

The world's first vaccine for chikungunya was approved by the **Food and Drug Administration (FDA) in the U.S.** The vaccine has been **manufactured by Valneva under the brand name Ixchiq**. It has been approved for administration in people who are 18 years or older, and are at increased risk of exposure to the virus.

Ixchiq is administered as a **single dose by injection into the muscle**. It contains a **live, weakened version of the chikungunya virus** and may cause symptoms in the vaccine recipient similar to those experienced by people who have the disease.

About chikungunya:

- The Chikungunya, is characterised by **severe joint pain and impaired mobility, and comes with fever**. It is a viral infection (CHIKV) transmitted primarily by the *Aedes aegypti* and *Aedes albopictus* mosquitoes and has been described as “an emerging global health threat.”
- The WHO fact sheet says Chikungunya is prevalent in Africa, Asia, and the Americas; but sporadic outbreaks have been reported in other regions. As per the **National Centre for Vector Borne Diseases Control, India had above 93,000 suspected chikungunya cases until September in 2023**.
- Since 2004, outbreaks of CHIKV have become more frequent and widespread, partly due to viral adaptations allowing the virus to be spread more easily by the ***Aedes albopictus* mosquitoes**.
- The joint pain is often debilitating and varies in duration; it can last for a few days, but also be prolonged over months. Other symptoms include joint swelling, muscle pain, headache, nausea, fatigue and rash.
- While severe symptoms and deaths from chikungunya are rare and usually related to other coexisting health problems, it is believed that the numbers are generally underestimated, because **chikungunya is often misdiagnosed as dengue or zika, as**

symptoms can seem similar.

- **As of now, there is no cure**, only symptomatic relief, with analgesics to help with the pain, antipyretics for the fever, rest, and adequate fluids. Prevention includes mosquito control activities, primarily falling under public health outreach and routine civic maintenance. Individuals are also advised to use medicated mosquito nets and ensure that there is no water stagnation in any containers at home, in order to prevent the breeding of mosquitoes.

India's Initiatives to Control Chikungunya:

- **The National Vector Borne Disease Control Programme (NVBDCP)** is a comprehensive programme for prevention and control of vector borne diseases namely Malaria, Filariasis, Kala-azar, Japanese Encephalitis (JE), Dengue and Chikungunya. It works under the **Ministry of Health and Family Welfare**.
- **Integrated Disease Surveillance Programme (IDSP)** launched during 12th Plan (2012–17) under the National Health Mission, sets up a Central Surveillance Unit (CSU) at Delhi, State Surveillance Units (SSU) at all State/Union Territories (UTs) headquarters and District Surveillance Units (DSU) at all Districts.
- Its objectives are to strengthen/maintain decentralized laboratory based and IT enabled disease surveillance systems for epidemic prone diseases to monitor disease trends, to detect and respond to outbreaks in the early rising phase through trained **Rapid Response Teams (RRTs)**.

Conclusion:

- Inspired by the fast track pathway drawn up by research into COVID, hopefully this approval will fast track the roll out of vaccines in countries where chikungunya is more prevalent, including Brazil, Paraguay, India and parts of western Africa.

Topic 4. IS IT BETTER TO EAT PLANT-BASED FOODS THAN RELY ON MEAT?

Important for the subject: Science and Technology

A recent article turned the spotlight on dietary habits – is it better to turn to fully plant based foods and avoid meat? The article relied on several existing studies **but stopped short of recommending either way**.

A Comparative Analysis

- Plant based diets have been **known to reduce the risk of diabetes, lower LDL cholesterol and non HDL cholesterol, improve weight loss, reduce progression of kidney disease and risk of stroke**, different types of cancer, especially colon cancer and breast cancer besides improving blood pressure, irritable bowel syndrome and irritable bowel disease.

- Plant based foods with fibre, protein, healthy fats and phytonutrients **can improve gut health whereas animal based foods cause gut dysbiosis.**
- **Animal based foods are devoid of fibre and red meat is especially a source of saturated fat.** Plant based foods also alter composition of gut microbiota as compared to animal based foods.
- Since plant based foods contain **antioxidant and anti-inflammatory** properties they are better.
- **The worst culprit is processed meat**, whether smoked, canned, fermented or preserved as they include added sodium and preservatives. Chemicals such as nitrates, nitrosamines, could cause gastrointestinal cancers as against unprocessed red meat.

What is plant-based meat?

- “Plant-based” refers to products that bio-mimic or replicate meat, seafood, eggs, and milk derived from animals — by looking, smelling, and tasting like them.

Main ingredients of plant-based meat include –

- **Protein** – The proteins in these foods may come from soya, peas, mushrooms, potatoes, fava beans, brown rice, or other sources.
- **Colouring** – Natural pigments from vegetable extracts, spirulina, and malt mimic the red hues of meat and brown when cooked.
- **Juiciness** – Plant oils may be added for juicy texture, flavour, and the appearance of marbled fat.
- **Nutrients** – Some recipes contain vegetables, nuts, and seeds, along with the vitamins, minerals, and dietary fiber they provide.

Topic 5. CRYOGENIC UPPER STAGE OF LVM3 MAKES A REENTRY

Important for the subject: Science and Technology

The Indian Space Research Organisation (ISRO) has said that the **cryogenic upper stage of the LVM3 M4 launch vehicle which launched India’s Chandrayaan 3 moon mission** has made an uncontrolled reentry into the earth’s atmosphere on November 15.

This **rocket body (NORAD id 57321)** was part of the vehicle that successfully injected the **Chandrayaan-3 spacecraft**.

- The probable impact point was predicted over the **North Pacific Ocean**. The final ground track did not pass over India. The re-entry of the rocket body took place within 124 days of its launch.
- The post-mission orbital lifetime of the LVM3 M4 Cryogenic upper Stage is, thus, fully compliant with the “**25-year rule**” for LEO (Low Earth Orbit) objects as recommended by the Inter-Agency Space Debris Coordination Committee (IADC).

What is LVM3?

- LVM3 (erstwhile GSLV) is an expendable space launch vehicle designed, developed, and operated by the **ISRO** to launch satellites and other space objects into Geosynchronous Transfer Orbits.
- It is 49.13 m tall and tallest among all other vehicles of ISRO. It is a **three-stage** vehicle with a lift-off mass of 420 tonnes.
- ISRO first launched LVM3 on April 18, 2001 and has made 13 launches since then.

Stages in LVM3

- The first stage comprises S139 solid booster with 138-tonne propellant and four liquid strap-on motors, with 40-tonne propellant.
- The second stage is a liquid engine carrying 40-tonne of liquid propellant. The third stage is the indigenously built Cryogenic Upper Stage (CUS) carrying 15-tonne of cryogenic propellants.

About Space Debris?

- Space debris refers to **man-made objects in Earth's orbit** that no longer serve a useful purpose.
- This includes **defunct satellites**, spent rocket stages, and fragments of debris from collisions or other events.

Threats from Space Debris:

- **Threat to Marine Life:** Even when falling into the oceans, which is more likely since 70% of the earth's surface is ocean, large objects can be a threat to marine life, and a source of pollution.
- **Threat for Operational Satellites:** The floating space debris is a potential hazard for operational satellites and colliding with them can leave the satellites dysfunctional.
- This overpopulation of space with objects and debris is referred to as **Kessler Syndrome**. **Reduction of Orbital Slots:** The accumulation of space debris in specific orbital regions can limit the availability of desirable orbital slots for future missions.
- **Space Situational Awareness:** The increasing amount of space debris makes it more challenging for satellite operators and space agencies to accurately track and predict the orbits of objects in space.

What are the Initiatives to Deal with Space Debris?

India:

- In 2022, **ISRO set up the System for Safe and Sustainable Operations Management (IS 4 OM)** to continually monitor objects posing collision threats, predict the evolution of space debris, and mitigate the risk posed by space debris.
- ISRO also carried out **21 collision avoidance manoeuvres of Indian** operational space assets in 2022 to avoid collisions with other space objects.
- ISRO has also set up a **Centre for Space Debris Research to monitor** and mitigate the threat of space debris.

- ‘**Project NETRA**’ is also an early warning system in space to detect debris and other hazards to Indian satellites.

Global:

- The **Inter-Agency Space Debris Coordination Committee (IADC)**, an international governmental forum, was established in 1993 to coordinate efforts between spacefaring nations to address the issue of space debris.
- The United Nations has established the Committee on the Peaceful Uses of Outer Space (**COPUOS**) to develop guidelines for the long-term sustainability of outer space activities, including the mitigation of space debris.
- The European Space Agency (**ESA**) has launched the **Clean Space initiative**, aimed at reducing the amount of space debris and promoting sustainable space activities.

What are the UN’s Five Treaties to Deal with Space Activities?

- **The Outer Space Treaty 1967:** Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies.
- **Rescue Agreement 1968:** Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space.
- **Liability Convention 1972:** It deals mainly with damage caused by space objects to other space assets, but it also applies to damage caused by falling objects on earth.
- The Convention makes the launching country “**absolutely liable**” to pay compensation for any damage caused by its space object on the earth or to a flight in air. The country where the junk falls can stake a claim for compensation if it has been damaged by the falling object.
- **The Registration Convention 1976:** Convention on Registration of Objects Launched into Outer Space.
- **The Moon Agreement 1979:** Agreement Governing the Activities of States on the Moon and Other Celestial Bodies. India is a **signatory to all five of these treaties** but has ratified only four. India did not ratify the Moon agreement.

Topic 6. GENE THERAPY FOR SICKLE CELL DISEASE

Important for the subject: Science and Technology

Britain’s medicines regulator has authorized the **world’s first gene therapy treatment for sickle cell disease**.

About the new therapy:

- Name of the therapy: **Casgevy**
- Developed by: **Vertex Pharmaceuticals** (Europe) Ltd. and **CRISPR Therapeutics**.
- Developed using: Gene editing tool **CRISPR**, which won its makers a **Nobel prize in**

2020.

- Approved for: Patients with **sickle cell disease** and **thalassemia** who are **12 years old and over**.
- Earlier treatment: To date, **bone marrow transplants**, extremely arduous procedures that come with very unpleasant side effects, have been the **only long-lasting treatment**.

How Casgevy works?

- It works by **targeting the problematic gene** in a **patient's bone marrow stem cells** so that the body can make properly functioning **hemoglobin**.
- Patients first receive a course of **chemotherapy**, before doctors take **stem cells** from the **patient's bone marrow** and use **genetic editing techniques** in a laboratory to fix the gene.
- The cells are then **infused back** into the patient for a **permanent treatment**. Patients must be hospitalized at least twice — once for the collection of the stem cells and then to receive the altered cells.

About Sickle Cell Disease and Thalassemia:

- Both **sickle cell disease** and **thalassemia** are caused by **mistakes in the genes** that carry **hemoglobin**, the protein in **red blood cells** that carry **oxygen**.
- In people with **sickle cell** a genetic mutation causes the cells to become **crescent-shaped**, which can **block blood flow** and cause **excruciating pain, organ damage, stroke** and other problems.
- It occurs more often among people from places where **malaria is or was common**, like **Africa, Caribbean and India**, and is also more common in certain **ethnic groups**, such as people of **African, Middle Eastern and Indian descent**.
- Scientists believe being a carrier of the sickle cell trait helps **protect against severe malaria**.
- In people with **thalassemia**, the genetic mutation can cause **severe anemia**. Patients typically **require blood transfusions every few weeks**, and injections and medicines for their entire life. **Thalassemia** predominantly affects people of **South Asian, Southeast Asian and Middle Eastern heritage**.

Topic 7. INDIA TARGETS \$40BN IN TECHNICAL TEXTILES

Important for the subject: Science and Technology

India's market for technical textiles is targeted to **touch \$40 billion by 2030** from the **current \$23 billion**.

Some Facts:

- The export of technical-textile products was expected to touch \$10 billion from the **current \$2.5 billion** in seven years.

- The National Technical Textile Mission, unveiled three years ago, has been extended till 2026. The government allocated ₹1,000 crore under the Mission for research and development and so far, 126 projects, with a total value of ₹371 crore, have been approved.
- A portal for start-ups in technical textiles segment to submit applications for support under the Mission would be unveiled soon.

What are Technical Textiles?

- Technical textiles are **functional fabrics** that have applications across various industries including automobiles, civil engineering and construction, agriculture, healthcare, industrial safety, personal protection etc.
- Technical Textile products derive their demand from the development and industrialization in a country.
- Based on usage, there are **12 technical textile segments**: Agrotech, Meditech, Buildtech, Mobiltech, Clothtech, Oekotech, Geotech, Packtech, Hometech, Protech, Indutech and Sportech.
- For example, 'mobiltech' refers to products in vehicles such as seat belts and airbags, airplane seats; geotech, which is incidentally the fastest growing sub-segment, used to hold back soil, etc.

What do we know about the National Technical Textiles Mission (NTTM)?

- It was approved in 2020 by the **Cabinet Committee on Economic Affairs (CCEA)** with total outlay of Rs.1480 Crore. The implementation period is four years, from FY 2020-21 to FY 2023-24.

Aim:

- The aim of the mission is to **position India as a global leader in Technical Textiles** by taking the domestic market size from USD 40 billion to USD 50 billion by 2024.
- It also supports the '**Make in India**' Initiative promoting domestic manufacturing of related machinery and equipment.

Components:

- **First component:** It will focus on research, development and innovation with an outlay of Rs. 1,000 crores.
- The research will be at both fiber level and application-based in geo, agro, medical, sports and mobile textiles and the development of biodegradable technical textiles.
- Research activities will also focus on the development of indigenous machinery and process equipment.
- **Second component:** It will be for the promotion and development of the market for technical textiles.
- The **penetration level of technical textiles is low** in India varying between 5-10% against the level of 30-70% in developed countries. The Mission will aim at an average

growth rate of 15-20% per annum by 2024.

- **Third component:** It will focus on export promotion so that technical textile exports from the country reach from Rs 14,000 crores to Rs 20,000 crores by 2021-2022 and ensure 10% average growth every year till the Mission ends.
- An export promotion council for technical textiles will be set up. **Fourth component:** It will focus on education, training and skill development.
- The **Mission will promote technical education** at higher engineering and technology levels related to technical textiles and its application areas.

Topic 8. U.S. DATA UNDERSCORE BENEFITS OF CHICKENPOX VACCINATION

Important for the subject: Science and Technology

The U.K. government announced that the **Joint Committee on Vaccination and Immunisation (JCVI)** had recommended a vaccine against chickenpox (varicella) should be added to routine childhood immunisation programme.

JCVI's recommendation comes nearly three decades after the U.S. introduced it in 1996, and a body of evidence emphasising the benefits of varicella vaccination.

About Varicella Zoster Virus:

- Varicella-zoster is a **herpes virus that causes chickenpox**, a common **childhood illness**. It is an exclusively human virus that belongs to the **α -herpesvirus family**. It is present worldwide and is **highly infectious**. Primary infection of this virus leads to acute varicella or "chickenpox".
- The infections can progress to the **central nervous system** involvement and severe complications.

Key Facts about Chickenpox:

- **Highly Contagious:** Chickenpox is an extremely **contagious disease**.
- **Symptoms:** Common symptoms include an **itchy, blister-like rash**, among others.
- **Rash Progression:** The rash typically begins on the chest, back, and face before spreading to cover the entire body.
- **Transmission:** Chickenpox is **transmitted through direct contact with an infected individual, inhaling air containing virus particles** from a sneeze or cough of an infected person, or contact with fluids from an infected child's eyes, nose, or mouth.
- **Incubation Period:** The incubation period for chickenpox ranges from **10 to 21 days**.
- **Seriousness:** Chickenpox can be particularly severe in certain populations, including pregnant women, babies, adolescents, adults, and individuals with weakened immune systems (lowered ability to combat infections).

Topic 9. AI POWERED WEATHER FORECASTING FROM GOOGLE

Important for the subject: Science and Technology

Google's **DeepMind** has developed an AI-powered weather forecasting model called **GraphCast** that can provide 10-day weather predictions in less than a minute.

The model has shown a 90% verification rate and surpasses the accuracy of traditional weather prediction technologies.

- GraphCast has been found to be 99.7% more accurate than the gold-standard system in some cases.
- The open-source tool can **detect extreme weather events** and has the potential to become more accurate with updated data.
- The **GraphCast weather prediction program uses the two most recent states of Earth's weather, including variables from the current time and six hours prior**, to predict the state of the weather six hours and up to 10 days ahead.

Other Applications of AI For Environment

Climate Modeling and Prediction

- AI has become **instrumental in enhancing climate models**, enabling more accurate weather forecasts and long-term climate change predictions.
- Through data analysis and **pattern recognition**, **AI-driven models contribute to a deeper understanding of climate dynamics**, thus facilitating informed decision-making for climate mitigation strategies.

Renewable Energy Optimization

- The **integration of AI in energy management systems has led to the optimization of renewable energy sources** such as solar, wind, and hydroelectric power.
- **AI algorithms analyze real-time data**, enabling energy grids to balance supply and demand dynamically. This, in turn, promotes **efficient energy production, consumption, and storage**, fostering the transition to sustainable energy systems.

Natural Resource Management

- AI-equipped sensors play a **pivotal role in monitoring environmental resources such as water quality, forest health, and soil conditions**.
- By providing **continuous data streams and early warnings**, these sensors aid in effective resource management, leading to sustainable practices in agriculture, forestry, and water conservation.

Biodiversity Conservation

- AI technology assists in monitoring and safeguarding biodiversity. **Cameras, drones,**

and sensors equipped with AI algorithms are employed for wildlife tracking and habitat preservation.

- The analysis of vast ecological datasets facilitates the identification of critical habitats, aiding conservation efforts and contributing to species preservation.

Waste Management and Recycling

- **AI-driven robotics and computer vision revolutionize waste management systems.** Robots capable of identifying and sorting recyclable materials streamline recycling processes, **minimizing landfill waste.**
- AI-powered solutions contribute to a circular economy by enhancing waste recovery and reducing the environmental impact of discarded materials.

Environmental Monitoring and Disaster Management

- The amalgamation of AI, remote sensing technologies, and IoT devices enables **real-time environmental Monitoring.** From tracking deforestation patterns to predicting natural disasters, AI enhances early warning systems.
- Rapid response and informed decision-making during emergencies minimize the impact of disasters on ecosystems and communities.

Topic 10. A NEW SENSOR TOOLKIT FOR STUDYING NEUROPEPTIDES

Important for the subject: Science and Technology

New biosensors have helped reveal the activity of neuropeptides in the brain, researchers report, providing novel tools for studying the release, function, and regulation of these crucial signalling molecules in vivo. According to a study, the approach has the potential to address questions regarding neuropeptides and their roles in health and disease.

About Neuropeptides and Their Detection

- **Neuropeptides are key signaling molecules in the endocrine and nervous systems that regulate many critical physiological processes,** including energy balance, sleep and circadian rhythms, stress, and social behaviors.
- Understanding the functions of neuropeptides in vivo requires the ability to monitor their dynamics with high specificity, sensitivity, and spatiotemporal resolution; however, this has been hindered by the lack of direct, sensitive and non-invasive tools.
- **A series of GRAB (G protein-coupled receptor activation-based) sensors** developed for detecting somatostatin (SST), cholecystokinin (CCK), corticotropin-releasing factor (CRF), neuropeptide Y (NPY), neurotensin (NTS), and vasoactive intestinal peptide (VIP).
- These fluorescent sensors utilize the corresponding GPCRs as the **neuropeptide-sensing module** with the insertion of a circular-permuted GFP as the optical reporter. This **design detects the binding of specific neuropeptides at nanomolar concentration** with a robust increase in fluorescence.

- These **GRAB neuropeptide sensors** are used to measure the **spatiotemporal dynamics of endogenous SST release** in isolated pancreatic islets and to detect the release of both CCK and CRF in acute brain slices.
- Moreover, endogenous CRF release induced by stressful experiences in vivo using fiber photometry and 2-photon imaging in mice are detected.
- Together, these new sensors establish a robust toolkit for **studying the release, function, and regulation of neuropeptides under both physiological and pathophysiological conditions.**

Topic 11. AI POWERED ‘CHEMIST’ MAKES OXYGEN FROM MARTIAN METEORITES

Important for the subject: Science and Technology

Oxygen Producing materials made from meteorites found on Mars have been produced using a robotic artificial intelligence (**AI**)-**chemist**.

Jun Jiang from the University of Science and Technology of China, Hefei, China and others **developed a robotic AI Chemist that is able to create catalysts that can be used to produce oxygen from Martian materials without human intervention.**

Using a machine learning model derived from both first principles data and experimental measurements, this method automatically and **rapidly identifies the optimal catalyst formula from more than three million possible compositions.**

- The trials on selected five different categories of meteorites that come from or have been confirmed to exist on Mars, which were analysed by the robotic AI chemist.
- **The robotic AI chemist was able to convert the meteorites into chemical compounds and make catalysts from these compounds before testing the catalysts’ oxygen production performance.**
- This process was repeated by the robot until the best catalyst had been found, which they suggest **could have taken 2,000 years of human labour.**
- This catalyst could **operate under simulated Martian conditions.** The robotic AI chemist allows for the automated production of catalysts using Martian meteorites, which **may lead to a way for humans to make oxygen on Mars in the future.**

Key Points Related to Mars

Size and Distance:

- It is the **fourth planet from the Sun** and the **second-smallest planet** in the Solar System. Mars is about **half the size of Earth.**

Similarity to the Earth (Orbit and Rotation):

- As Mars orbits the Sun, it completes one **rotation every 24.6 hours**, which is very

similar to one day on Earth (23.9 hours).

- Mars' axis of rotation is tilted 25 degrees with respect to the plane of its orbit around the Sun. This is similar to Earth, which has an axial tilt of 23.4 degrees.
- Mars has **distinct seasons like Earth, but they last longer than seasons on Earth.** Martian days are called sols—short for 'solar day'.

Other Features:

- The reason **Mars looks reddish is due to oxidation or rusting of iron in the rocks**, and dust of Mars. Hence it is also called the **Red Planet**.
- It has the **largest volcano** in the solar system i.e., **Olympus Mons**. It has two small moons, **Phobos and Deimos**.

What are the Various Mars Missions?

- NASA has a **lander (Mars Insight)**, **two rovers (Curiosity and Perseverance)**, and **three orbiters (Mars Reconnaissance Orbiter, Mars Odyssey, MAVEN)**.
- **ExoMars rover (2021) (European Space Agency)**
- **Tianwen-1: China's Mars Mission (2021)**
- **UAE's Hope Mars Mission (UAE's first-ever interplanetary mission) (2021)**
- **India's Mars Orbiter Mission (MOM) or Mangalyaan (2013)**

Topic 12. MODEST START TO BIG STRIDES: SPACE PROGRAMME TURNS 60

Important for the subject: Science and Technology

Sixty years ago, on **November 21, 1963**, India marked its entry into space exploration with the launch of a **715-kg Nike Apache rocket** from **Thumba, Kerala**.

This event set the **stage for significant milestones**, including the **launch of India's first truly indigenous rocket in 1969** and the **placement of the Rohini satellite into orbit in 1980**, making India one of the select countries capable of launching satellites using its own vehicles.

- **The Indian Space Research Organisation (ISRO)** was formed through international collaboration, with contributions from the **U.S., France, and the Soviet Union**.
- Over the years, **ISRO's progress led to the development of various launch vehicles**, such as **Augmented Satellite Launch Vehicles (ASLVs)**, **Polar Satellite Vehicles (PSLVs)**, and **Geostationary Satellite Launch Vehicles (GSLVs)**, enabling diverse applications like **remote sensing, weather forecasting, and deep-space science missions**.
- Recent successes, including the **Chandrayaan-3 mission**, highlight India's assured **access to space** and its **growing influence in global space exploration**. The **Sriharikota launch site has been pivotal**, witnessing **numerous successful launches** and contributing to India's space achievements.

What is the Origin and History of ISRO:

- India's space research activities began in the early 1960s when satellite applications were still in the experimental stages even in the United States.
- **Establishment of INCOSPAR:** Recognising the need for space research, it was established in 1962 under the Department of Atomic Energy (DAE) at the suggestion of Dr. Vikram Sarabhai.
- It was instrumental in building the Thumba Equatorial Rocket Launching Station (TERLS). The first sounding rocket (Nike-Apache) procured from the USA was launched from TERLS on November 21, 1963.
- **Establishment of ISRO:** ISRO was established on August 15, 1969, with headquarters in Bengaluru, to replace INCOSPAR with a broader mandate to harness space technology.

What are some key Centers of ISRO:

SRO Centres	Specification
Vikram Sarabhai Space Centre (VSSC), Thiruvananthapuram.	Building of Launch Vehicles.
U R Rao Satellite Centre (URSC), Bengaluru.	Designing and Development of Satellites.
Satish Dhawan Space Centre (SDSC), Sriharikota.	Integration and launching of satellites.
Liquid Propulsion Systems Centre (LPSC), Valiamala and Bengaluru.	Development of liquid stages including cryogenic stage.
Space Applications Centre (SAC), Ahmedabad.	Sensors for Communication and Remote Sensing satellites.
National Remote Sensing Centre (NRSC), Hyderabad	Remote Sensing satellite data reception processing and dissemination

Topic 13. CHIMAERAS – HOSTS TO MULTIPLE GENOTYPES, AND MAYBE HUMAN ORGANS

Important for the subject: Science and Technology

In a recent landmark study, scientists reported successfully generating a live chimaera in non-

human primate.

At present, **more than 3 lakh people are waiting for an organ transplant in India alone**, the global number is far higher, with no respite in sight. There is an **alarming disparity in the number of organ donors and the number of recipients**, and animals have played an important part in filling this gap.

Chimaeras in nature:

- A **genetic chimaera is a single organism composed of cells of more than one distinct genotype (or genetic makeup).**
- The animal kingdom has several examples of varying degrees of chimerism. The half-sider budgerigar, a type of common parakeet widely adopted as pets, has different colours on either side of its body due to chimerism.
- The anglerfish displays an extreme degree of symbiotic chimerism in which the male fish fuses with and is eventually absorbed into the female fish, mixing their genetic makeups into a single animal.
- Marine sponges are known to have up to four distinct genotypes in a single organism.

Chimerism in Humans:

- Natural Chimera occurs when the genetic material in one cell changes and gives rise to a clonal population of cells different from all the other cells.
- Zygote: The fusion of two fertilised zygotes early in the embryonic stage can also lead to a condition in which two genetic makeups coexist in a single individual.
- Foetus: Chimerism can also result from twin or multiple pregnancies evolving into a single foetus or a twin foetus being absorbed into a singleton.
- Blood Types: Researchers have also documented individuals living with two blood types. In fact, blood-group chimerism during multiple births is relatively common.
- Most chimaeras are detected during routine blood tests in hospitals or when family members undergo tests ahead of an organ transplant.
- Pregnant women have been known to harbour the genetic material of her foetus in the bloodstream during the pregnancy.
- Microchimerism: A phenomenon called microchimerism, in which traces of the foetus's genetic material are observed in mothers' tissues many years after childbirth, resulting in two different genetic materials in a single person.

Individual Chimerism:

- Individuals undergoing treatments like bone marrow transplants usually have their bone marrow destroyed and replaced by that from a suitable donor.
- Since the donor's bone marrow contains stem cells, they will produce blood cells that will subsequently repopulate the recipient's blood-cell repertoire. Eventually, the recipient will have blood cells that resemble the donor's and will be different from the

genetic makeup of the recipient's other tissues –resulting in a chimeric individual.

Chimaeras in non-human primates:

- **Non-human Chimera:** Previously, chimaeras have been induced in laboratory settings, of rat-mouse, human-pig, and human-cow. These were in a bid to develop model systems that could 'generate' human organs of a suitable size, anatomy, and physiology. While rat-mouse chimerics had a near-normal lifespan, human-pig chimaeras had to be terminated in three to four weeks.
- **Live infant chimeric monkey:** In the journal *Cell*, scientists reported the successful generation of a live chimaera in non-human primates – species that are actually evolutionarily close to humans. This is the first time scientists have succeeded in producing a live infant chimeric monkey.
- **Green fluorescent protein (GFP):** In studies with *Cynomolgus* monkeys, a.k.a. long-tailed macaques (*Macaca fascicularis*), researchers' extracted embryonic stem cells from one-week-old embryos. They modified the DNA in these cells to include a green fluorescent protein (GFP).
- These GFP-marked embryonic stem cells were then injected into recipient embryos that were implanted into surrogate female monkeys, which delivered six full-term offspring.
- The chimeric monkey had to be euthanised after ten days for health reasons. Extensive genome-sequencing investigations conducted with its cells showed a high degree of chimerism in its tissues, including eyes, fingernails, brain, heart, kidney, liver, gonads, and placenta.

Significance of Chimeric Research:

- **New Frontiers:** As such, this study opens new doors for scientists to use non-human primates to create chimaeras that could become models for basic and translational biomedical applications in the near future.
- **Ethical Issues:** Just like other advances in science, this study wasn't without limitations and ethical quandaries – and which we must address before thinking about the human biomedical applications.

Topic 14. FREEMARTINS: BLACK SHEEP AMONG THE CATTLE

Important for the subject: Science and Technology

Freemartins:

In **animal husbandry**, **cattle** that are born exhibiting **characteristics of both sexes** are called **freemartins**. **Freemartins** are **sterile female cattle** that result from the **twinning of a male and a female within the same uterus**. This phenomenon occurs in approximately **90%** of such **twin pregnancies** in cattle.

The **key reason** is the **exchange of blood between the male and the female foetuses** during gestation.

- Genetically, freemartinism is attributed to the **sharing of cells** carrying the **Y chromosome** from the **male twin** with the **female twin**. This **chromosome** triggers the development of **male reproductive organs** in the **male foetus**, while the **female foetus**, affected by the presence of **male hormones**, experiences **incomplete development of its reproductive system**. The end result is that the **freemartin** has an **underdeveloped or non-functional reproductive tract**.
- In agricultural settings, because **freemartins can't reproduce**, farmers often identify them through **physical and/or behavioural traits** to **cull them** from the breeding herd to **improve reproductive efficiency**.

Topic 15. 43% INCREASE IN MEASLES DEATHS FROM 2021-2022: WHO

Important for the subject: Science and Technology

The number of **measles deaths** worldwide **increased by 43 per cent** from **2021-2022**, following years of **falling vaccination rates**, according to a new assessment by the **World Health Organization (WHO)** and the **United States' Centers for Disease Control and Prevention (CDC)**.

In **2022**, there were an estimated **136,000 measles deaths** globally, most of which were among children.

- The **number of measles cases** across the world also **increased by 18 per cent** during the same period bringing the **total number of infections** to **nine million**.
- Among the **22 million children** who **did not receive their first dose of the measles vaccination in 2022**, more than half are residents of just **10 countries**: Madagascar, Nigeria, Pakistan, Angola, Brazil, Democratic Republic of the Congo, Ethiopia, India, Indonesia, and Philippines.

About Measles and Rubella:

Measles-

- **Measles** (also called rubeola) is a **very contagious respiratory viral infection** that causes a **total-body skin rash** and **flu-like symptoms**. It is **transmitted person-to-person** via droplets when infected people sneeze or cough.
- Initial symptoms usually occur **10–12 days** after infection and comprise high fever, runny nose, bloodshot eyes and Koplik's spots (tiny white spots on the inside of the mouth).
- Several days later, a rash develops and the most severe complication includes blindness, encephalitis (an infection that causes brain swelling), severe diarrhoea and pneumonia.
- There is **no specific medical treatment**.

Rubella-

- Rubella is a **viral disease** caused by the **rubella virus** that mostly affects the **skin and lymph nodes**. In kids, rubella (commonly called **German measles** or **3-day measles**) is

usually a mild illness.

- However, the **infection is dangerous for pregnant women** because it can **cause serious health problems** in their babies. **Rubella** is transmitted in **airborne droplets** from the nose, mouth or throat of infected people. **Measles** can be avoided with **two vaccination doses**- MCV1 and MCV2.
- **Low-income countries** — where the **risk of measles-related deaths is highest** — have the **lowest vaccination rate of 66 per cent**, indicating no recovery at all from the backslide during the pandemic.
- To **eradicate measles and rubella** by **2023**, **India** has plans to **vaccinate 95 per cent of the population** with **two doses of the measles and rubella vaccine** under the **Intensified Mission Indradhanush**, a flagship routine immunisation campaign of the **Union Ministry of Health and Family Welfare**.

Topic 16. ENERGY BURST IN DISTANT GALAXY DISTURBED IONOSPHERE

Important for the subject : Science and Technology

Introduction

About two billion years ago, far beyond our Milky Way galaxy, a huge star exploded into a supernova. This explosion sent out a massive burst of gamma rays, the most powerful type of energy wave in the electromagnetic spectrum.

Gamma-Ray Bursts: These bursts are short-lived but incredibly intense, often associated with the most dramatic events in the universe, like the death of massive stars.

Why is it important?

- These gamma rays travelled across space for billions of years, finally reaching Earth in 2022. When they arrived, they caused a significant disturbance in Earth's ionosphere, a layer of electrically charged gases high in our atmosphere.

About Gamma-Ray Bursts

- Gamma-ray bursts (GRBs) are incredibly intense flashes of gamma rays, which are the most energetic form of light in the electromagnetic spectrum. These bursts are the most powerful explosions observed in the universe.
- **Their Occurrence:** They usually happen when massive stars collapse into neutron stars or black holes, or during the merger of neutron stars. These cosmic catastrophes release a tremendous amount of energy.
- **Duration and Energy:** GRBs can last from a few milliseconds to several hours, but they typically last a few seconds. The amount of energy released in this short time can be more than the Sun will emit in its entire 10-billion-year lifetime.
- **Afterglow:** Following the initial burst, GRBs are often followed by an 'afterglow'

emitted at longer wavelengths (X-ray, ultraviolet, optical, infrared, and radio).

Its Implications

- **Lasting Effects:** The gamma rays disturbed the ionosphere for several hours and even set off lightning detectors in India.
- **Scientific Importance:** Although this burst didn't harm life on Earth, it showed how sensitive our ionosphere is to space events.
- **A Rare Event:** Such a powerful gamma-ray burst is expected to hit Earth only once every 10,000 years.
- **Looking Ahead:** Protecting Earth from Cosmic Threats
- **Preparing for Future Events:** Scientists are studying the potential risks of a similar event happening closer to Earth, within our own Milky Way.

Topic 17. MEET THE LANGLANDS PROGRAM, THE WORLD'S BIGGEST MATH PROJECT

Important for the subject : Science and Technology

Introduction

Robert Langlands, a mathematician famous for his "Langlands Program," has shifted his focus to Turkish literature in his later years.

Langlands program is about finding deep links between two areas of math: **number theory (the study of numbers)** and **harmonic analysis (a type of math that breaks down functions or signals into simpler parts)**.

Langlands Program and its Connection with Different Math Areas

- **Beginning:** In 1967, Robert Langlands, a young mathematician at Princeton, started this journey with a letter to another mathematician, Andre Weil, sharing some groundbreaking ideas.
- **Complex Ideas:** The program is full of complicated ideas that are hard for even experts to fully understand.
- **Goal:** It aims to connect number theory and harmonic analysis, two areas of math that don't seem related at first.

Motive of the Program

- **Abel's Ideas:** In 1824, Niels Henrik Abel showed that it's impossible to find a one-size-fits-all solution for certain math equations (polynomial equations) beyond a certain complexity.
- **Galois's Discovery:** Evariste Galois, who didn't know about Abel's work, suggested looking at patterns (symmetries) in the solutions of these equations instead of trying to solve them directly.

- **Galois Groups:** These are groups that show the patterns in the solutions of these equations and are key to the Langlands Program.
- **Linking Ideas:** The program tries to connect these Galois groups with something called automorphic functions, which would allow using calculus (a branch of math) to explore these equations, connecting harmonic analysis and number theory.

Automorphic Functions: A way to Connect Different Areas of Math

- **Automorphic Function's Example:** Think of functions that have a repeating pattern, like the way sine functions in trigonometry work.
- **Special Kind of Symmetry:** Automorphic functions have a unique property where they remain the same even after certain transformations, showing a special kind of symmetry.
- **Role in Langlands Program:** The program's goal is to link these special functions with Galois groups, leading to new ways of understanding and solving math problems.

Significance of the Program

- **Solving math problems:** In 1994, Andrew Wiles and Richard Taylor used ideas from the Langlands Program to solve Fermat's Last Theorem, a famous and old math problem.
- **Creating New Functions:** This program helps in making new types of automorphic functions, which could help solve other complex math problems, like the Ramanujan conjectures.
- **Geometric Langlands:** This is a branch of the Langlands Program that looks at connections between different fields like algebraic geometry, representation theory, and even physics.
- **Setting Connection between Math and Physics:** Recent studies suggest that this program might help in understanding things in physics, like the study of electromagnetic waves.

Topic 18. FSSAI OPERATIONALISES AMENDED MICRONUTRIENTS LIMITS IN PREMIX FOR FORTIFIED RICE KERNELS

Important for the subject: Science and Technology

The **Food Safety and Standards Authority of India (FSSAI)** has decided to operationalise **draft amendment regulations** regarding **standards of vitamin and mineral premix** used for manufacturing **fortified rice kernels (FRKs)**.

These amendment regulations define **limits for the addition of micronutrients per 100 grams** in **vitamin and mineral premix** used to make **FRKs**.

Fortified rice kernels are either **coated rice kernels** or **extruded rice-shaped kernels** prepared with a **premix of vitamins and minerals**. The amendment regulations will strengthen the **national fortification programme**.

- **FSSAI** has also released **guidelines** for the **sampling of fortified rice kernels**

(FRK)fortified rice (FR) and vitamin-mineral premix (VMP) for FRK.

- The prescribed method of sampling is **designed to ensure that fair and valid sampling procedures are used** when **FRK, FR and VMP** for **FRK** are being tested for compliance with a particular commodity standard.

Prescribed limits:

Micronutrients	Prescribed limit
Vitamin B9 (Folic acid)	45-55 mg/100 gms of premix
Vitamin B12	0.45-0.55 mg/100gm of premix
Iron (Ferric pyrophosphate)	17-20 gram/100 gms of premix
Sodium Feredetate	8-10 grams/100 gm of premix

Fortified Rice Programme:

- Central government initiative. It aims to supply **fortified rice in all States and Union Territories** through a **targeted public distribution system** by **2024** in a phased manner.

Rice Fortification:

- Fortification of rice is done to increase essential micronutrients like iron, zinc, and Vitamin A in the rice.
- The **Food Safety and Standards Authority of India (FSSAI)** defines fortification as “deliberately **increasing the content of essential micronutrients in a food** so as to **improve the nutritional quality of food** and to **provide public health benefits** with minimal risk to health”.
- The cooking of fortified rice does not require any special procedure. After cooking, fortified rice retains the same physical properties and micronutrient levels as it had before cooking. Fortified rice will be packed in **jute bags** with the **logo (+F)** and the line “**Fortified with Iron, Folic Acid, and Vitamin B12**”.
- Various technologies are available to add micronutrients to regular rice, such as **coating, dusting, and ‘extrusion’**.
- The **Extrusion technique** involves the production of **fortified rice kernels (FRKs)** from a mixture using an ‘**extruder**’ machine. The fortified rice kernels are blended with regular rice to produce fortified rice.

Topic 19. A RENEWED FOCUS ON EMERGING TECHNOLOGIES

Important for the subject: Science and Technology

Emerging technologies like cyber technology, Artificial Intelligence (AI), unmanned systems, and advanced computing are crucial for a nation's military.

Use of emerging technologies in the military:

- Under the 'UDAAN', the **Indian Air Force (IAF)** is using **AI, cyber and virtual reality** to address its **operational, logistical, and training needs**.
- Indian Navy is using AI, unmanned systems and advanced computing for **indigenisation** under project 'Swavlamban'.
- **India's first drone platforms (based on emerging technologies)** were inducted in the **late 1990s** by the Army.
- **India** has launched **communication satellites** to improve its **military communications capabilities**.
- **GSAT-7**, a Navy-specific communication satellite, was launched in **2013**, and **GSAT-7A** for the **IAF** in **2018**.
- In **2018**, the government established the **Defence Cyber Agency** and the **Defence Space Agency** to address threats from new domains.

Defence Cyber Agency (DCyA):

- **DCyA** is a **tri-service command** of the **Indian Armed Forces**.

Headquartered in New Delhi.

- The agency is tasked with **handling cyber security threats**.
- It draws **personnel from all three branches** of the Armed Forces.
- The **head of the DCyA** is an **officer of two-star rank** and reports to the **Chief of Defence Staff (CDS)** through the **Integrated Defence Staff (IDS)**.
- **Indian Navy Rear Admiral Mohit Gupta** was appointed in **May 2019** as the **first head of the DCyA**.
- As of **2021**, **DCyA** was fully operational with Army, Air Force, and Navy establishing their respective **Cyber Emergency Response Teams (CERT)**.

Defence Space Agency (DSA):

- It is a **tri-service agency** of the **Indian Armed Forces**. **Headquartered in Bengaluru, Karnataka, India.**
- The agency is tasked with **operating the space-warfare and Satellite Intelligence assets** of India. It draws personnel from **all three branches** of the Armed Forces.
- The agency is expected to be converted into a full-sized tri-service military command in the future.

Origin:

- The **Naresh Chandra Task Force** was set up in **July 2011** by **National Security Advisor Shivshankar Menon** to review the recommendations of the **Kargil Review Committee**.
- The Task Force recommended the creation of a **cyber command**, an **aerospace command** and a **special operations command**. All three units were proposed to be **tri-service commands**. The **DSA** is a downsized implementation of this proposal.

Topic 20. FREE CANCER CARE ALONE WON'T HELP INDIA FIGHT CANCER***Important for the subject: Science and Technology***

By 2040, according to one estimate, 20 lakh people a year will be diagnosed with cancer in India. Cancer is already the third leading cause of death in India.

A **June 2023** study reported that even among patients with **PMJAY** or other **state-sponsored health insurance coverage**, cancer treatment rendered catastrophic **health expenses** in more than **80%** and **impoverishment** in **more than 60%** of people.

The **financial burden** increases by adding to the **direct** and/or **indirect Out-of-pocket expenditure (OOPE)**.

- **Direct medical OOPE** includes doctor's consultation fees, cost of medicines, and medical tests, and **direct non-medical OOPE** includes costs of transport, accommodation, and food for people travelling to larger cities for treatment. **Indirect OOPE** accounts for the loss of productive hours and/or income.

Government efforts to reduce the financial burden:

- In **2012**, the **Haryana government** made **transport for patients with cancer** and one caregiver in public buses from their places of residence to their places of treatment **free**.
- In **Kerala**, patients with cancer are eligible for a **50% concession** on public bus tickets. In **2017**, **Delhi** launched the **Arogya Kosh** scheme to reduce the burden on **public health centres** and **avoid treatment delays**.
- Here, residents of **Delhi** making **less than Rs 3 lakh a year** are **eligible** to get certain tests, like ultrasound and CT scans, in private health centres for **free**.
- **Haryana, Tripura, and Kerala** have also floated a '**cancer pension**' to **financially assist patients with advanced-stage cancer**: **Rs 2,500 per month** in **Haryana** and **Rs 1,000** in **Tripura and Kerala**.

National Cancer Grid (NCG):

- The **National Cancer Grid (NCG)** is an initiative of the **Government of India** through the **Department of Atomic Energy** and its **grant-in-aid institution**, the **Tata Memorial Centre**, to **create a network of cancer centres, research institutes, patient groups and charitable institutions** across **India** with the **objective** of developing uniform standards

of patient care for **prevention, diagnosis, and treatment of cancer**; providing specialized training and education in oncology and facilitating collaborative basic, translational and clinical research in cancer.

National Cancer Registry Programme (NCRP):

- For a **database of cancer cases**, the **National Cancer Registry Programme (NCRP)** was initiated in **1982** by **ICMR**, which gives a picture of the magnitude and patterns of cancer.
- There are **two types** of registries; **Population Based Cancer Registry** and **Hospital Based Cancer Registries**, which were started in January **1982**.

GOALS & OBJECTIVES OF NCCP

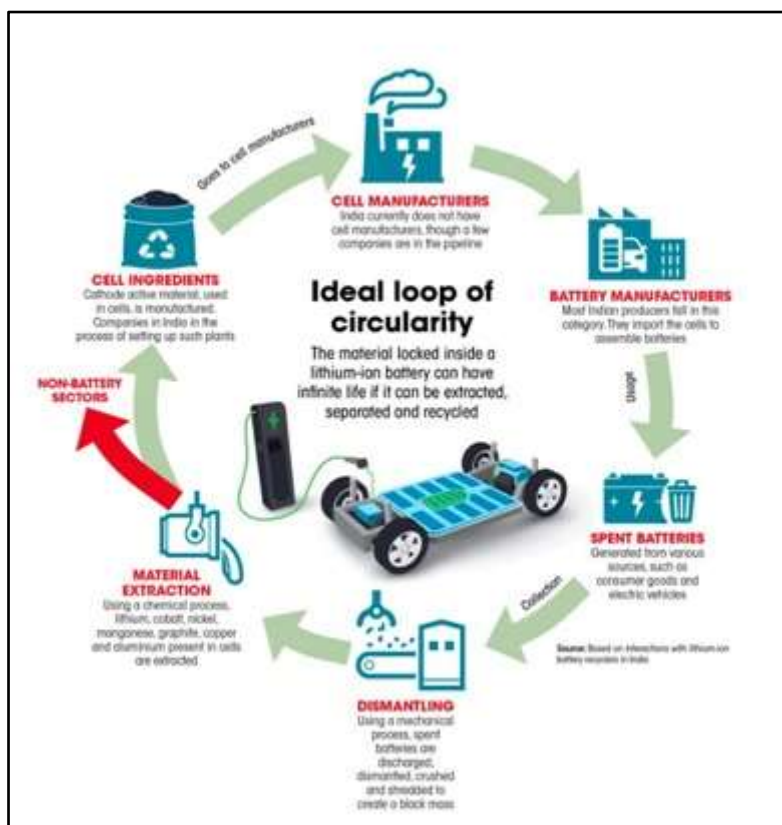
- **Primary prevention of cancers** by health education especially regarding hazards of tobacco consumption and the necessity of genital hygiene for the prevention of cervical cancer.
- **Secondary prevention** i.e. early detection and diagnosis of cancers, for example, cancer of the cervix, breast and oro-pharyngeal cancer by screening methods and patients' education on self-examination methods.
- **Strengthening of existing cancer treatment facilities**, which are woefully inadequate. **Palliative care** in the terminal stage of the cancer.

Other initiatives:

- **National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS)** is being implemented under the **National Health Mission (NHM)** for up-to-the-district level activities.
- Under the ambit of **Ayushman Bharat, Pradhan Mantri Jan Arogya Yojana (PM-JAY)** is being implemented to reduce the financial burden for poor and vulnerable groups arising out of catastrophic hospital episodes and to provide access to quality health services.
- **National Pharmaceutical Pricing Authority (NPPA)** launched a **Pilot on Trade Margin Rationalisation** for **42 anti-cancer drugs** in **February 2020** as a step towards making healthcare more affordable for suffering patients. This led to a reduction in the prices of drugs.

Topic 21. EV BATTERY RECYCLING CAN GIVE WINGS TO INDIA'S DECARBONISATION DREAMS BUT FACES STIFF CHALLENGES

Important for the subject : Science and Technology



Introduction:

India does not have enough **mineral reserves**. At present, its **electric vehicle sector** is almost entirely dependent on **imported battery cells**.

Most electric vehicles use **lithium-ion batteries** because they are **energy-dense** and offer **improved vehicle performance**. India does not have reserves of raw materials like **lithium, cobalt or nickel**.

India needs to revamp its **Battery Waste Management Rules of 2022** for efficient and economic extraction of **critical minerals** through **recycling**.

Recycling retired batteries can help the sector hedge **geopolitical risks**, and **build material security** while **minimising environmental hazards** from the **e-waste** and staying on the path to **Net Zero emissions**.

Battery recycling in India:

- **Exigo Recycling plant in Panipat, Haryana. Battery Smart-** India's largest network of

battery swapping stations for electric two- and three-wheelers.

- **Lico Materials**– A lithium-ion recycle plant in Raigad, Maharashtra.



Government's vision of electric vehicle growth in India:

- India plans to achieve **100 per cent electrification** of two- and three-wheelers and **65-70 per cent electrification** of buses by 2030.
- India is also one of the **130 signatories** to the **Zero Emissions Vehicle Declaration** made at a side event at the **UN Climate Conference (COP26)** in **Glasgow** in **2021**. Though **not legally binding**, signatories to the declaration will ensure that only zero-emission cars and vans are sold by **2040**.
- The **Accelerating to Zero coalition (A2Z)** launched at **COP27** will host the **ZEV declaration**.
- **Niti Aayog** in its **2022 report, Advanced Chemistry Cell Battery Reuse and Recycling Market in India**, estimates that the cumulative potential of **lithium-ion batteries** in **India** during **2022-30** will be around **600 GWh** across all segments in the base case.
- Of this, **128 GWh** will be available for **recycling** by **2030** with **46 per cent** (59 GWh) coming from **electric vehicles** alone.
- In **June 2023**, **India** joined the **Minerals Security Partnership** of the **Critical Mineral Club**, to catalyse investments from foreign governments and the private sector in the critical mineral supply and value chain.

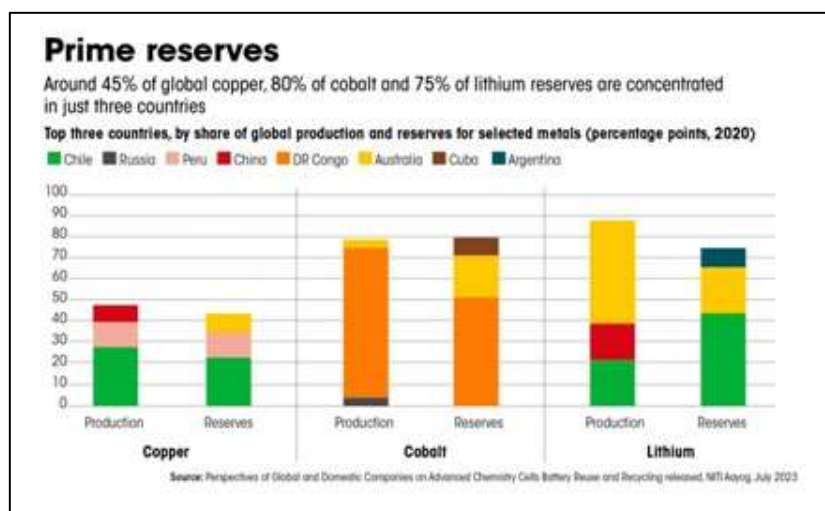
Lithium-ion Battery (Li-ion Battery):

- These cells have **three essential components**: **two electrodes** (an anode and a cathode) and a **medium** called an **electrolyte** (that transports ions between these electrodes, thereby generating current).

- Typically, the **anode** is made from **copper foil** with **graphite** on it, while the **cathode** is made up of **aluminium foil coated with lithium metal oxides** (lithium along with other minerals such as cobalt, manganese, iron and nickel, depending on the cell chemistry). The **electrolyte** is a **lithium salt solution** such as **lithium hexafluorophosphate**.

Black mass:

- In electric vehicles, a **battery is retired** once its performance degrades to **70-80 per cent** of its original capacity. These batteries can still be reused for **non-automotive applications**, such as **stationary energy storage** or **grid storage**.
- In the **recycling process**, the batteries are **deep discharged** using a **salt solution** and then passed through a crusher and a shredder after drying. The resultant material, called **black mass**, is a **mixture of all the valuable materials** contained in a **lithium-ion cell**.
- The **black mass** is checked for quality and relevant batches go through **extraction**, which is essentially a **chemical process** in which first **graphite** is recovered, followed by **lithium, nickel, cobalt** and **manganese** in that order.
- These materials can then be used to manufacture **anode** and **cathode** and are ready to enter the supply chain again. **Cobalt, lithium** and **nickel** retrieved through **recycling** can be used in **domestic industries** such as **steel and paints**.
- Most countries are trying to restrain the export of black mass to build their own battery recycling industry.
- The **International Council on Clean Transportation**, a US-based **non-profit**, estimates that globally, **1.2 million electric vehicle batteries** are expected to reach their end of life in **2030**, increasing to **50 million** in **2050**.



Market amiss:

- Currently, **India** does not have **cell manufacturing capacity** and domestic battery manufacturers import cells and assemble them.

Topic 22. HOW A NASA EXPERIMENT WILL STUDY ‘AIR GLOW’ TO UNDERSTAND SPACE WEATHER, WHY IT MATTERS

Important for the subject: Science and Technology

National Aeronautics and Space Administration (NASA) is set to launch the **Atmospheric Waves Experiment (AWE)** to study one of the **important drivers** of **Space weather** – the **Earth’s weather**.

What is Space weather and why is it important?

- The term “**space weather**” refers to the variable conditions on the sun and in space that can influence the performance of the technology we use on Earth. Space weather can produce electromagnetic fields that induce extreme currents in wires, disrupting power lines, and even causing widespread power outages.
- During certain days, when the **weather over Earth** turns **rough or extreme**, **Space weather**, too, can **suffer extreme events**. These have a **direct impact** on vital installations on Earth, like **satellite-based communication**, **radio communication**, and **Space-based aircraft orbits or stations** – affecting the smooth operations of the **navigation** and **Global Positioning Systems (GPS)** and **power grids**.
- Apart from influences from the **Sun-bound emissions**, **Space weather** also comes under the impact of **terrestrial weather**.

What is a gravity wave?

- In the atmosphere, there are a **wide variety of waves**, travelling both **horizontally** and **vertically**. **Atmospheric Gravity Waves (AGWs)** are one such kind of **vertical wave**. They are mostly generated when there is an **extreme weather event** or a **sudden disturbance** leading to a **vertical displacement of stable air**.
- **Natural phenomena** like **thunderstorms**, **hurricanes**, **tornadoes**, **regional orography** and others have the potential to send out a variety of periodic waves, including **AGWs**, in the **lower levels of the atmosphere**.
- When the **atmosphere is stable**, the **temperature difference** between the **rising air** and the **atmosphere** produces a force that **pushes this air to its original position**. The **air** will continuously **rise and sink**, thus **creating a wave-like pattern**.
- **AGW** is a wave that moves through a **stable layer of the atmosphere**, wherein the upward-moving region is the most favourable for the formation of **cloud patterns** or **streaks**.
- **AGWs** continue all the way to Space, where they contribute to the Space weather.

Atmospheric Waves Experiment (AWE):

- It is a **first-of-its-kind NASA** experimental attempt **aimed** at studying the interactions between **terrestrial** and **Space weather**. It is planned under **NASA’s Heliophysics Explorers Program**.

- It will study the links between how waves in the lower layers of the atmosphere impact the upper atmosphere, and thus, Space weather. It will be mounted on the exterior of the **Earth-orbiting International Space Station (ISS)**. From the **vantage point**, it will look down at the Earth and record the colourful light bands, commonly known as **airglow**.
- It will **measure the airglow at mesopause** (about 85 to 87 km above the Earth's surface), where the atmospheric temperatures dip to **minus 100 degrees Celsius**.

What will AWE do?

- **Advanced Mesospheric Temperature Mapper (ATMT)**, an instrument on board AWE will scan or map the **mesopause**. Using the **four identical telescopes** comprising an **imaging radiometer**, scientists hope to obtain the **brightness of light at specific wavelengths**.
- This information can then be converted into a **temperature map**, which could reveal the **airglow movement** and give clues on their role in the **upper atmosphere and Space weather**.

Topic 23. EUTELSAT ONEWEB TO LAUNCH SATELLITE CONSTELLATION FOR BROADBAND SERVICE IN INDIA

Important for the subject : Science and Technology

In the news:

One Web India, a subsidiary of **Eutelsat Group** and backed by telecom giant, **Bharti Group** said that it has **acquired approval** from India's space regulator, **IN-SPACe**, to launch **commercial satellite broadband services in the country**.

It is the **first** organisation to get approval for commercial satellite broadband services in India. The approval is valid for **five years**. It will meet **India's ambition** of providing **internet connectivity for all**.

Eutelsat OneWeb:

- **Eutelsat One Web** is a subsidiary of **Eutelsat Group** providing **broadband satellite Internet services in low Earth orbit (LEO)**.
- **Headquartered in London** and has offices in **Virginia, US** and a **satellite manufacturing facility in Florida** – **Airbus One Web Satellites** – that is a **joint venture with Airbus Defence and Space**.
- Founded by **Greg Wyler** in **2012**.
- As of 2021, Indian multinational company **Bharti Global**, France-based satellite service provider **Eutelsat** and the **Government of the United Kingdom** were the **company's largest shareholders**.
- On 28 September 2023, **Eutelsat** was completely merged with **OneWeb** and created

the “Eutelsat Group” company, with subsidiaries “Eutelsat” and “Eutelsat OneWeb”.

Indian National Space Promotion and Authorisation Centre (IN-SPACe):

- It is a **single-window, independent, nodal agency** that functions as an **autonomous agency** in the **Department of Space (DOS)**. It was formed following the **Space sector reforms** to enable and facilitate the **participation of private players**.
- **IN-SPACe** is responsible for **promoting, enabling authorising and supervising** various space activities of **non-governmental entities** including building launch vehicles & satellites and providing space-based services; sharing space infrastructure and premises under the control of DOS/ISRO; and **establishing new space infrastructure and facilities**.
- The agency **acts as an interface** between **ISRO** and **Non-Governmental Entities (NGEs)** and assesses **how to utilize India’s space resources better and increase space-based activities**.
- It also assesses the needs and demands of private players, including educational and research institutions, and explores ways to accommodate these requirements in consultation with ISRO.

Topic 24 . TRADE DEFICIT HITS RECORD HIGH IN OCTOBER DRIVEN BY GOLD IMPORTS

Important for the subject: Economy

According to official data released by the Commerce and Industry Ministry, festive demand also boosted silver imports which leaped 125 per cent to \$1.31 billion, Driven by gold and silver imports during the festive season, **India’s trade deficit** in October surged to a **record high** even as India’s goods exports entered the positive territory after eight consecutive months of decline due to weak demand in the **Western countries** and in **China** due to its **property sector crisis**.

- The trade deficit swelled to **\$31.46 billion** in October after gold imports surged by a massive 95 per cent to \$7.2 billion last month compared to October last year. Festive demand also boosted Silver imports which leaped 125 per cent to \$1.31 billion, official data released by the Commerce and Industry Ministry on Wednesday showed.
- While merchandise exports jumped **3 per cent to \$33.57 billion** compared to October last year, imports surged over 12 per cent to a record \$65.03 billion. Notably, labour-intensive sectors such as gems and jewellery, textiles, and leather declined 9.82 per cent, 5 per cent, and 8.08 per cent respectively. On the contrary, outbound shipments of electronic, and engineering goods registered a steep jump of 28.23 per cent and 7.20 per cent respectively last month compared to October last year.

Why buying gold is bad for the Indian economy

- India is the largest consumer of gold. India accounts for more than 30 per cent of the global gold market. However, the domestic production of gold in India is minimal. India

meets the high demand of gold from its domestic consumers by importing it.

- Though the universal acceptance, liquidity and safe haven against economic or political turmoil makes gold lucrative, it does not add much of a value to the economy. Most of the gold bought by us Indians is used for consumption purpose in the form of jewellery. Even from the investment perspective, majority of the Indians still prefer the traditional way of holding it in the physical form. Gold ETFs, which were first introduced in India in 2007, witnessed slow growth in the initial years. Over the past couple of years, investments in gold ETFs gained momentum.
- However, as per the statistics of Gold Council, jewellery accounts for nearly 75 per cent of the gold demand in India. When we compare this consumption rate with the global scenario, even the second largest importer of gold, i.e., China lags by more than 30 per cent in terms of consumer demand.
- If we compare these demand levels against the size of economy of major nations, India's GDP is much lower than that of China or the US. The high consumption rate of gold among Indians is unproductive for the Indian economy.
- **Current account deficit:** The first major problem the Indian economy faces with this high gold consumption rates is the increasing current account deficit (CAD). India has to pay for its gold imports using its foreign exchange reserves.
- Foreign exchange reserves hold a key especially among the developing countries, which have to import and use the industrial metals. Higher consumption of industrial commodities supports industrial production.
- The goods produced by consuming such commodities can be exported and the revenues can be used to fund the current account deficit. Even during its higher prices, the demand for gold did not go down.
- The oil imports are a huge burden on India's balance of payments. But oil consumption is something which India cannot reduce keeping its industrial usage in perspective. High gold imports and weak rupee have been the biggest stress points when it comes to narrowing the current account deficit.
- **Mis allocation of resource:** Misallocated capital is the second problem faced by the Indian economy due to its gold rush. Keeping the consumption aside, physical gold (mostly jewellery) is also considered as an investment among Indians.
- However, it is an investment that **does not add much value to the productive capacity of the economy**. Investments in the physical form of gold are either stored in bank lockers or get exchanged for making jewellery.
- It seldom gets **traded for money**. Imagine the same amount being invested in the capital markets. It allows the companies to **raise capital in the form of debt or equity and expand their business**.
- It can make a huge difference to the productive capacity of the economy. It not only just adds to the physical goods produced, it also has a potential to improve employment in a vastly populated country like India.
- It is a given fact that over the last decade, gold has given returns which no other asset class has been able to match. However, the demand for gold among Indians has always

been price independent. Gold is a traditional investment strategy Indians follow.

- The effect of high prices has been minimal on the volume of gold imported. The lower prices may increase the demand in the coming days. It is the economies of the US and Europe that play a major role in determining the price movements of gold. By importing gold for our consumption, we Indians are investing in the international markets and helping their economies.
- Over the last few years, the Indian markets are supported majorly by the foreign inflows. Participation of Indian domestic investors becomes all the more important for the Indian markets to prosper. Even for the transition of India from a developing market to developed market, it is important that the domestic investors stay invested in the capital markets.
- The lack of alternative investments is one of the reasons attributed for Indian investors favoring gold over domestic capital markets. More investors in the capital markets will also drive more investment options in the domestic markets. More than looking at it as an alternative investment, we invest in gold and real estate because we understand it easily.

Some steps taken by Government to curb gold imports

Gold Monetization Scheme:

- This was introduced to **mobilize fallow gold in homes and institutions**, use it productively, and lower import prices.

Sovereign Gold Bond (SGB) Scheme:

- Bonds are **issued by the Reserve Bank of India** on behalf of the Government of India.
- The bond has a **term of 8 years and has an option to terminate** from the 5th year.
- Its objective is to **reduce demand for physical gold** by shifting a part of the gold purchase by people to invest in gold bonds.

Trade Deficit:

- Trade deficit or negative balance of trade (BOT) is the **gap between exports and imports**. When money spent on imports exceeds that spent on exports in a country-a **trade deficit occurs**. The opposite of a trade deficit is a trade surplus.
- **India tends to have a trade deficit** every year because it imports far more (in terms of value, measured in \$) than it exports.
- A trade deficit **implies that Indians need dollars/forex more than the rest of the world** needs rupees for the trades to settle.
- A trade deficit puts pressure on the rupee's exchange rate against the dollar and persistently high trade deficits tend to weaken the rupee's exchange rate. It is a **part of the Current Account Deficit**.
- The current account records exports and imports in goods and services and transfer payments. It represents a country's transactions with the rest of the world and, like the capital account, is a component of a country's Balance of Payments (BOP).
- There is a **deficit in Current Account** if the value of the goods and services imported

exceeds the value of those exported.

Major components are:

- Goods, Services, and Net earnings on overseas investments (such as interests and dividend) and net transfer of payments over a period of time, such as remittances
- **Current Account Balance** = Trade gap + Net current transfers + Net income abroad.
- **Trade gap/Trade deficit** = Exports – Import

What causes a trade deficit?

- **Fall in export and rise in import volume**
- **Rise in Import price or fall in the export price**-India's exports of a particular commodity, say bananas, doubles in value terms (\$ terms) not because India exports more bananas, but because the price of bananas in the international market has doubled.

Is a trade deficit bad for a country's economy?

- If the trade deficit increases, a country's **GDP decreases**.
- A higher trade deficit can decrease the **local currency's value**.
- Impact the jobs market and lead to an **increase in unemployment**. If more mobiles are imported and less produced locally, then there will be less local jobs in that sector. More imports contribute to **imported inflation** and an increase in the **fiscal imbalance**, which is damaging to a developing country.

Balance of Payments

- Balance of Payments (BoP) of a country can be defined as a systematic statement of all economic transactions of a country with the rest of the world during a specific period usually one year.
- For preparing BoP accounts, economic transactions between a country and the rest of the world are grouped under – Current account, Capital account and Errors and Omissions. It also shows changes in Foreign Exchange Reserves.
- **Current Account:** It shows export and import of visibles (also called merchandise or goods – represent trade balance) and invisibles (also called non-merchandise). Invisibles include services, transfers and income. Thus,
 - The balance of trade in goods
 - The balance of trade in services.
 - Net current income e.g. profit from overseas investment.
 - Transfer payments e.g. payments to the EU.
- The balance of exports and imports of goods is referred to as the trade balance. Trade Balance is a part of 'Current Account Balance'.
- **Capital Account:** It shows a capital expenditure and income for a country. It gives a summary of the net flow of both private and public investment into an economy. External Commercial Borrowing (ECB), Foreign Direct Investment, Foreign Portfolio Investment, etc form a part of capital account.

- **Errors and Omissions:** Sometimes the balance of payments does not balance. This imbalance is shown in the BoP as errors and omissions. It reflects the country's inability to record all international transactions accurately.
- **Changes in Foreign Exchange Reserves:** Movements in the reserves comprises changes in the foreign currency assets held by the Reserve Bank of India (RBI) and also in Special Drawing Rights (SDR) balances.
- Overall the BoP account can be a surplus or a deficit. If there is a deficit then it can be bridged by taking money from the Foreign Exchange (Forex) Account

Current Account Deficit-

- **It is expected that the current account deficit of India will widen to a 10-year high of 3 percent of GDP in FY23 due to the Ukraine War.**
- A current account deficit occurs when the total value of goods and services a country imports exceeds the total value of goods and services it exports. If there is a deficit on the current account, there will be a surplus on the Financial/Capital account to compensate for the net withdrawals.

The size of current account deficit/surplus is affected by several factors including:

- **Overvalued exchange rate-**If the currency is overvalued, imports will be cheaper, and therefore there will be a higher quantity of imports. Exports will become uncompetitive, and therefore there will be a fall in the quantity of exports.
- **Economic growth-**If there is an increase in national income, people will tend to have more disposable income to consume goods. If domestic producers cannot meet the domestic demand, consumers will have to import goods from abroad.
- **Saving rates** – influencing the level of import spending, thus increasing the deficit.
- **Decline in competitiveness/export sector-**In the UK, there has been a decline in the exporting manufacturing sector because it has struggled to compete with developing countries in the far east. This has led to a persistent deficit in the balance of trade.
- **Higher inflation-**If India's inflation rises faster than our main competitors then it will make UK exports less competitive and imports more competitive. However, inflation may also lead to a depreciation in the currency to offset this decline in competitiveness.
- **Recession in other countries-**If India's main trading partners experience negative economic growth, then they will buy less of our exports, worsening India's current account.
- **Borrowing money-**If countries are borrowing money to invest e.g. third world countries, then this will lead to deterioration in current account position.
- **Financial flows to finance the current account deficit.-**If a country can attract more financial flows (either short-term portfolio investment or long-term direct investment), then these flows on the financial account will enable the country to run a larger current account deficit.

Impact for the economy

- Cost Push inflation- due to supply shortage
- Rise in import bill
- Decline in forex reserve
- Rise capital inflows- If there is a deficit on the current account, there will be a surplus on the Financial/Capital account to compensate for the net withdrawals. However, capital flows are likely to be lower than the current account deficit due to war led outflows.
- Higher external borrowing

Topic 25. FY24 FISCAL DEFICIT SEEN AT 5.9% EVEN IF NOMINAL GDP MISSES BUDGET ASSUMPTION: OFFICIAL

Important for the subject: Economy

Concerns have risen about nominal GDP growth not meeting the Budget assumption of 10.5 per cent as wholesale inflation has been negative for seven consecutive months. The Centre is confident of meeting its fiscal deficit target of 5.9 per cent of the Gross Domestic Product (GDP) for financial year 2023-24 even if there is any variation in nominal GDP growth as the tax revenue trend is comfortable so far, a senior government official said Wednesday.

The government is not looking at any curbs on spending, with some reallocation of savings expected to happen as it looks towards additional allocation for existing or new schemes in the supplementary demands for grants in the upcoming Parliament session.

- Concerns have risen about **nominal GDP growth** not meeting the Budget assumption of 10.5 per cent as wholesale inflation has been negative for seven consecutive months.
- Some estimates have pegged the **nominal GDP growth** to be around 9 per cent which could result in a lower GDP deflator as it is primarily made of the Wholesale Price Index (WPI).
- The fiscal slippage risks arise from the fact that the government's fiscal deficit target of 5.9 per cent is calculated as a percentage of the GDP. The latest print for WPI inflation rate unexpectedly fell to (-) 0.52 per cent in October, data released on November 14 showed.

Real v/s Nominal GDP

- The nominal GDP is the value of all the final goods and services that an economy produced during a given year. It is calculated by using the prices that are current in the year in which the output is produced. In economics, a nominal value is expressed in monetary terms.
- For example, a nominal value can change due to shifts in quantity and price. The nominal GDP takes into account all of the changes that occurred for all goods and services produced during a given year. If prices change from one period to the next and the output does not change, the nominal GDP would change even though the output remained constant. It is also called GDP at current prices.
- The real GDP is the total value of all of the final goods and services that an economy

produces during a given year, accounting for inflation and deflation. It is calculated using the prices of a selected base year. To calculate Real GDP, you must determine how much GDP has been changed by inflation since the base year, and divide out the inflation each year. Real GDP, therefore, accounts for the fact that if prices change but output doesn't, nominal GDP would change.

- In economics, real value is not influenced by changes in price, it is only impacted by changes in quantity. Real values measure the purchasing power net of any price changes over time.
- The real GDP determines the purchasing power net of price changes for a given year. Real GDP accounts for inflation and deflation. It transforms the money-value measure, nominal GDP, into an index for the quantity of total output. It is also called GDP at constant price
- **Real GDP= Nominal GDP/Price level in base year *100**

Topic 26. WALL STREET GAINS ON INFLATION DATA, BUT ROCKY ON GEOPOLITICS

Important for the subject: Economy

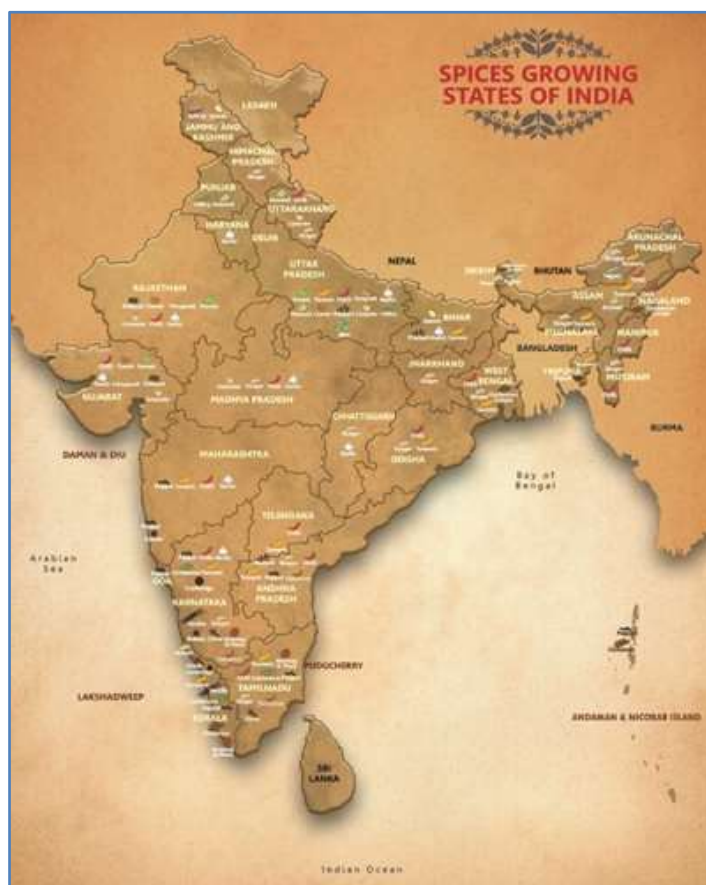
Wall Street's main indexes gained on Tuesday, shaking off an unconfirmed report of Russian missiles crossing into Poland that sparked volatility, as investors seized on softer-than-expected inflation data that raised hopes of a pullback in rate hikes by the U.S. Federal Reserve.

Equities were boosted by Tuesday's inflation report that showed producer prices rising 8% in the 12 months through October against an estimated 8.3% rise. The gains built on a rally that was kicked off late last week by a cooler-than-expected report on consumer prices.

- The 10-year US Treasury yield, which shocked investors by leaping over 5 per cent in October, tumbled below 4.5 percent following the soft inflation report in the US. Dow Jones index of the New York Stock Exchange gained 1.43 per cent on Tuesday. Nasdaq rose 2.37 percent
- The market's strong gap up jumps in response to positive global cues on account of this often than anticipated US and UK inflation data highlights the optimism for an end to the interest rate cycle as evidenced by the ease in bond yields
- This is likely to draw FPI flows in to emerging markets, which is good for India considering the current better earnings season and the festive demand pick-up. The drop in the retail inflation for India also improved the mood. India's annual retail inflation eased to four-month low of 4.87 per cent in October from 5.02 percent in the previous month.

Topic 27. 2ND NATIONAL SPICE CONFERENCE (NSC) IN HYDERABAD

Important for the subject: Economy



Organizers: The **World Spice Organization (WSO)** is hosting the 2nd National Spice Conference as the technical partner of the **All India Spices Exporters Forum (AISEF)**.

Dates: The conference is scheduled to take place on November 18 and 19.

Objective: The NSC aims to **provide a crucial platform for discussions within the Indian spice industry, fostering collaboration among farmer producers, spice manufacturers, and traders.**

- **Collaborators:** The conference is organized in collaboration with GIZ and IDH, the Sustainable Trade Initiative. Rainforest Alliance serves as the sustainability partner for the event.
- **Theme:** This year's NSC revolves around the theme **"Food Safe Spices: The Way Forward to a Stable & Sustainable Income."**
- **Perspective:** The conference will offer a **360-degree perspective on food safety and its positive impacts on income and profit in the spice industry.**
- **Business-Focused Segments:** Various sessions will cover topics such as **increasing income through sustainable and eco-friendly practices, technology-driven farming, food safety and compliance, funding opportunities for farmers/FPOs (Farmer**

Producer Organizations), better input management, improving productivity, and innovative processes and market trends.

National Spice Conference 2023: Overview

Theme:

- **“Food Safe Spices: The Way Forward to a Stable & Sustainable Income”**

Organizer:

World Spice Organisation (WSO):

- The WSO is spearheading efforts toward food safety, quality, and sustainability in the spice industry.

Focus:

- Building on the conclusions drawn from the previous National Spice Conference (NSC), the focus is on understanding the **positive impacts of food safety on income and profit for the farming community.**

Scope:

- The conference aims to **cover all nodes and aspects of the spice supply chain, providing a comprehensive, 360° vision on food safety.**

Rationale:

- Effective **food safety and quality control systems are emphasized not only for safeguarding public health but also for fostering economic development.**
- The goal is to improve livelihoods by expanding access to regional and international markets through enhanced food safety measures. The NSC-2023 **aims to contribute to the advancement of the spice industry by addressing critical aspects of food safety, quality, and sustainability, thereby ensuring a stable and sustainable income for the farming community.**

World Spice Organisation (WSO): Inception

Formation:

- The **WSO was established in Kochi, known as the spice capital of India.** It operates as a not-for-profit organization registered under the **Travancore Cochin Literary, Scientific, and Charitable Societies Act, 1956.**

Primary Objective:

Facilitating the Spice Industry:

- The primary focus of WSO is to **facilitate the spice industry in addressing issues related to “Food Safety & Sustainability.”**

Stakeholder Involvement:

1. WSO aims to achieve its objectives by involving all key stakeholders:
2. General Public
3. Industry Representatives
4. Academia
5. End-Users

Spice Renaissance:

- WSO envisions a “spice renaissance,” signifying a revival or rebirth of the spice industry. The establishment of WSO reflects a concerted effort to bring together diverse stakeholders and address critical issues faced by the spice industry, with a particular emphasis on food safety, sustainability, and social responsibility

World Spice Congress (WSC)**Inception and Purpose:**

- The World Spice Congress (WSC) was planned and conceived in 1990 as a platform for discussion and interaction between importers and exporters of spices.
- It serves as the conglomeration of the global spice industry, providing a forum for deliberating concerns and considerations in the sector.

Organizer:

- Organized under the leadership of the Spices Board, Ministry of Commerce and Industry, Government of India

Theme of WSC 2023:

- The theme for WSC 2023 is “VISION 2030: S-P-I-C-E-S,” representing sustainability, productivity, innovation, collaboration, excellence, and safety.

Key Facts about the Spices Board of India:

- The Spices Board of India was constituted on February 26, 1987, under the Spices Board Act of 1986. It resulted from the merger of the erstwhile Cardamom Board (1968) and Spices Export Promotion Council (1960).
- Functioning under the Ministry of Commerce & Industry, the board is responsible for export promotion of the 52 scheduled spices and the development of Cardamom (both small and large). It acts as a link between Indian exporters and importers abroad.

Main Functions of the Spices Board:

- Research, development, and regulation of domestic marketing of small and large cardamom. Post-harvest improvement of all spices.
- Promotion of organic production, processing, and certification of spices.

Development of spices in the North East.

- **Provision of quality evaluation services. About All India Spices Exporters Forum (AISEF).** The All India Spices Exporters Forum (AISEF) is an organization that represents the interests of spice exporters in India.

Formation:

- AISEF is a forum that brings together exporters of spices from across India.

Objective:

- The **primary objective of AISEF is to represent and promote the interests of spice exporters in the country.**

Membership:

- The forum consists of members who are engaged in the export of various spices.

Advocacy and Representation:

- AISEF serves as a platform for advocacy **on behalf of spice exporters, addressing issues related to trade policies, regulations, and market access**

About Codex Committee on Spices and Culinary Herbs (CCSCH)

- The **Codex Committee on Spices and Culinary Herbs (CCSCH) plays a crucial role in developing worldwide standards for spices and culinary herbs**

Codex Committee on Spices and Culinary Herbs (CCSCH):

Establishment:

- CCSCH was **established in 2013.**

Main Function:

- The committee's primary function is **to elaborate global standards for spices and culinary herbs, particularly in their dried and dehydrated states, covering whole, ground, and cracked or crushed forms.**

Host Country and Secretariat:

- India serves as the host country for CCSCH. The **Secretariat responsible for organizing the committee's sessions is the Spices Board under the Ministry of Commerce and Industry in India**

Codex Alimentarius Commission (CAC):

Establishment:

- CAC was established in **1963 as an intergovernmental body under the joint**

framework of the Food and Agriculture Organization (FAO) and the World Health Organization (WHO).

Secretariat:

- The CAC Secretariat is hosted at FAO headquarters in Rome.

Objectives:

- CAC aims to **protect consumer health and ensure fair practices in the food trade.**

Meetings:

- The commission convenes in regular sessions once a year, alternating between Geneva and Rome.

Membership:

- Currently, CAC has 189 Codex Members

Codex Alimentarius:

Nature:

- Codex Alimentarius is a compilation of international food standards adopted by CAC.

Coverage:

- The standards encompass various food categories, including processed, semi-processed, or raw foods, as well as materials used in further food processing.

Scope of Provisions:

- Codex provisions address the hygienic and nutritional quality of food, covering aspects such as microbiological norms, food additives, and residues of pesticides and veterinary drugs.

Spice exports from India

- Despite the COVID Pandemic, spices export from India has continued its upward trend during 2020-21 and has attained an all-time high of US \$ 4.0 billion mark for the first time in the history of spices export and the same trend continued during 2021-22
- During 2022-23, the export of spices/spice products from the country has been 1404357 tons valued Rs.31761 crore (3952.60 million US\$).

Topic 28. EFFORTS TO STOP COAL IMPORTS BY FY26: KEY POINTS

Important for the subject: Economy

Objective: The Ministry of Coal is actively working to cease coal imports by the fiscal

year 2025-26.

Comprehensive Approach: Various measures are being undertaken, including the enhancement of production from commercial and captive mines, to achieve the goal of self-sufficiency in coal.

Reforms: The Ministry is implementing a series of reforms to boost coal production and reduce dependency on imports.

- **Underground Mines Production:** The target is to increase coal production from underground mines to 100 million tonnes (mt) by 2030, employing mass production technology.
- **Commercial Mining:** The eighth round of commercial coal mines has been launched, involving the auction of 39 coal blocks located in Jharkhand, Odisha, Maharashtra, West Bengal, and Bihar.
- **Legislation:** The coal blocks fall under the purview of the Coal Mines (Special Provisions) Act (CMSP) and the Mines and Minerals (Development and Regulation) Act (MMDR).
- **Advisory Role:** SBI Capital Markets is the sole transaction advisor for the Ministry in these commercial coal mine auctions.
- **Rail Connectivity:** Efforts are being made to enhance rail connectivity for the efficient transportation of coal from mines.
- **Captive/Commercial Contribution:** Captive and commercial coal mines are making a substantial contribution to overall production, according to Coal Secretary Amrit Lal Meena.
- **Future Investment:** The Ministry emphasizes that investment in the coal sector offers good returns, considering the anticipated increase in domestic coal demand.
- **Underground Mining Expansion:** The Ministry aims to increase production from underground coal mines to 100 mt by 2030, focusing on policy measures to promote underground mining.
- **Environmental Impact:** Underground mining is highlighted for its lower environmental impact compared to open-cast mining, as it requires less deforestation and involves minimal displacement of people.

Underground Mining:

- **Underground mining is a method of extracting minerals and valuable resources from beneath the Earth's surface.** Unlike surface mining, where minerals are extracted from an open pit, underground mining involves digging tunnels and shafts to reach the deposits located deep below the surface. This method is used for various types of minerals, including coal, metals, gemstones, and other geological resources.

Commercial Mining:

- **Commercial mining** refers to the process where private sector entities are permitted to engage in coal mining activities for commercial purposes without any end-use restrictions. The key features of commercial mining include:
- The introduction of commercial mining represents a shift from the earlier regime, where coal mining was largely dominated by public sector entities. This reform is aimed at attracting private investment, fostering competition, and promoting efficiency in the coal mining sector.

Star Rating Registration process for Coal and Lignite Mines

- The **Ministry of Coal** has initiated the **Star Rating Registration process for Coal and Lignite Mines** for the financial year **2022-23**.
- **Parameters Evaluated:** The Star Rating policy assesses mines based on seven key parameters:

Mining Operations

1. **Environment-related parameters**
2. **Adoption of Technologies**
3. **Best Mining Practices**
4. **Economic performance**
5. **Rehabilitation & Resettlement**
6. **Worker-related Compliance and Safety & security.**

Process:

- Participating mines undergo a self-evaluation process. The top 10% performing mines undergo validation through inspections by a committee.
- The remaining 90% undergo an online review process. **All participants can contribute to the evaluation by reviewing other mines. The Coal Controller's Organization conducts the evaluation.**
- **Ratings range from Five Star to NO Star, comprehensively assessing each mine's achievements.**

Aim: The Star Rating system aims to:

- **Foster competitiveness among mines. Recognize outstanding performance based on compliance with statutory provisions.**

Acknowledge the adoption of advanced mining technology.

- Recognize economic achievements.
- **The Star Rating Registration process aims to improve competitiveness and recognize excellence in the coal and lignite mining sector based on a comprehensive**

evaluation of various parameters.

About Mines and Minerals (Development and Regulation) Act, 1957 (MMDR Act)

- The Mines and Minerals (Development and Regulation) Act, 1957 (MMDR Act) has undergone several amendments to address various issues and bring about reforms in the mineral sector
- Introduced auction-based mineral concession allocation to enhance transparency. Established **District Mineral Foundation (DMF)** for the welfare of communities affected by mining activities.
- Created the National Mineral Exploration Trust (NMET) to promote exploration.

Imposed stricter penalties for illegal mining.

2021 Amendment:

- Focused on further reforms in the sector.
- Removed the distinction between **captive and merchant mines**, aiming for a more competitive and efficient mining industry.

About Coal Controller Organisation

- The Coal Controller Organisation, under the Ministry of Coal, plays a crucial role in overseeing and regulating various aspects of coal production, quality, and commercial transactions in India.

Inspection of Collieries:

- Conducting inspections of coal mines to ensure the accuracy of the class, grade, or size of coal produced.

Directive Issuance:

- Issuing directives related to the declaration and maintenance of grades of coal from a seam mined in a colliery.

About Directorate General of Mines Safety (DGMS)

- The Directorate General of Mines Safety (DGMS) is another important regulatory agency, focusing on safety standards and practices in the mining industry. The mission of DGMS includes improving safety and health standards, implementing proactive safety and health strategies, and ensuring the well-being of personnel in the mining and petroleum industries.

About National Coal Index (NCI)

- The **National Coal Index (NCI)** is a price index introduced in **June 2020** in **India**. It serves as a measure reflecting changes in coal prices relative to a fixed base year, which is the **Financial Year 2017-18**. The NCI incorporates prices from various coal sales channels, including imports, and calculates the revenue share per tonne using a specific formula.

Key features of the National Coal Index (NCI) include:

Composition:

- The NCI comprises **five sub-indices**, categorizing them into **three for Non-Coking Coal** and **two for Coking Coal**. This subdivision allows for separate indices for different types of coal.

Purpose:

- The primary purpose of the NCI is to **provide a comprehensive and representative measure of coal price changes**. It is used to assess and reflect the dynamics of coal prices over time.

Auction Basis:

- The **Ministry of Coal** utilizes the **National Coal Index (NCI)** for the **commercial auction of coal mines**. The revenue share in these auctions is determined based on the NCI.

Inclusion of Imports:

- The NCI considers prices from **all coal sales channels, including imported coal**. This inclusive approach provides a holistic view of coal price movements.

Revenue Share Calculation:

- The **formula used in the NCI** determines the revenue share per tonne. This calculation is crucial for **commercial coal mine auctions**, where the revenue-sharing mechanism is employed.

Dynamic Indicator:

- By reflecting changes in coal prices, the NCI serves as a **dynamic indicator** that can be used by stakeholders in the coal industry for **decision-making and planning**.

Types of Coal Covered:

- The inclusion of sub-indices for **Non-Coking Coal** and **Coking Coal** acknowledges the **different characteristics** and uses of these types of coal in industrial processes.

Topic 29. MEASURES TO ADDRESS CONCERNS OVER THE GROWTH OF UNSECURED RETAIL LOANS

Important for the subject :Economy

The Reserve Bank of India (RBI) has taken measures to address concerns over rising systemic risks associated with the growth of unsecured retail loans.

Increased Risk Weights:

- Risk weights on unsecured consumer loans, **including credit cards, have been raised by 25 basis points (bps) for banks and Non-Banking Financial Companies (NBFCs).**
- Outstanding and new consumer credit exposure, excluding specific loans, will now attract risk weights of 125%, up from the current 100%.

Exclusions and Inclusions:

- For NBFCs, microfinance and Self-Help Group (SHG) loans are excluded from the higher risk weights.
- **Credit card receivables for commercial banks will now have a risk weight of 150%, up from the current 125%, while NBFCs will continue with 100%.**

Impact on Capital Requirements:

- The move is **expected to increase capital requirements for lenders, acting as a proactive step to enhance guardrails and strengthen internal resilience.**
- Higher capital buffers will provide lenders **with better cushioning against potential increases in Non-Performing Assets (NPAs).**

NBFC Exposure:

- Banks will need to **set aside a 25-percentage point higher risk weight for loans to NBFCs, excluding core investment companies.**
- This applies if the **current risk weight falls below 100%, based on the external credit rating assigned to the NBFC.**

Top-Up Loans and Sectoral Exposure:

- **All top-up loans against movable assets will be treated as ‘unsecured loans’ for credit appraisal, prudential limits, and exposure purposes.**
- Lenders are directed to review and **establish board-approved limits for sectoral exposure in consumer credit, with implementation by February 29, 2024.**

Expected Impact:

- The measures are anticipated to result in **higher capital requirements, potentially leading to increased lending rates for borrowers.**

About Capital to Risk-Weighted Asset Ratio (CRAR):

Definition:

- CRAR is a financial ratio used to **measure a bank's capital in relation to its risk exposure.**
- It **indicates the amount of capital a bank holds as a buffer to cover potential losses** on its loans and other assets.

Calculation:

- The CRAR ratio is calculated by **dividing a bank's capital (Tier 1 and Tier 2 capital) by its risk-weighted assets.**
- $CRAR = (\text{Tier 1 Capital} + \text{Tier 2 Capital}) / \text{Risk-Weighted Assets}.$

Components of Capital:

- Tier 1 Capital (Core Capital): This includes **equity capital, ordinary share capital, intangible assets, and audited revenue reserves.**
- Tier 2 Capital: This comprises **unaudited retained earnings, unaudited reserves, and general loss reserves.**

Importance of CRAR:

- CRAR is a critical tool for assessing a bank's financial health. It ensures that **banks have sufficient capital to absorb potential losses and continue lending safely.**
- It **protects depositors and provides assurance** of a bank's ability to sustain its operations.

Benefits of CRAR:

- **Risk Management:** CRAR helps banks manage and mitigate risks effectively.
- **Depositor Protection:** It safeguards depositors' funds by ensuring banks have enough capital to cover losses.
- **Sustainability:** It contributes to the stability and sustainability of banks' operations.
- **Lending Capacity:** **Maintaining a healthy CRAR allows banks to continue lending money to businesses and individuals.**
- In summary, CRAR is a key financial metric that provides insights into a bank's financial strength and its ability to withstand financial challenges and risks.

About Capital Adequacy Ratio (CAR)

- The Capital Adequacy Ratio (CAR) is a **key financial metric that measures a bank's capital adequacy and its ability to absorb potential losses arising from various risks.**

- It is a crucial component of the regulatory framework designed to ensure the stability and soundness of financial institutions. The CAR is expressed as a percentage and is calculated by dividing a bank's capital by its risk-weighted assets.
- The formula for calculating the Capital Adequacy Ratio is as follows:
- $$CAR = (\text{Tier 1 Capital} + \text{Tier 2 Capital} / \text{Risk-Weighted Assets}) \times 100$$

Tier 1 Capital:

- Tier 1 capital, also known as the “core capital,” includes the most reliable and liquid forms of capital. Common elements of Tier 1 capital include common equity, retained earnings, and certain qualifying preferred stock.

Tier 2 Capital:

- Tier 2 capital consists of subordinated debt, undisclosed reserves, and other less liquid forms of capital. It serves as a supplementary layer of protection for depositors and creditors in case of a bank's financial distress.

Risk-Weighted Assets (RWA):

- Risk-weighted assets represent a bank's total assets adjusted for risk.
- Different categories of assets carry different risk weights, reflecting the varying degrees of risk associated with each type of asset. The risk weights are determined by regulatory authorities based on the perceived riskiness of the assets.

Calculation Basis:

- The numerator (Tier 1 Capital + Tier 2 Capital) represents the bank's total capital, while the denominator (Risk-Weighted Assets) adjusts this total for the riskiness of the bank's asset portfolio. The resulting ratio is expressed as a percentage.

Regulatory Requirement:

- Regulatory authorities, such as central banks and banking regulators, set **minimum capital adequacy requirements that banks must meet**. Common international standards, such as those outlined in the Basel Accords (Basel I, II, and III), provide guidelines for calculating and maintaining the Capital Adequacy Ratio.

Minimum Requirement:

- The minimum acceptable level of CAR is specified by regulators to ensure that **banks have a sufficient cushion to absorb potential losses and withstand financial shocks**.

Core Investment Companies (CICs) – A Quick Overview

- **Specialized NBFCs:** CICs are specialized Non-Banking Financial Companies (NBFCs) with a specific focus.

- **Asset Size Requirement:** To be registered with the RBI as a CIC, a company needs to have an asset size exceeding Rs 100 crore.
- **Primary Business:** The main business of CICs is the **acquisition of shares and securities**. However, specific conditions apply to their investment portfolio.
- **Investment Conditions:** CICs are required to have at least 90% of their net assets invested in equity shares, preference shares, bonds, debentures, debt, or loans in group companies.
- **Group Companies:** Group companies are defined as entities related through various relationships such as **subsidiaries, joint ventures, associates, promoter-promotee relationships (for listed companies), related parties, common brand names, and investments in equity shares of 20% and above.**
- In summary, **Core Investment Companies are specialized NBFCs with a significant asset size that primarily engage in acquiring shares and securities, Important for the subject to specific investment conditions primarily related to group companies.**

Topic 30. INDIAN BANKS' NPAS TO DROP TO 3.5%, NET INTEREST MARGIN TO 2.9% BY FY25: S&P GLOBAL

Important for the subject: Economy

NPA Projections:

S&P Global projects Indian banks' nonperforming assets (NPAs) to drop to **5% by FY 2023–24** and further to **3.5% by FY 2024–25.**

Anticipates a decline in weak loans to **5% of gross loans by March 31, 2025.** Attributes improvement to factors like **healthy corporate balance sheets, tighter underwriting standards, and enhanced risk management practices.**

Key Factors Impacting Banking Sector:

- Expects **slower global growth and external demand**, but believes India's domestically oriented economy will be **less affected**. Forecasts **credit costs to normalize to 1.2%** for the next couple of years.
- Expects the RBI Governor-led Monetary Policy Committee (MPC) to **maintain a pause on interest rates.**
- **Does not anticipate a significant rise in interest rates** in the near term, limiting risks for the banking industry.

Concerns and Caution:

- Echoes concerns raised by **RBI Governor Shaktikanta Das** about the risk of **very high growth in personal loans.**
- Flags the rapid growth of **unsecured personal loans**, cautioning about

potential **incremental non-performing loans (NPLs)**.

Loan Growth and Economic Factors:

- Anticipates **loan growth in line with nominal GDP**, with **retail loan growth exceeding corporate loan growth**.
- Notes that **corporate borrowing is gaining momentum**, but the uncertain environment may **delay capital expenditure-related growth**.

Funding Profiles and Return on Assets:

- Expects banks' **funding profiles to remain sound**, supported by a **strong deposit franchise**.
- Despite potential challenges, deems the system's **return on average assets adequate**.

Challenges for Public Sector Banks:

- Public sector banks may face challenges due to a **relatively high volume of weak assets**, leading to **higher credit losses**.

Mixed Outlook for Finance Companies:

- Foresees a **mixed performance for finance companies (fincos)**, with **weaker asset quality compared to major private sector banks**.
- **The S&P Global report provides insights into the outlook for India's banking sector**, emphasizing improvements and potential challenges in the coming years.

About Net Interest Margin (NIM)

- Net Interest Margin (NIM) is a **key financial metric used in the banking industry to measure the profitability of a bank's core lending and investment activities**.
- It represents the difference between the interest income earned by a bank and the interest expenses it incurs relative to its interest-earning assets.

Net Interest Income (NII):

- Net Interest Income is the **difference between a bank's interest income and its interest expenses**. It is a measure of how much money a bank earns from its core lending and investment activities after accounting for the cost of funds.

Average Earning Assets:

- Average Earning Assets represent the **average value of a bank's interest-earning**

assets over a specific period. These assets include loans, securities, and other investments that generate interest income for the bank.

Calculation Basis:

- The numerator (Net Interest Income) represents **the earnings from interest-related activities, while the denominator (Average Earning Assets) adjusts this income for the average level of interest-earning assets deployed by the bank.** The resulting ratio is expressed as a percentage.

Significance:

- NIM is a critical metric for assessing a bank's ability to generate profits from its core banking operations. **A higher NIM indicates that a bank is earning more from its interest-related activities relative to the size of its earning assets.**

Margin Spread:

- NIM is often referred to as the “margin spread” or simply the “margin” **because it measures the spread or difference between the interest income and interest expenses.**

Factors Influencing NIM:

- NIM can be influenced by various factors, **including interest rates, the bank's lending and investment strategies, the cost of funds, and the economic environment.** Changes in interest rates, for example, can impact the profitability of a bank's interest-related activities.

Industry Benchmark:

- NIM is closely monitored by investors, analysts, and regulators as **an indicator of a bank's financial health and efficiency.** It is often compared to industry benchmarks and used in financial analysis to evaluate a bank's performance relative to its peers.

Understanding Non-Performing Assets (NPAs):

Definition:

- NPAs are assets of a bank that are not generating income.
- Specifically, **loans or leases failing to meet stated principal and interest payments.**

Risk to Banks:

- Loans on a bank's balance sheet are listed as assets.
- **Non-payment by customers poses the risk of declining asset values.**

Criteria for Classification:

- Loans have a grace period before being marked overdue. NPAs typically include **commercial loans over 90 days overdue and consumer loans over 180 days**

overdue.

- Agricultural loans are classified as NPAs if interest/principal remains overdue for two harvest seasons.

Categories of NPAs:

- Sub-standard (aged ≤ 12 months).
- Doubtful (aged > 12 months).
- Loss assets (identified as loss but not written off).

Prevention and Solutions:

Legal Mechanisms:

- Utilize Acts like **SARFAESI Act (2002)** and **Recovery of Debts Due to Banks and Financial Institutions Act (1993)** for legal recovery.
- **Debt Recovery Tribunals (DRTs)** and **Lok Adalats** expedite recovery through legal means.

National Asset Reconstruction Company Ltd. (NARCL):

Introduction:

- NARCL, established to address bad loans, will acquire the first set of NPAs exceeding ₹500 crore from banks.
- Proposed in the Budget for 2021-22, it aims to create a bad bank structure housing an **Asset Reconstruction Company (ARC)** and an **Asset Management Company (AMC)**.

Ownership and Collaboration:

- Collaboration between public and private sector banks.
- Majority ownership by state-owned banks.
- Assistance from **India Debt Resolution Company Ltd (IDRCL)**, primarily owned by private banks, in the resolution process.

Differentiation from Existing ARCs:

- Public sector character with government backing.
- Capacity to purchase significant accounts, freeing banks from holding these on their books.

Asset Reconstruction Company (ARC):

- Specialized financial institution acquiring NPAs from banks for balance sheet cleanup.
- Registered under RBI.
- Legal basis provided by the **SARFAESI Act, 2002**.

Legal Basis (SARFAESI Act, 2002):

- SARFAESI Act enables the establishment of ARCs in India.

Capital Requirements for ARCs:

- Amendment in 2016 set a minimum net-owned fund of Rs. 2 crores.
- Subsequent increase to Rs. 100 crores in 2017.
- Capital adequacy ratio requirement of 15% of risk-weighted assets.

Need for Bad Bank Model:

- Addressing total stress in the banking system exceeding Rs 15 lakh crore.
- Banks, strained with stressed assets and limited capital, face challenges in managing NPAs. The bad bank model aims to assist both the government and banks in dealing with the NPA burden.

Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest (SARFAESI) Act, 2002:**Purpose:**

- Allows banks and financial institutions to auction properties (residential and commercial) when borrowers default on loan repayments.

Objective:

- Aims to empower banks to take measures for the recovery or reconstruction of loans, reducing non-performing assets (NPAs).

Applicability:

- Effective primarily against secured loans where banks can enforce the security held against the loan.

Asset Reconstruction Companies (ARCs) and Securitization Companies (SCs):

- Promotes the establishment of ARCs and SCs to handle the NPAs accumulated by banks and financial institutions.
- These specialized entities play a crucial role in acquiring and managing distressed assets, contributing to the cleanup of banks' balance sheets.

Legal Foundation:

- SARFAESI Act, enacted in 2002, provides the legal basis for these measures to strengthen the financial system and address the issue of bad loans

About S&P Global Inc.:**Nature of Business:**

- S&P Global Inc. is an American publicly traded corporation.

Headquarters:

- The company is **headquartered in Manhattan, New York City.**

Primary Business Areas:

- S&P Global Inc. primarily operates in the **fields of financial information and analytics.**

Topic 31. AS RUPAY ON UPI FACES SOME ROADBLOCKS, NPCI EXPLORES CORRECTIVE OPTIONS

Important for the subject: Economy

The National Payments Corporation of India (NPCI) is working on strategies to **promote payments through RuPay credit cards linked to UPI (Unified Payments Interface).** This initiative aims to **boost the acceptance of RuPay credit cards on the UPI platform.** However, there have been challenges due to the **difficulty in distinguishing between card-on-UPI transactions and regular UPI transactions made via QR codes.**

Here are some key points related to this development:

Background:

- The government introduced **UPI payments via RuPay credit cards to enhance acceptance infrastructure for such cards.** This move was aimed at increasing the use of RuPay credit cards, but it faced challenges in terms of merchant acceptance.

Challenges:

- Merchants and banks find it challenging to differentiate between card-on-UPI transactions and regular UPI transactions. **Merchants are accustomed to a zero Merchant Discount Rate (MDR) for UPI transactions, but when a credit card is used, they receive less money.**

MDR Concerns:

- UPI transactions are generally free, **but when made via linked credit cards, they attract the same interchange and MDR as any other credit card transaction.** Some believe that the effective MDR on card UPI transactions is higher than card point-of-sale (POS) transactions.

Classification Mechanism:

- NPCI has implemented a mechanism that, **once integrated by payment gateways and intermediaries, enables merchants and banks to identify and classify the two types of transactions (card-on-UPI and regular UPI).** This allows for a proper assessment of charges.

Incentive Model:

- To encourage increased adoption and address the higher charges on RuPay UPI transactions, **NPCI is exploring a fee income-based incentive model. Payment gateways may compensate merchants for the higher charges compared to the zero charge on regular UPI transactions.**

About Merchant Discount Rate

- MDR stands for “Merchant Discount Rate.” **It is a fee charged from a merchant by a bank for accepting payments from customers through credit and debit cards.**
- MDR is a crucial component of the payment processing ecosystem and is typically borne by the merchant. **The rate is a percentage of the transaction amount, and it is deducted by the acquiring bank before transferring the funds to the merchant.**

Customer Makes a Card Payment:

- When a customer makes a payment using a credit or debit card at a merchant’s point of sale (POS) terminal or through an online platform, **the transaction involves various parties, including the cardholder, the merchant, and the banks.**

Processing the Transaction:

- The payment information is processed through the payment network, and the transaction is authorized by the cardholder’s bank (issuing bank).

Transfer of Funds:

- After authorization, **the funds are transferred from the cardholder’s account to the merchant’s account. However, before reaching the merchant, the acquiring bank deducts the MDR.**

MDR Deduction:

- The **MDR is a small percentage of the transaction amount, and it serves as compensation for the services provided by the banks and payment service providers in facilitating electronic transactions. The acquiring bank, which provides the merchant with the necessary infrastructure to accept card payments, collects the MDR.**

Distribution of Funds:

- The remaining amount after deducting the MDR is credited to the merchant’s account. **The MDR covers various costs, including interchange fees (paid to the card-issuing bank), network fees, and operational costs associated with maintaining the payment infrastructure.**

Unified Payments Interface (UPI):

- **Unified Payments Interface (UPI) is an instant real-time payment system that**

enables users to transfer money on a real-time basis across multiple bank accounts without disclosing their bank details to the recipient.

- It is one of the **major systems operated by the National Payments Corporation of India (NPCI)** and is widely used for digital transactions.

Key Points:

- **Real-Time Transactions:** UPI facilitates immediate fund transfers between individuals and businesses, providing a seamless and quick payment experience.
- **NPCI Systems:** UPI is a part of the NPCI-operated systems, **which include National Automated Clearing House (NACH), Immediate Payment Service (IMPS), Aadhaar-enabled Payment System (AePS), Bharat Bill Payment System (BBPS), RuPay, and others.**
- **Prominent UPI Apps:** Leading UPI apps include **PhonePe, Paytm, Google Pay, Amazon Pay, and BHIM.** BHIM is the government's offering in the UPI ecosystem.

BHIM (Bharat Interface for Money):

- **BHIM (Bharat Interface for Money)** is a **digital payment application** developed by the National Payments Corporation of India (NPCI).
- It operates through the UPI system, consolidating multiple bank accounts into a single mobile application for real-time fund transfers.

Key Features:

- **Real-Time Fund Transfer:** BHIM allows users to conduct real-time fund transfers between bank accounts.
- **Launch Date:** The app was launched in December 2016, contributing to the government's push for digital payments.

Authentication Levels:

- **Device Binding:** The app is linked to a device's ID and mobile number.
- **Bank Account Sync:** Users need to sync their bank accounts (both UPI and non-UPI enabled) to initiate transactions.
- **PIN Authentication:** Users set up a PIN for app login, and a UPI PIN associated with their bank account is required to complete transactions.

About NPCI:

- **Formation:** The National Payments Corporation of India (NPCI) was **incorporated in 2008** as a **"Not for Profit" company under the Companies Act 1956 (now Section 8**

of the Companies Act 2013).

- **Initiative:** NPCI is an initiative of the RBI and IBA, established under the provisions of the Payment and Settlement Systems Act, 2007. It aims to create infrastructure for the entire banking system in India, covering both physical and electronic payment and settlement systems.

Key functions and initiatives of NPCI include:

- **Unified Payments Interface (UPI):** NPCI developed and manages the UPI, which is a real-time payments system that enables users to link multiple bank accounts to a single mobile application. It facilitates the seamless routing of funds across various bank accounts.
- **Immediate Payment Service (IMPS):** NPCI launched IMPS, a real-time interbank electronic funds transfer system in India. It allows customers to transfer funds instantly between banks through mobile phones or internet banking.
- **National Financial Switch (NFS):** NFS is a centralized network that connects various banks and financial institutions for routing ATM transactions. NPCI operates and manages the NFS to ensure secure and efficient ATM transactions.
- **RuPay Card:** NPCI introduced RuPay, a domestic card payment network in India. RuPay cards are an alternative to international card schemes and are widely used for various transactions.
- **BHIM (Bharat Interface for Money):** NPCI developed the BHIM app, a UPI-based mobile payment application that allows users to send and receive money using their smartphones.
- **Aadhaar Enabled Payment System (AePS):** NPCI launched AePS, which allows users to make financial transactions at micro-ATMs using their Aadhaar number and fingerprint authentication.
- **National Automated Clearing House (NACH):** NPCI manages the NACH platform, which facilitates electronic clearing of payments for various financial transactions, including salaries, pensions, and dividends.

About National Common Mobility Card (NCMC)

- The National Common Mobility Card (NCMC) is an **inter-operable transport card system introduced in India, often referred to as 'One Nation One Card.'**

Key Features:

- **Inter-Operability:** The NCMC is designed to be an **inter-operable transport card, allowing users to pay for various modes of transportation seamlessly.** It covers services such as buses, metro, suburban railways, toll taxes, and parking charges.
- **Multi-Purpose Usage:** Apart from transportation services, the **NCMC can also be used for retail shopping and cash withdrawals. It aims to serve as a versatile card for different financial transactions.**

- **Automatic Fare Collection System:** NCMC operates as an automatic fare collection system, **eliminating the need for separate cards for different modes of transport**. It streamlines the payment process for commuters.
- **RuPay Card Integration:** The card runs on the RuPay payment network, which is a domestic card scheme in India. RuPay ensures that the card is accepted widely across various payment channels.
- **Stored Value:** The card holds a stored value that **supports offline transactions, providing flexibility to users**. It reduces dependency on continuous network connectivity for transaction processing.
- **Nandan Nilekani Committee:** The idea of the NCMC was recommended by the Nandan Nilekani committee, which was set up by the Reserve Bank of India. The committee focused on enhancing digital payment systems and reducing the reliance on cash.

Digital Personal Data Protection Act 2023 (DPDP)

Legislation Overview:

- DPDP is India's **flagship personal data protection legislation**.
- Comparable to the impact of GDPR in 2016, **DPDP is expected to significantly influence data protection practices in India**.

Corporate Evaluation:

- Corporates with EU headquarters and subsidiaries in India **must assess compliance with DPDP**.

Data Categories:

- DPDP lacks a **distinct category for sensitive personal data, treating all data with the same security measures**.
- Unlike GDPR and SPDI Rules, **DPDP doesn't distinguish between personal and sensitive personal data**.

Processor's Role and Penalties:

- DPDP holds **only the data fiduciary liable to the regulator**.
- Data processors' liability is governed by contractual agreements, **placing a higher burden on data fiduciaries**.

Data Transfer:

- **Cross-border data transfer under DPDP** is generally permitted, **with restrictions on transfers to specific countries or sectors**.
- Evaluation of sectoral laws impacting business is necessary for data transfer compliance.

Child Data:

- DPDP defines a **child** as an individual below 18 years, imposing stringent compliance.
- Prohibits behavioral monitoring/targeted advertising for child data and **mandates verifiable parental consent**.

Penalties:

- GDPR prescribes **penalty slabs based on breach nature**.
- DPDP sets maximum penalty amounts, **Important for the subject to factors like breach severity and mitigative actions**.

Implications for Businesses:

- DPDP, when implemented, will **bring substantial changes to privacy practices in Indian businesses**.
- Entities GDPR-compliant need to adapt policies, processes, and systems for DPDP compliance.

Conclusion:

- The differences between GDPR and DPDP necessitate a thorough evaluation of policies and practices for entities operating in India.

Topic 32. RISK WEIGHTS IN BANKING***Important for the subject: Economy***

Risk weights in banking refer to the **assigned measure of risk associated with various assets held by banks**. These weights are used in the calculation of regulatory capital requirements, determining how much capital a bank needs to hold based on the riskiness of its assets.

The higher the risk weight assigned to an asset, the more capital the bank must set aside to cover potential losses.

- **Regulatory Requirement:** Risk weights are a crucial component of the **Basel III** regulatory framework, which establishes international standards for bank capital adequacy.
- **Asset Risk Assessment:** Different types of assets carry different levels of risk. For example, **unsecured consumer loans, including credit cards, are often considered riskier than secured loans**. The risk weight reflects this difference.
- **Calculation of Capital Requirements:** The calculation involves **multiplying the risk weight assigned to each category of assets by the total amount of assets in that category**. The sum of these weighted assets determines the minimum capital a bank must maintain.
- **Impact on Capital Adequacy Ratio (CAR):** Changes in risk weights can impact

a bank's Capital Adequacy Ratio (CAR), which is the ratio of a bank's capital to its risk-weighted assets. An increase in risk weights may necessitate a higher capital buffer.

- **Recent Example:** In the provided context, the Reserve Bank of India (RBI) increased the risk weights on unsecured consumer loans, including credit cards, by 25 percentage points for banks and Non-Banking Financial Companies (NBFCs), bringing the risk weight to 125 percent. This move is expected to increase the capital requirements for banks and may lead to a decline in the Common Equity Tier-I (CET1) capital levels

Impact on Banks:

- The increase in risk weights is expected to result in a 5 percent increase in capital requirements for banks, amounting to ₹84,000 crores.
- **CET1 capital levels are anticipated to decline by 35-100 basis points (bps) for various banks.**
- Banks may pass on the impact through higher lending rates to maintain risk-adjusted returns. The move could moderate credit growth in segments affected by the risk weight hike.

Affected Segments:

- Consumer credit has been growing at a significant rate. The impact is estimated to be around 9.8 percent of total outstanding loans.
- **Sectors like unsecured lending, credit cards, and personal loans are likely to be affected.**

Market Reaction:

- **Shares of banks and financial companies declined following the announcement.** There may be an impact on the Return on Equity (ROE) of lenders. The cost of borrowing for NBFCs is expected to increase, leading to a rise in the cost of funds.

Impact of the increase in risk weights on unsecured consumer loans

- **The impact of the increase in risk weights on unsecured consumer loans, including credit cards, by the Reserve Bank of India (RBI) has several potential implications for the Indian economy**

Credit Growth Moderation:

- The move is expected to lead to a moderation in the growth of unsecured lending, particularly in segments like personal loans and credit cards.
- **Higher risk weights mean that banks will have to set aside more capital for these types of loans, potentially making them less attractive for lenders.**

Interest Rate Increase:

- Banks may respond to the increased capital requirements by raising interest rates on unsecured consumer loans to maintain their return on capital.
- **Higher interest rates on consumer loans could impact borrowing costs for individuals, leading to reduced consumer spending.**

Impact on Consumer Spending:

- The cost of borrowing for consumers, especially those relying on unsecured credit, may increase.
- This could **impact consumer spending patterns, as individuals may cut back on discretionary spending due to higher interest rates.**

Banks' Capital Adequacy and Profitability:

- Banks will need to ensure that they meet the higher capital requirements, which could impact their capital adequacy ratios.
- **The decline in the Common Equity Tier-I (CET1) capital levels for banks may affect their profitability and lending capacity.**

Sectoral Impact:

- Sectors heavily reliant on consumer credit, such as retail and consumer goods, may experience a slowdown in demand.
- **Financial institutions, particularly those with a significant portfolio of unsecured consumer loans, may see a temporary impact on their financial performance.**

Market Dynamics:

- The stock prices of banks and financial companies may be influenced by the market's perception of the impact on their profitability and growth prospects.
- **Investors may re-evaluate their positions in financial stocks based on the anticipated changes in the lending environment.**

Risks Mitigation:

- The regulatory measure is **aimed at mitigating risks associated with the rapid growth of unsecured consumer loans. It reflects a proactive approach by the RBI to address concerns related to asset quality and systemic risks.**

Competitive Landscape:

- The changes in risk weights could influence the competitive dynamics among financial institutions, with some players more affected than others.
- **Institutions with a higher share of unsecured consumer loans may face greater challenges in maintaining growth.**

Overall Economic Growth:

- The impact on consumer spending and lending activities can have broader implications for economic growth.
- **A slowdown in credit growth and consumer spending may contribute to a more cautious economic environment.**
- It's important to note that the full extent of the impact will depend on various factors, **including how banks adjust their lending practices, consumer behaviour, and the overall economic context.**

Basel III Norms:

- **Basel III refers to a set of international regulatory standards developed by the Basel Committee on Banking Supervision (BCBS) to strengthen regulation, supervision, and risk management within the banking sector.**
- **The framework was introduced in response to the global financial crisis of 2007-08 with the aim of enhancing the resilience of banks and reducing the likelihood of future financial crises.**
- Here are key components and objectives of Basel III:

Capital Adequacy:

- **Basel III introduces more stringent capital adequacy requirements, aiming to improve the ability of banks to absorb losses during economic downturns or financial crises.**

Common Equity Tier 1 (CET1) Capital:

- One of the central elements of Basel III is the **emphasis on Common Equity Tier 1 (CET1) capital, which represents a bank's core equity capital.** CET1 capital includes common equity, retained earnings, and certain regulatory adjustments.

Capital to Risk-Weighted Assets Ratio (CRAR):

- **Basel III mandates banks to maintain a minimum Capital to Risk-Weighted Assets Ratio (CRAR) of at least 8%. CRAR is a ratio that compares a bank's capital to the risk-weighted value of its assets, where assets are assigned different weights based on their risk.**

Leverage Ratio:

- **Basel III introduces a leverage ratio, which is a measure of a bank's capital to its total exposure. This ratio is designed to mitigate the risk of excessive leverage and acts as a backstop to the risk-weighted capital requirements.**

Liquidity Standards:

- The framework includes new liquidity standards to ensure that **banks maintain an adequate level of high-quality liquid assets to meet short-term liquidity needs.**

Systemically Important Banks:

- **Basel III identifies systemically important banks and imposes additional capital requirements on these institutions** to mitigate the risks they pose to the broader financial system.

About Additional Tier-1 (AT1) bonds

- **Additional Tier-1 (AT1) bonds are a type of financial instrument issued by banks to strengthen their core capital base and meet regulatory requirements, particularly under the Basel III framework.**
- Here are key features and characteristics of AT1 bonds.

Nature of AT1 Bonds:

- **AT1 bonds are unsecured, perpetual bonds, meaning they have no maturity date and do not need to be redeemed by the issuing bank. These bonds are a form of hybrid instrument, combining features of both debt and equity.**

Purpose of Issuance:

- **Banks issue AT1 bonds to enhance their capital structure and fulfill regulatory capital requirements, particularly the Common Equity Tier 1 (CET1) capital ratio mandated by Basel III.**

Coupon Payments:

- **AT1 bonds pay a fixed or floating coupon to investors.** However, the issuing bank has the discretion to skip coupon payments if it incurs losses, and it can only make payments from profits or revenue reserves.

Yield and Risk:

- **AT1 bonds typically offer higher yields compared to other types of bonds issued by the same bank, reflecting the higher risk associated with these instruments.**
- Investors are attracted to AT1 bonds for the potential of earning a higher yield, but they also bear the risk of non-payment of coupons and potential write-downs.

Call Option:

- **The issuing bank has the option to call back the AT1 bonds or repay the principal after a specified period, usually five years.** This gives the bank flexibility in managing

its capital structure.

Risk of Write-Down:

- In the event of severe financial distress, **if the bank's Common Equity Tier 1 (CET1) capital ratio falls below a certain threshold (Point of Non-Viability Trigger or PONV), the AT1 bonds can be written down or converted into equity.**
- The risk of write-down or conversion into equity is a unique feature of AT1 bonds and reflects their role as a form of contingent capital.

Rating:

- **AT1 bonds typically receive credit ratings that are lower than those of secured bonds issued by the same bank. The lower rating reflects the higher risk associated with these instruments.**
- In summary, **AT1 bonds play a crucial role in a bank's capital structure, providing a source of contingent capital that can absorb losses during periods of financial stress.**
- Investors in AT1 bonds accept higher risks in exchange for potentially higher yields, and the regulatory framework ensures the stability and resilience of the banking system.

About Common Equity Tier 1 (CET1) capital

- **Common Equity Tier 1 (CET1) capital is a key component of a bank's regulatory capital and is considered the highest quality of capital.** It represents the core capital that provides a financial institution with a substantial cushion against potential losses.
- **CET1 capital is a measure of a bank's financial strength and its ability to absorb losses without jeopardizing the stability of the financial system.**
- Here are key features and characteristics of CET1 capital:

Core Capital:

- **CET1 capital is part of the Basel III regulatory framework, which sets international standards for bank capital adequacy.** It is considered the most reliable form of capital as it consists mainly of common equity, which includes common shares and retained earnings.

Composition:

- **Common Equity Tier 1 capital includes common equity elements such as common shares and retained earnings.**
- It may also include other comprehensive income and certain regulatory adjustments.

Quality of Capital:

- **CET1 capital is classified as “going concern” capital, meaning that it is available to absorb losses while the bank continues its normal operations.** It is meant to provide resilience to a bank during economic downturns and financial stress.

Regulatory Requirements:

- Regulatory authorities, such as central banks and banking regulators, set minimum CET1 capital requirements that banks are required to maintain. These requirements are part of the broader capital adequacy standards aimed at ensuring the stability and solvency of financial institutions.

Risk-Based Capital Ratio:

- **CET1 capital is expressed as a ratio to risk-weighted assets (RWA). The CET1 capital ratio is calculated by dividing CET1 capital by the risk-weighted assets.**
- **The formula is CET1 Capital Ratio = CET1 Capital / Risk-Weighted Assets.**
- **Maintaining an adequate level of CET1 capital is essential for banks to meet regulatory requirements, support sustainable business operations, and instill confidence in depositors, investors, and other stakeholders.**

About ‘Point of Non-Viability Trigger’ (PONV)

- **The ‘Point of Non-Viability Trigger’ (PONV) is a regulatory mechanism that allows a regulatory authority, such as a central bank, to take over the management and operations of a distressed or failing bank.**
- This trigger is particularly relevant in the context of Additional Tier-1 (AT1) bonds issued by banks.
- Here’s how the PONV mechanism works:

Identification of Non-Viability:

- **If a bank reaches a point where it is no longer considered viable due to severe financial losses, regulatory authorities, such as the central bank, may determine that the bank has reached the “Point of Non-Viability.”**

Activation of PONV Trigger:

- **Once the regulatory authority determines that the bank is non-viable, it can activate the Point of Non-Viability Trigger. This triggers a set of actions and measures aimed at addressing the distressed situation of the bank.**
- The PONV mechanism is designed to ensure that **regulatory authorities have the tools**

and powers needed to intervene in a timely manner when a bank is facing severe financial distress. By activating the PONT trigger, the regulatory authority can take swift actions to prevent the failure of the bank and protect the interests of depositors, creditors, and the broader financial system. This mechanism is part of the broader regulatory framework, such as the Basel III norms, aimed at enhancing the stability of the banking sector.

About Capital to Risk-Weighted Asset Ratio (CRAR):

Definition:

- CRAR is a financial ratio used to measure a bank's capital in relation to its risk exposure.
- It indicates the amount of capital a bank holds as a buffer to cover potential losses on its loans and other assets.

Calculation:

- The CRAR ratio is calculated by dividing a bank's capital (Tier 1 and Tier 2 capital) by its risk-weighted assets.
- $CRAR = (\text{Tier 1 Capital} + \text{Tier 2 Capital}) / \text{Risk-Weighted Assets}$.

Components of Capital:

- Tier 1 Capital (Core Capital): This includes equity capital, ordinary share capital, intangible assets, and audited revenue reserves.
- Tier 2 Capital: This comprises unaudited retained earnings, unaudited reserves, and general loss reserves.

Importance of CRAR:

- CRAR is a critical tool for assessing a bank's financial health. It ensures that banks have sufficient capital to absorb potential losses and continue lending safely.
- It protects depositors and provides assurance of a bank's ability to sustain its operations.

Benefits of CRAR:

- **Risk Management:** CRAR helps banks manage and mitigate risks effectively.
- **Depositor Protection:** It safeguards depositors' funds by ensuring banks have enough capital to cover losses.
- **Sustainability:** It contributes to the stability and sustainability of banks' operations.
- **Lending Capacity:** Maintaining a healthy CRAR allows banks to continue lending money to businesses and individuals.

About Capital Adequacy Ratio (CAR)

- The Capital Adequacy Ratio (CAR) is a key financial metric that measures a bank's

capital adequacy and its ability to absorb potential losses arising from various risks.

- It is a crucial component of the regulatory framework designed to ensure the stability and soundness of financial institutions. The CAR is expressed as a percentage and is calculated by dividing a bank's capital by its risk-weighted assets.
- The formula for calculating the Capital Adequacy Ratio is as follows:
- $CAR = (Tier\ 1\ Capital + Tier\ 2\ Capital / Risk\text{-}Weighted\ Assets) \times 100$

Tier 1 Capital:

- Tier 1 capital, also known as the “core capital,” includes the most reliable and liquid forms of capital. Common elements of Tier 1 capital include common equity, retained earnings, and certain qualifying preferred stock.

Tier 2 Capital:

- Tier 2 capital consists of subordinated debt, undisclosed reserves, and other less liquid forms of capital. It serves as a supplementary layer of protection for depositors and creditors in case of a bank's financial distress.

Risk-Weighted Assets (RWA):

- Risk-weighted assets represent a bank's total assets adjusted for risk. Different categories of assets carry different risk weights, reflecting the varying degrees of risk associated with each type of asset. The risk weights are determined by regulatory authorities based on the perceived riskiness of the assets.

Calculation Basis:

- The numerator (Tier 1 Capital + Tier 2 Capital) represents the bank's total capital, while the denominator (Risk-Weighted Assets) adjusts this total for the riskiness of the bank's asset portfolio. The resulting ratio is expressed as a percentage.

Regulatory Requirement:

- Regulatory authorities, such as central banks and banking regulators, set **minimum capital adequacy requirements that banks must meet**. Common international standards, such as those outlined in the Basel Accords (Basel I, II, and III), provide guidelines for calculating and maintaining the Capital Adequacy Ratio.

Minimum Requirement:

- The minimum acceptable level of CAR is specified by regulators to ensure that **banks have a sufficient cushion to absorb potential losses and withstand financial shocks**.

Topic 33. NPCI – INDIA’S FINTECH GIANT

Important for the subject: Economy

Recognition:

Flagship products: **UPI (Unified Payments Interface) and RuPay card network.**

Products and Services:

Homegrown services: **IMPS, NFS, BHIM, BBPS, NACH, AePS.**

Contributions to changing how India deals with money.

Financials:

- Closed FY23 with ₹828 crore in net profit.
- Operates as a non-profit for the objective of public good.

Challenges regarding the business model and cost distribution.

Evolution and Monopoly:

- **Established in 2008, started operations in 2010, launched UPI in 2016.**
- Conversations around **monopolistic control and lack of healthy competition.**
- **Concerns about innovation and healthy competition** in the payments arena.
- **Lack of independent holding or supervisory organization raises concerns.**
- **Calls for encouraging participation from private players for industry growth.**

Performance and Reach:

- UPI processed 1,141 crore transactions in October 2023 worth ₹17.16 lakh crore.
- UPI transactions grew at a CAGR of 163% (FY18-FY23) in value and 56% in volume.
- **RuPay’s exponential growth in annualized rate (about 40% in FY17-FY22).**
- **Future Challenges and Succession:**
- Challenges regarding NPCI’s **reliance on a single entity for the country’s digital payments infrastructure.** Questions about NPCI’s future, governance, and succession management.
- **Need for succession planning given NPCI’s scale and criticality.**

Public Good vs. Profitability:

- NPCI operates as a nonprofit for public good, aligning with government objectives. Debates about whether NPCI should rethink its strategy for the larger good. Concerns about monopolistic control and the absence of healthy competition.

Global Acceptance and Market Share:

- NPCI aims for global acceptance, especially for UPI and RuPay.
- **Calls for private players' entry to build global scale and competitiveness.**
- **Plans for RuPay to gain market share in credit cards and achieve significant transactions.**

Profitability and Future Outlook:

- Profitability discussions expected once significant ground is covered. Government's decision on **NPCI's achievements, valuation, and potential listing.**
- **NPCI's grand plans include gaining a 10% market share in monthly credit card spends.**

Competition and Transformation:

- NPCI's **potential transformation into a 'Navaratna' or listing on exchanges.**
- Speculations on NPCI shedding its benevolence tag, **but potential competition from the private sector is essential.**

NPCI's Services:

- **IMPS (Immediate Payment Service):**
- Real-time interbank electronic funds transfer service.
- Enables **instant money transfer through mobile phones.**

NFS (National Financial Switch):

- Network that **connects multiple banks, allowing seamless electronic funds transfer.**
- Facilitates ATM transactions and POS (Point of Sale) transactions.

BHIM (Bharat Interface for Money):

- **UPI-based digital payment app.**
- Allows users to make quick, secure, and cashless transactions.

BBPS (Bharat Bill Payment System):

- **Centralized payment platform for various bill payments.**
- Enables consumers to pay bills seamlessly through a single platform.

NACH (National Automated Clearing House):

- Facilitates **bulk electronic transactions like salary payments, dividends, etc.** Provides a secure and efficient way for repetitive payments.

AePS (Aadhaar Enabled Payment System):

- **Allows Aadhaar-linked bank account holders to make financial transactions.**
- **Provides basic banking services through Aadhaar authentication.**

About NPCI:

- **Formation:** The National Payments Corporation of India (NPCI) was **incorporated in 2008** as a “Not for Profit” company under the Companies Act 1956 (now Section 8 of the Companies Act 2013).
- **Initiative:** NPCI is an initiative of the RBI and IBA, established under the provisions of the Payment and Settlement Systems Act, 2007. It aims to create infrastructure for the entire banking system in India, covering both physical and electronic payment and settlement systems.

Topic 34. REQUEST FOR AUTHORIZATION OF MORE PORTS FOR EXPLOSIVE EXPORTS

Important for the subject: Economy

Background:

Explosive manufacturing companies seek increased authorization for ports.

Aimed at **handling and dispatching explosives and ammunition abroad.**

Current Scenario:

- Only three authorized gateways for exports: **Chennai, Kochi, and Vizag**. Challenges for manufacturers, such as **Munitions India Ltd (MIL)** and **Economic Explosives Ltd (EEL)**, in transporting explosives.

Proposal:

- Request to **make more ports, especially on the western side, friendly for handling and dispatching explosives.**
- Ports like Mumbai and Kandla suggested to share infrastructure load for exports.

Rationale Behind the Proposal:

- Enhance infrastructure capacity.
- Reduce costs, logistic hassles, and time required for ferrying sensitive items.
- **Most explosives bound for Europe and West Asia; authorization of ports in the West would streamline the process.**

Under Consideration of Ministry of Defence:

- Under review by the Ministry of Defence.

Expected Impact on Exports:

- **Estimated increase in explosive exports from ₹200 crore (FY22) to ₹1,500 crore (FY23).**

Companies Involved:

- MIL and EEL, significant players in explosive manufacturing. **MIL specializes in**

military explosives, while EEL has diversified into military-grade ammunition.

Safety Standards and Infrastructure Upgrades:

- Authorization to handle explosives requires ports to upgrade safety standards.
- **Maintain a safe distance from the surrounding population.**
- Specific fire-fighting capacity, staff training, and adherence to safety standards are crucial.

Significance of Authorization:

- Enhances the country's defence export capabilities.
- Aligns with the increasing demand for explosive products abroad.

Future Implications:

- **Streamlined export processes benefitting explosive manufacturing companies.**
- Potential reduction in logistics-related challenges.

Overall Industry Impact:

- **Reflects the growth and importance of defence exports for India.**

Munitions India Ltd (MIL):

- **Type:** State-owned company.
- **Location:** Based in Pune, Maharashtra.
- **Expertise:** Specializes in military explosives.
- **Product Range:** Manufactures 300 different types of explosives, **including artillery shells, mortars, bullets, fuse and explosive fills like TNT, RDX, and MMX.**
- **Diversification:** Involved in **supplying companies both in India and abroad with military-grade products.**

Economic Explosives Ltd (EEL):

- **Type:** Private company.
- **Location:** Based in Nagpur, Maharashtra.
- **Core Business:** Historically involved in **commercial explosives.**
- **Diversification:** Recently diversified into **manufacturing military-grade ammunition.**
- **Strategic Shift:** Transition from commercial to military-grade explosives.
- **Industry Standing:** Significant player in the **explosive manufacturing sector.**

Types of Chemical Explosives:

RDX (Research & Development Explosive):

- Invented by German chemist Haning in 1899.

- Chemical name: **Cyclotrimethylenetrinitramine**.
- Also known as plastic exploder, cychlonite (USA), Hexogen (Germany), T-4 (Italy).
- Form: **Pure white crystalline powder**.
- Plastic Bonded Explosive (PBE): **RDX mixed with plastic substances like poly butine acrylic acid**.
- **Deadly destructor or cracker, contains powdered aluminum for optimal requirements.**

TNG (Tri Nitro Glycerine):

- **Colourless oily liquid used in making dynamite.**
- Also known as Nobel's oil.
- Invented in 1846.
- Preparation: **Mixing conc. H₂SO₄ and cone. HNO₃ with Glycerine.**

TNT (Tri Nitro Toluene):

- **Most frequently used explosive.**
- Preparation: **Reaction of toluene (C₆H₅ – CH₃) with conc. H₂SO₄ and conc. HNO₃.**
- Invented in 1863, commercial use started in 1914.

First user: UK troops.

Dynamite:

- Invented by Alfred Nobel in 1863.
- **Preparation: Absorbing inert substances like wood powder or absorbing in Kieselguhr.**
- **Nitro Glycerine Sodium Nitrate used in modern dynamite.**
- Gelatine Dynamite: Contains a small amount of nitrocellulose.
- **TNP (Tri Nitro Phenol):**
- Also known as **picric acid**.
- **Prepared by the reaction of phenol with cone. H₂SO₄ and cone. HNO₃.**
- **Ultra-exploder explosive.**

About Ammonium Nitrate:

- **Chemical formula NH₄NO₃, nitrogen-rich, soluble in water.**

Uses:

- Agricultural fertilizers.
- Ingredient in anaesthetic gases, cold packs.
- Main component in commercial explosives for mining and construction.

As Explosive:

- **Primary component of ANFO (Ammonium Nitrate Fuel Oil).**

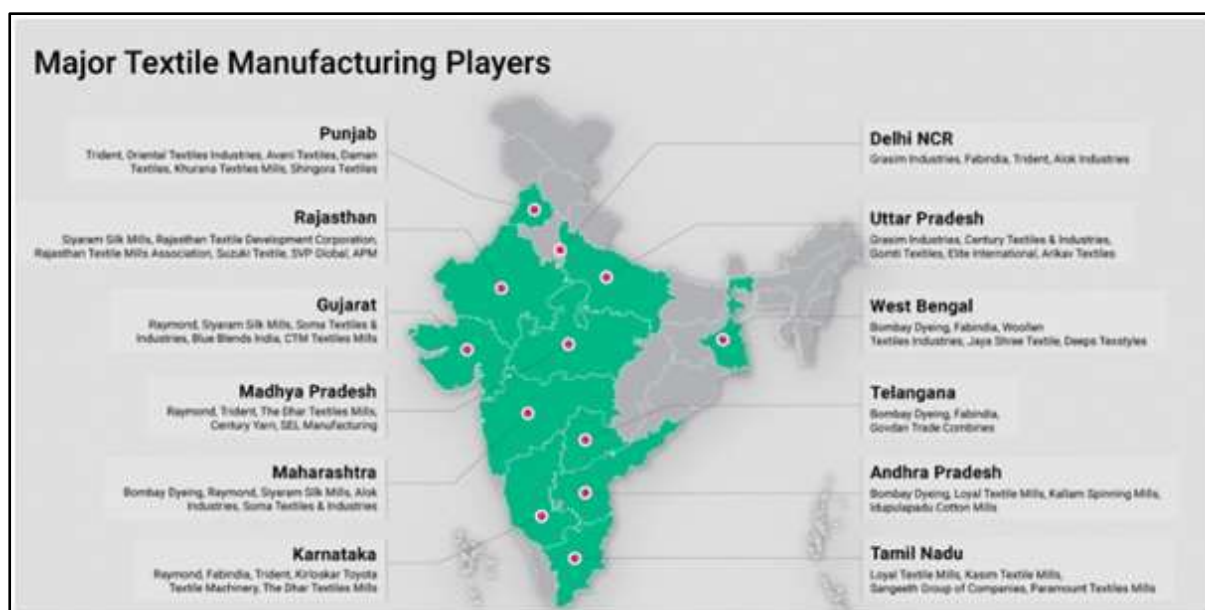
- Not explosive on its own; requires a primary explosive or detonator.
- Used in many Improvised Explosive Devices (IEDs) globally.
- Fire hazard, can explode through contact with an explosive mixture or due to the oxidation process at a large scale.

Regulations in India:

- Covered by **The Ammonium Nitrate Rules, 2012**, under the Explosives Act, 1884. Large-scale storage in populated areas is illegal.
- **Industrial license required for manufacture under the Industrial Development and Regulation Act, 1951.**
- License under the **Ammonium Nitrate Rules, 2012** required for any activity related to ammonium nitrate.

Topic 35. THE IMPACT OF BANGLADESH'S GARMENT WORKERS' STRIKE

Important for the subject: Economy



One of **Bangladesh's** largest labour forces — the **4.4 million**-strong **ready-made garment (RMG) sector workers** are protesting and demanding a trebling of their **legally mandated minimum wages** from **8,000 Bangladeshi Taka (BDT)**, or about **\$72**, to **23,000 taka (\$208)**.

What is fast fashion's significance to Bangladesh's economy?

- **Bangladesh** is the **world's second-largest exporter** of **fast fashion**, or **RMG**, after **China**, accounting for **85%** of the country's **export earnings** of **\$55 billion** in **2022**.
- It has a **global market share** of almost **8%**. The **main markets** are the **U.S.**, the **U.K.**, **Europe** and **Canada**. **H&M** is the **top importer**. Other big brands

include Levi's and Zara.

- The **4,000 odd manufacturing facilities** in the **RMG sector** are largely **small and medium enterprises (SMEs)**, mainly employing **rural women**, and it has been credited with helping the **country's drastic reduction in poverty** from **44.2% in 1991** to **5% in 2022** based on the **international poverty line of \$2.15 a day** (using 2017 Purchasing Power Parity exchange rate).
- **Rising remittances** by a **growing emigre population** is the other factor contributing to the **government's foreign exchange**.

Why are the RMG sector workers protesting now?

- **Bangladesh** follows a system of setting **minimum wages** for each sector of the economy, which is revised every **five years**. But, the **minimum wage for fast fashion workers** has not been updated since **2018**.
- Also, in recent years, **Bangladesh** has witnessed **steep inflation** due to the **COVID-19 pandemic** and the **volatility in oil prices** fuelled by the **Russia-Ukraine war**. Bangladesh's **foreign exchange reserves** have more than halved from a high of **\$48 billion in 2021** to less than **\$20 billion**.
- Several economists, including the **Bangladesh Institute of Labour Studies**, peg a **minimum monthly living wage** at **BDT 33,368 (\$302)**, for **garment workers** in a January 2023 report.
- The government imposed **import curbs** that have also affected the **functioning of the RMG sector**.

Global efforts:

- The **Berlin-based coalition** of "**19 garment brands and IndustriALL Global Union**", called **Action, Collaboration, Transformation (ACT)** has pledged "supporting a living wage in the RMG sector in Bangladesh through the promotion of the conditions to achieve an industry-wide collective bargaining agreement supported by Brands' purchasing practices".

Relationship between the RMG sector and carbon emissions:

- According to the **UN Environment Programme**, the **fashion industry** is responsible for anywhere between **2-8% of global greenhouse gas emissions**, making it "**one of the largest contributors to the climate and ecological crisis**".
- According to the **Green Climate Fund**, **Bangladesh's RMG facilities** are not operating efficiently because of continuous usage of old and badly maintained machines, coupled with poor energy management.
- **Bangladesh** has the **maximum** number of **U.S. Green Building Council-certified RMG factories** globally.

The location of the cotton textile industry is mainly affected by:

- raw material, proximity to the market, moist weather, capital, skilled and cheap labour,

Transport, sea-port, export facility and the domestic and international markets.

Major textile hubs:

Globally:

- Major cotton textile industrial regions are: **India, China** (Shanghai), **Pakistan, Bangladesh** (Dhaka), **Japan** (Osaka), **Egypt, Brazil, the USA** (New England region, North Carolina, South Carolina, Georgia, Alabama, Mississippi, Texas and California), and **the U.K.** (Manchester, Liverpool and Lancashire).

Topic 36. SOVEREIGN GOLD BONDS (SGBS)

Important for the subject: Economy

Sovereign Gold Bonds (SGBs) introduced in India in FY16 as an alternative to physical gold investments.

Introduction of SGBs: SGBs were introduced in response to a forex crisis partly caused by high gold imports. The bonds allow investors to hold gold without the need for physical import.

Features of SGBs:

- Denominated in rupees and **linked to the domestic gold price**. Provides an **assured return of 2.5% on the principal along with potential capital gains**.
- Issued by the sovereign, carrying zero risk of default.

Purpose of SGBs:

- Aimed to reduce the demand for physical gold by offering similar advantages through bonds.
- **Expected to be successful for investors seeking gold as an investment.**

Performance of SGBs:

- Over an eight-year period, **122 tonnes of gold equivalent bonds were issued**. SGB subscriptions increased during the pandemic, coinciding with a rise in gold prices.
- However, **the volume of bonds issued is only 1.8% of the total gold imports (7,003 tonnes) during the same period.**

Challenges and Limited Interest:

- Interest in SGBs has been limited.
- **Challenges include the cultural significance of physical gold, anonymity in holding physical gold, and the appeal of gold's 'snob' value.**

Comparison with Gold ETFs:

- Gold ETFs have not seen significant growth despite steady growth in assets under

management (AUM).

- **Financial alternatives, including Gold ETFs and SGBs, have not matched the appeal of physical gold holding.**

Government Initiatives:

- The government has attempted to encourage people to move from physical gold to financial instruments.
- **Electronic Gold Receipts (EGRs) and a vibrant futures market for gold derivatives on MCX are among the initiatives.**

Challenges in Shifting Preferences:

- The progress has not been significant, and households still prefer holding physical gold as a form of saving.
- Financial options like SGBs and EGRs are not widely accepted, especially in cultural practices like weddings.

Sovereign Gold Bonds (SGBs) Scheme

Issuance:

- Issued by the Reserve Bank of India on behalf of the Government of India.

Eligibility:

- **SGBs will be restricted for sale to resident individuals, HUFs (Hindu Undivided Family), Trusts, Universities, and Charitable Institutions.**

Tenor:

- **The tenor of the SGB will be for a period of eight years with an option of premature redemption after the 5th year.**

Minimum Size:

- Minimum permissible investment will be **one gram of gold.**

Maximum Limit:

- The maximum limit of subscription:
- **Individuals: 4 Kg**
- **HUF: 4 Kg**
- **Trusts and similar entities: 20 Kg per fiscal year (April-March)**

Joint Holder:

- In the case of joint holding, the **investment limit of 4 Kg will be applied to the first applicant only.**

Issue Price:

- The price of SGB will be fixed in Indian Rupees based on the simple average of the closing price of gold of 999 purity, **published by the India Bullion and Jewellers Association Limited (IBJA).**

Sales Channel:

- **SGBs will be sold through Scheduled Commercial banks, Stock Holding Corporation of India Limited, Clearing Corporation of India Limited, designated post offices, National Stock Exchange of India Limited, and Bombay Stock Exchange Limited, either directly or through agents.**

Interest Rate:

- **Investors will be compensated at a fixed rate of 2.50% per annum payable semi-annually on the nominal value.**

Collateral:

- **SGBs can be used as collateral for loans.**

Tax Treatment:

- **The interest on SGBs shall be taxable as per the provisions of the Income Tax Act, 1961. The capital gains tax arising on redemption of SGB to an individual is exempted.**

Tradability:

- **SGBs shall be eligible for trading.**

SLR Eligibility:

- **SGBs obtained by banks through the pledge process will be considered as part of their Statutory Liquidity Ratio requirements.**

India Bullion and Jewellers Association Ltd. (IBJA):

- **Established in 1919, IBJA is an association for bullion traders in India. Considered the apex association for all bullion and jewellery associations in India.**
- **Publishes daily Gold AM and PM Rates, which are benchmark rates for issuing Sovereign and Bonds. Involved in promoting trade through exhibitions and is setting up its own Domestic Gold Spot exchange, Bullion refinery, and gems & jewellery park.**
- **Assists its members in promoting and regulating bullion trade, resolving disputes, providing a neutral platform for weighing precious metals, and interacting with government departments.**

Gold Exchange Traded Funds (ETFs):**Overview:**

- Gold ETFs are passive investment instruments designed to track the domestic physical gold price. They invest in gold bullion and are units representing physical gold in paper or dematerialized form.
- Each gold ETF unit is equivalent to 1 gram of gold and is backed by physical gold of high purity.
- These funds combine the flexibility of stock investment with the simplicity of gold investments.

Exchange Traded Fund (ETF):

- An ETF is a basket of securities traded on an exchange, similar to a stock. ETFs reflect the composition of an index (e.g., BSE Sensex) and their trading value is based on the Net Asset Value (NAV) of the underlying stocks.
- Unlike mutual funds, ETFs can be bought and sold throughout the trading day. ETFs can own a diverse range of stocks across various industries or focus on a specific industry or sector.
- Bond ETFs include government bonds, corporate bonds, and municipal bonds, offering a cost-efficient and diversified investment portfolio to investors.

Topic 37. FUTURES AND OPTIONS (F&O) – MEANING, TYPES, DIFFERENCE***Important for the subject: Economy***

SEBI Chairperson, Madhabi Puri Buch, expressed surprise at the continued participation in F&O trading despite high odds against traders. SEBI's study indicated that nine out of 10 individual traders in the equity F&O segment incurred net losses.

Investment Perspective:

- Acknowledges a 90% chance of investors losing money in the F&O segment. Advises taking a long-term view and investing with a perspective to create wealth over a sustained period, surpassing inflation rates.

Investor Risk Reduction Access (IRRA) Platform:

- The IRRA platform was officially launched at Asia's oldest stock exchange, BSE, in Mumbai. Designed to address operational challenges faced by brokers and allow investors to review and manage their investments during technical glitches.

IRRA Platform Functionality:**Invocation Process:**

- Trading members facing technical glitches can invoke the IRRA platform. Basic checks are conducted, and the platform downloads trades from all trading venues. SMS/email notifications are sent to investors for accessing the platform.

Investor Interaction:

- Investors can review the status of their investments, orders, and place orders for squaring off or closing positions.
- IRRA is not available for algo trading and institutional clients.

Safety Net:

- Viewed as a safety net for regular and frequent traders.
- Particularly beneficial for traders for whom broker downtime is material, and open positions expose them to risk.

Risk Reduction Design:

- Emphasized that the platform is designed for risk reduction, not for fresh position taking. Capable of handling expected volumes with confidence.

Investor Risk Reduction Access (IRRA) Platform.

- The Investor Risk Reduction Access (IRRA) Platform is a system designed to address and mitigate risks for investors in the Indian stock market. It was officially launched by Securities and Exchange Board of India (SEBI), at the Bombay Stock Exchange (BSE).

Key Features of IRRA Platform:**Purpose:**

- The IRRA platform aims to provide a safety net for investors, particularly those who are regular and frequent traders in the stock market.

Operational Function:

- The platform is invoked by trading members (brokers) in case they face technical glitches or operational issues that impact their ability to service clients across various exchanges.

Futures and Options (F&O) – Meaning, Types, Difference:**Meaning:****Futures and Options (F&O):**

- F&O are financial derivatives that derive their value from an underlying asset, such as stocks, indices, commodities, or currencies.
- They are contracts between two parties, where they agree to buy or sell the underlying asset at a predetermined price on a future date.

Types of Derivatives:

Futures Contract:

- An agreement to **buy or sell the underlying asset at a future date for a predetermined price.**
- Obligatory for both parties to fulfill the contract on the agreed-upon date.

Options Contract:

- **Provides the buyer with the right, not the obligation, to buy (call option) or sell (put option) the underlying asset at a predetermined price.**

Key Differences:**Obligation:****Futures Contract:**

- Obligatory for both parties.
- **Buyer and seller must fulfill the contract.**

Options Contract:

- Buyer has the right but not the obligation to execute the contract.
- **Seller must fulfill the contract if the buyer chooses to execute.**

Risk and Reward:**Futures Contract:**

- **Unlimited profit potential but also unlimited loss.**
- Both parties are exposed to market fluctuations.

Options Contract:

- **Limited risk for the buyer (premium paid) with unlimited profit potential.**
- Limited profit for the seller (premium received) with unlimited risk.

Flexibility:**Futures Contract:**

- Less flexible as it's obligatory.
- Both parties are bound to the terms of the contract.

Options Contract:

- More flexible as the buyer can choose not to execute.
- Seller must comply if the buyer decides to execute.

Market Exposure:

Futures Contract:

- Direct exposure to market movements.
- **Profits or losses are tied to changes in the underlying asset's price.**

Options Contract:

- **Limited risk for the buyer as losses are capped at the premium paid.**
- Seller faces potential losses beyond the premium received.

Common Usage:**Futures Contract:**

- **Used for speculation and hedging.**
- Common in commodities, indices, and interest rates.

Options Contract:

- **Used for hedging, speculation, and income generation.**
- Common in stock markets for risk management.
- **Call Option and Put Option: Basics of Options Trading**
- Options trading involves two primary types of contracts: **Call Options** and **Put Options**.
- **These contracts provide investors with the right, but not the obligation, to buy or sell an underlying asset at a predetermined price (strike price) on or before a specified expiration date.**

Call Option: Definition:

- **A call option gives the holder (buyer) the right to buy the underlying asset at the specified strike price before or on the expiration date.**

Key Elements:

- **Buyer (Holder):** The individual who purchases the call option.
- **Seller (Writer):** The individual who sells (writes) the call option.
- **Strike Price:** The pre-determined price at which the buyer can purchase the asset.
- **Expiration Date:** The date by which the option must be exercised or it becomes invalid.

Scenario 1 – Call Buyer's Perspective:

- **If the price of the underlying asset rises above the strike price, the call buyer can exercise the option, buying the asset at a lower price than its current market value.**

Scenario 2 – Call Seller's Perspective:

- The call seller is obligated to sell the asset at the agreed-upon strike price if the call buyer decides to exercise the option. The seller receives the premium from the call buyer.

Put Option:

Definition:

- A put option gives the holder (buyer) the right to sell the underlying asset at the specified strike price before or on the expiration date.

Key Elements:

- **Buyer (Holder):** The individual who purchases the put option.
- **Seller (Writer):** The individual who sells (writes) the put option.
- **Strike Price:** The pre-determined price at which the buyer can sell the asset.
- **Expiration Date:** The date by which the option must be exercised or it becomes invalid.

Scenario 1 – Put Buyer's Perspective:

- If the price of the underlying asset falls below the strike price, the put buyer can exercise the option, selling the asset at a higher price than its current market value.

Scenario 2 – Put Seller's Perspective:

- The put seller is obligated to buy the asset at the agreed-upon strike price if the put buyer decides to exercise the option. The seller receives the premium from the put buyer.

Topic 38. FTA – INDIA AND UK

Important for the subject : Economy

Rules of Origin for Medical Devices: Finalizing rules of origin for the medical devices sector is a significant challenge in the proposed Free Trade Agreement (FTA) between India and the UK.

Importance of the Medical Devices Sector in India:

- India imports about 80% of its medical devices requirements. Top exporters of medical devices to India include the US, Germany, China, Singapore, and the Netherlands.

Ongoing Negotiations:

- Talks are in progress between India and the UK to **resolve differences related to rules of origin and customs duty concessions**. Negotiations encompass both goods and services sectors.

Issues in the Medical Devices Sector:

- Challenges are present in the rules of origin, and demands for customs duty concessions exist. The medical devices sector holds immense potential in India.

Government Initiatives to Promote Domestic Manufacturing:

- The Indian government has taken steps to promote domestic manufacturing of medical devices.
- Initiatives include the **Promotion of Medical Device Parks, National Biopharma Mission, and a Production-linked Incentive scheme for the sector.**

Major Categories of Imported Medical Devices:

- Consumables, disposables, electronics and equipment, implants, IVD reagent, and surgical instruments are the six major categories of medical devices mainly imported into India.

Rules of Origin in FTAs:

- Rules of origin prescribe the minimum processing that should occur in the FTA country for a product to be considered originating goods in that country.
- This provision prevents the dumping of goods from a third country into the FTA country without sufficient value addition.

Free Trade Agreement (FTA):

- Free Trade Agreement (FTA) is a pact between two or more nations aimed at reducing barriers to imports and exports among them. In an FTA, countries agree to facilitate the exchange of goods and services by minimizing or eliminating government tariffs, quotas, subsidies, or prohibitions.

Features:

- **Trade Policy Concept:** FTA is based on the concept of free trade, which stands in contrast to trade protectionism or economic isolationism.

Coverage:

- **Goods and Services:** FTAs typically cover trade in goods (agricultural or industrial products) and/or trade in services (banking, construction, trading, etc.).
- **Other Areas:** FTAs may extend to other areas such as intellectual property rights (IPRs), investment, government procurement, competition policy, etc.
- FTAs are pivotal tools in fostering economic cooperation between nations, enhancing trade opportunities, and contributing to global economic growth.

Rules of Origin:

- Rules of origin are criteria used to determine the national source of a product. They are essential as duties and restrictions often depend on the source of imports.

- **FTA Specific:** Each Free Trade Agreement (FTA) has its own set of rules of origin, defining the conditions a product must meet to qualify for preferential treatment under the agreement.

CAROTAR Rules (2020):

- Introduced by the Indian government in 2020.
- Importers must demonstrate that imported products underwent a value addition of at least 35% in the countries of origin. Previously, a country-of-origin certificate sufficed for availing FTA benefits. Customs (Administration of Rules of Origin under Trade Agreements) Rules, 2020 (CAROTAR, 2020)
- The CAROTAR, 2020 came into effect on September 21, setting guidelines for enforcing the 'rules of origin' concerning preferential rates on imports under free trade agreements.

Objective:

- The rules aim to provide guidelines for the enforcement of rules of origin, determining the origin of products eligible for preferential rates under various trade agreements.

Supplementing Existing Procedures:

- CAROTAR, 2020 complements existing certification procedures under different trade agreements like FTAs (Free Trade Agreements), PTAs (Preferential Trade Agreements), CECAs (Comprehensive Economic Cooperation Agreements), and CEPAs (Comprehensive Economic Partnership Agreements).

Notification and Familiarization:

- Notified by the Department of Revenue on August 21, 2020. Importers and stakeholders were given a 30-day period to familiarize themselves with the new provisions.

Due Diligence by Importers:

- Importers are now required to conduct due diligence before importing goods to ensure they meet the prescribed originating criteria.

Information Requirements:

- The rules specify a list of minimum information that importers must possess. Importers need to enter certain origin-related information in the Bill of Entry, aligning with the Certificate of Origin.

Preventing Low-Quality Products and Dumping:

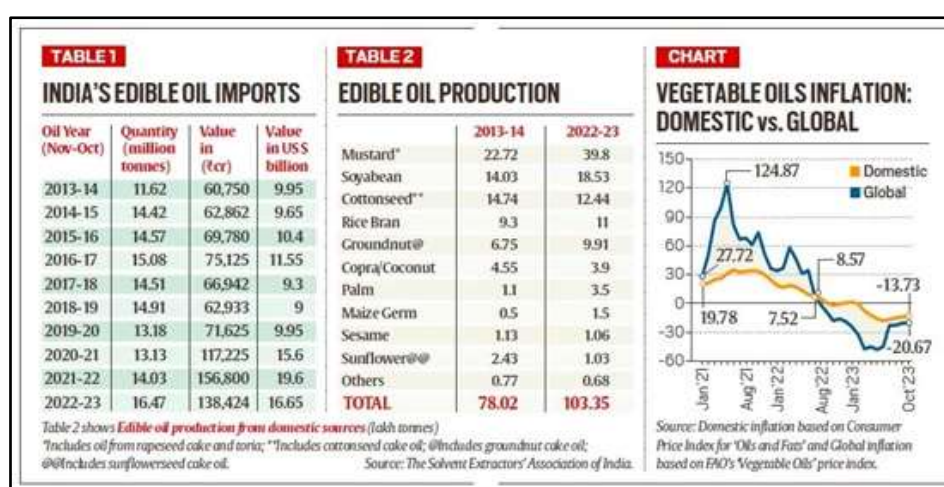
- Designed to check inbound shipments of low-quality products and prevent the

dumping of goods by a third country through an FTA partner country. Prevents a country with an FTA from dumping goods from a third country in the Indian market merely by putting a label on them.

- The CAROTAR, 2020 plays a crucial role in ensuring the proper application of rules of origin, preventing trade agreement misuse, and maintaining the quality standards of imported goods. It enhances the transparency and effectiveness of the preferential trade system.

Topic 39. THE OTHER OIL IMPORTS INDIA NEEDS TO WORRY ABOUT

Important for the subject: Economy



India's edible oil imports have risen almost 1.5 times and more than doubled in rupee value terms during the last 10 years. Imports of vegetable oils touched a record 16.5 million tonnes (mt) in the year ended October 2023.

The 16.5 mt of edible oil imports in 2022-23 included palm (9.8 mt; from Indonesia, Malaysia and Thailand), soybean (3.7 mt; from Argentina and Brazil) and sunflower (3 mt; from Russia, Ukraine and Argentina).

- From a 10-year perspective, India's edible oil imports have increased from 11.6 mt (valued at Rs 60,750 crore) in 2013-14 to 16.5 mt (Rs 138,424 crore) in 2022-23, with the jump pronounced in the last three years.
- During the previous 10 years between 2004-05 and 2013-14, imports had shot up even more, from 5 mt to 11.6 mt.

Dipping self-sufficiency:

- Total available oilseed in India- 26.8 mt
- Domestically produced- 10.3 mt (38.6% of total oilseeds available)
- Imported- 16.5 mt

- Total consumption requirement- **24-25 mt**

Profile of domestic oils:

- The **kapas or raw un-ginned cotton** contains only about **36%lint** (the white fluffy fibre that textile mills spin into yarn), **62%seed** and **2% waste**. **Cottonseed** contains **13%oil**.
- **Higher yields** from **genetically modified (GM) Bt technology** helped boost the **lint** as well as **cottonseed oil production** from **less than 0.5 mt** to **1.5 mt** between **2002-03** and **2013-14**.
- Recently, **cotton oilseed production** has **decreased** due to **falling cotton output and yield**, and **pest attacks** like **Bollworm**.
- **Other oilseed sources-** The oils extracted from **rice bran** (the outer brown layer of rice after the removal of the husk and before polishing/whitening), **germ** (the inside endosperm of maize grains separated during milling), **palm tree, groundnut, coconut, sesame, sunflower and safflower**.

Refining of petroleum oil:

- **Refining** involves **de-gumming** (removing gums, waxes and other impurities), **neutralisation** (removing free fatty acids), **bleaching** (removing colour) and **de-odourisation** (removing volatile compounds).

Vulnerability to imports:

- Risk of international price fluctuations.
- The **UN Food and Agriculture Organization's vegetable oils price index** (base period value: **2014-2016=100**) soared from **98.7 points** in **August 2020** to an **all-time high** of **251.8 points** in **March 2022**, the month that followed **Russia's invasion of Ukraine**. The index has since plunged to **120 points** in **October 2023**.
- Landed prices of **imported oils** are more than halved — from **\$1,828** to **\$910** per tonne for **crude palm** and from **\$2,125** to **\$1,005** for **sunflower** between **March 2022** and now. Thus increasing the competition for domestic producers.

Solvent Extractors' Association of India (SEA):

- It was formed in **1963** to help and foster the development and growth of the **Solvent Extraction Industry in India**.
- At present, the Association has **875 members** including about **350 working solvent extraction plants** having a **combined oilcake/oilseed processing annual capacity** of about **30 million tonnes**.
- It is an **all-India body** to the **solvent extractions industry** and the **premier vegetable oil Association** in the country having wide representative membership consisting of **processors of Rice bran, Oilcakes, Minor Oilseeds and Soybean**.

Topic 40. GST OFFICERS BUST 48 FAKE FIRMS AVAILING FRAUDULENT ITC OF OVER ₹199 CRORE

Important for the subject: Economy

The Central Goods and Services Tax (CGST), Delhi East Commissionerate, commenced coordinated 'Operation Clean Sweep' against fake billers, based on gathered human intelligence, which was further developed through data mining and data analysis

Goods and Services Tax (GST)

- Goods and Services Tax (GST) represents the cornerstone of India's taxation system, **embodying the principle of "One nation, one indirect tax" to establish a unified common market.**
- The genesis of GST can be traced back to 2003 **when the Kelkar Task Force on indirect taxes proposed the consolidation of various central and state indirect taxes into a singular, comprehensive framework.**
- To facilitate this monumental reform, **an Empowered Committee of State Finance Ministers was formed, tasked with reconciling differences and advancing the implementation of GST.**

Key Features of GST:

- **Unified Taxation:** GST involves a single tax on the supply of goods and services throughout the supply chain, from manufacturers to consumers.
- **Destination-Based Tax:** Unlike the existing origin-based taxation, GST is a destination-based tax.
- **Value-Based Tax:** Input tax credits are available at each stage, promoting a value-based approach.
- **Tax Subsumption:** At the central level, GST subsumes taxes such as Central Excise Duty, Additional Excise Duty, Service Tax, Countervailing Duty, and Special Additional Duty of Customs. At the state level, it includes State VAT/Sales Tax, Entertainment Tax, Central Sales Tax, Octroi, Entry Tax, Purchase Tax, Luxury Tax, and taxes on lottery, betting, and gambling.
- **Federal Structure:** Given India's federal structure, GST comprises Central GST (CGST) and State GST (SGST) simultaneously levied across the value chain on both goods and services.
- **Online Administration:** The Goods and Services Tax Network (GSTN), established by both central and state governments, facilitates online tax payments and credit transactions.

Features

- **Simultaneous Powers:** The act confers simultaneous legislative powers upon the Parliament and State Legislature to govern GST.
- **Tax Subsumption:** It involves the subsuming of central and state taxes under GST, including the levy of Integrated GST (IGST) on interstate transactions.
- **GST Council:** A constitutional body, the GST Council, with 2/3rd representation from states and 1/3rd from the center, examines GST-related issues and makes recommendations on rates, taxes, cesses, surcharges, exemption lists, and dispute resolution.
- **Compensation:** States are provided compensation for the entire amount of revenue losses for a period of 5 years.

Benefits of GST:

For Business and Industry:

- Easy compliance with a single tax.
- Creation of a unified market promoting ease of doing business.
- Removal of cascading taxes, reducing prices and boosting demand.
- Improved competitiveness and reduced transaction costs.
- Support for the Make in India initiative.

For Consumers:

- No cascading burden of taxes, moderating inflation.
- Increased transparency in the taxation regime.

For Government:

- Simplified administration and self-policing through the input tax credit system.
- Dual monitoring by the center and states, fostering tax competition and cooperation.
- Better control on leakages, leading to higher revenue efficiency. Increased funds for welfare expenditure.

Input Tax Credit (ITC):

- ITC is the tax paid on purchases that businesses can use to reduce their tax liability when making a sale
- While it offers advantages, concerns exist over its potential misuse, including the issuance of fake invoices. The current system lacks real-time matching of ITC claims with taxes paid by suppliers, prompting the need for further regulatory measures.

Topic 41. INDIA'S EXPORT SCHEMES

Important for the subject: Economy

India faces ongoing challenges with export promotion schemes, as major trade partners like the EU and US impose countervailing duties, viewing them as subsidies

Challenges:

- **WTO Incompatibility:** India faces challenges with export promotion schemes as major trade partners impose countervailing duties, viewing them as subsidies. The replacement of MEIS by RoDTEP hasn't resolved WTO incompatibility issues.
- **High Customs Duties:** India's high customs duties (e.g., 14.7% on industrial products) necessitate export schemes for competitiveness, leading to disputes with trading partners.
- **Countervailing Duties:** Major trade partners, including the EU and the US, impose countervailing duties, neutralizing the advantages India provides to exporters.

Recommendations:

Improve Export Scheme Structure:

Advance Authorisation Scheme (AAS):

- Implement robust systems to trace raw materials.
- **Refine norms to avoid excess benefits and link imports to final exports.**
- **Redefine subsidy calculations to align with international standards.**

Export Promotion Capital Goods Scheme (EPCGS):

- **Reduce import duties on select capital goods.**
- **Complement with low GST rates.**

Duty Drawback Scheme (DDS):

- Establish an effective system for verifying actual input use.
- **Link drawback rates directly to actual duties paid on materials.**

Remission of Duties and Taxes on Exported Products (RoDTEP):

- Conduct regular checks based on actual inputs.
- **Ensure compliance with WTO rules and prevent excess payments.**

Use Offence as Defence:

- **Develop a professional setup for trade disputes similar to the US Trade Representative.**

Resist Premature Scheme Withdrawal:

- Consider the continuity of effective schemes, like MEIS, to support exporters.

Examine Customs Duty Structure:

- Evaluate and possibly **reduce high customs duties on inputs and capital goods.**
- Aim to lessen the need for multiple export schemes by creating a more favorable customs duty structure.

Trade Infrastructure for Export Scheme (TIES):

- **Objective:** TIES aims to develop and **upgrade export-related infrastructure and provide assistance for setting up and upgrading infrastructure projects with an export link.**
- **Focus Areas:** The scheme emphasizes addressing the issues related to the export value chain, including the **creation of quality infrastructure, capacity building, and modernization of infrastructure.**
- **Implementation:** TIES is implemented by the Directorate General of Foreign Trade (DGFT) under the Ministry of Commerce and Industry.

Market Access Initiatives (MAI) Scheme:

- **Objective:** MAI Scheme is **designed to assist exporters and export organizations** in accessing and expanding their markets.
- **Focus Areas:** It primarily **focuses on market studies, market entry expenses, and other export promotion activities to facilitate market access for Indian products.**
- **Implementation:** The scheme is implemented by the Department of Commerce, Government of India, to promote India's exports.

About MEIS:

- **Objective:** The Merchandise Exports from India Scheme (MEIS) is a part of the Foreign Trade Policy (FTP) of India 2015-20. It aims to offset infrastructural inefficiencies and associated costs involved in the export of goods/products manufactured in India, **particularly those with high export intensity and employment potential, thereby enhancing India's export competitiveness.**
- **Implementation:** The scheme is notified by the Directorate General of Foreign Trade (DGFT) and implemented by the Ministry of Commerce and Industry.
- **Incentives:** MEIS provides rewards in the form of **duty credit scrips to exporters, allowing them to import inputs or goods without paying duty. These scrips can be used to pay various duties, including the basic customs duty.**
- **Replaced Schemes:** MEIS replaced several other incentive schemes from the previous Foreign Trade Policy 2009-14, including the Focus Product Scheme (FPS), Focus Market Scheme (FMS), Market Linked Focus Product Scheme (MLFPS), Infrastructure Incentive Scheme, and Vishesh Krishi Gramin Upaj Yojana (VKGUY).

Service Exports from India Scheme (SEIS): Overview

- SEIS aims to promote the export of services from India by providing incentives in the form of duty credit scrips to eligible service providers.

Key Components:

Duty Credit Scrip:

- Issued by the **Director General of Foreign Trade (DGFT)**.
- Functions as a credit certificate that can be utilized to pay various duties and taxes to the Central Government.

Eligibility Criteria:

- Service providers of eligible services qualify for duty credit scrips.
- Entitled to duty credit at notified rates based on the net foreign exchange earned.

Usage of Duty Credit Scrips:

- Can be used for the payment of:
- **Custom duties.**
- **Excise duties.**
- **Goods and Services Tax (GST) on procurement of services, etc.**

Transferability:

- Duty credit scrips and goods imported using them are freely transferable.
- Provides flexibility for businesses to leverage these benefits effectively.

Validity Period:

- Duty credit scrips remain valid for a period of 18 months from the date of issue.

Implementation and Administration:

- Governed by the **Ministry of Commerce and Industry, Government of India.**
Administered by the Directorate General of Foreign Trade (DGFT).

Benefits:

- Encourages service providers to enhance foreign exchange earnings.
- Facilitates the payment of various duties and taxes, contributing to cost savings. Promotes the growth of the services sector in India.

Remission of Duties and Taxes on Exported Products (RoDTEP) Scheme:

- The RoDTEP scheme, introduced to replace the Merchandise Export from India Scheme (MEIS), has been notified by the Government of India, outlining rates and

norms to support exporters.

- **Objective:** To refund embedded central, state, and local duties or taxes that were not previously rebated, addressing the non-compliance issues with the World Trade Organization (WTO) rules.

Key Features:

Scope:

- Covers 8,555 tariff lines, constituting around 75% of traded items and 65% of India's exports. Budgetary allocation of ₹12,454 crore for the fiscal year 2021-22.

Zero Rating of Exports:

- Aims to achieve zero rating of exports by ensuring that domestic taxes are not exported.

Refund Mechanism:

- Refunds encompass all taxes, including those levied by states and local bodies. Refund rates, considered WTO-compliant, range from 0.5% to 4.3% of the Free On Board (FOB) value of outbound consignments.

Rate Variation:

- Rates vary based on the product category. For example:
- Lowest rates for items like chocolates, toffees, and sugar confectionery.
- Highest rates for yarns and fibers.
- Exclusion of certain sectors like steel, pharma, and chemicals.

International Standards and Automatic Refunds:

- Enables Indian exporters to meet international standards for exports.
- Provides affordable testing and certification within the country, reducing dependence on international organizations.
- Facilitates automatic tax assessment and refunds for GST, streamlining the process for exporters.
- The RoDTEP scheme aligns with India's efforts to facilitate a conducive environment for exporters, promoting economic growth and enhancing the country's position in the global market.

Foreign Trade Policy (FTP):

- The Ministry of Commerce and Industry launched the Foreign Trade Policy 2023, which will come into effect from April 1, 2023.

- The Foreign Trade Policy (FTP) 2023 is a **comprehensive framework aimed at facilitating exports and trade, fostering partnerships with exporters, and streamlining processes for businesses.**
- It is built on the **principles of trust and partnership, promoting a responsive and agile environment** for trade. Some key details of the FTP 2023 include:

Process Re-Engineering and Automation:

- Shift from an **incentive-based regime to a facilitating regime, emphasizing technology interface and collaboration.**
- Reduction in fee structures and IT-based schemes for **enhanced accessibility to export benefits, particularly for MSMEs.**
- Implementation of duty exemption schemes for export production **through Regional Offices in a rule-based IT system environment, reducing manual intervention.**

Towns of Export Excellence (TEE):

- Addition of four new towns, **namely Faridabad, Mirzapur, Moradabad, and Varanasi, as TEEs, in addition to the existing 39 towns.**
- Priority access to export promotion funds **under the MAI scheme and Common Service Provider (CSP) benefits under the EPCG Scheme for TEEs.**

Recognition of Exporters:

- Exporter firms recognized with **‘status’ based on export performance will participate in capacity-building initiatives.**
- Encouragement for 2-star and above status holders to provide trade-related training based on a model curriculum.

Promoting Export from the Districts:

- Establishment of partnerships with State governments and the **Districts as Export Hubs (DEH) initiative to boost exports at the grassroots level.**
- Introduction of State Export Promotion Committee and District Export Promotion Committee for addressing concerns at the district level.

Streamlining SCOMET Policy:

- Strengthening the **“export control” regime with enhanced outreach and understanding of SCOMET among stakeholders.**
- Implementation of a robust export control system in India to facilitate controlled items/technologies under SCOMET.

Facilitating E-Commerce Exports:

- **Development of e-commerce hubs and related elements such as payment**

reconciliation, book-keeping, and returns policy.

- Increase in the consignment-wise cap on E-Commerce exports through courier from ₹5 Lakh to ₹10 Lakh in the FTP 2023.

Facilitation under EPCG and Advance Authorization Scheme:

- Rationalization of the EPCG Scheme with the addition of schemes like PM MITRA and exemptions for the dairy sector.
- **Inclusion of various green technology products under the reduced Export Obligation requirement under the EPCG Scheme.**
- Extension of the Special Advance Authorization Scheme to the apparel and clothing sector for prompt execution of export orders.

Amnesty Scheme:

- **Launch of an online portal and a six-month window for exporters to avail the scheme.**
- Coverage of all pending cases of default in export obligation of authorizations, regularized on the payment of all customs duties exempted proportionally to unfulfilled export obligations.
- The previous foreign trade policy for 2015-2020 had **targeted exports of USD 900 billion by 2020, which was extended till March 2023. However, it is expected that India will end 2022-23 with total exports of USD 760-770 billion, showing improvement from USD 676 billion in 2021-22.**

National Export Insurance Account (NEIA):

Objective:

- **Facilitate medium and long-term exports that are commercially viable. Address limitations of ECGC Limited in providing adequate cover on its own.**
- **Provide credit risk cover for projects and high-value exports, aligning with national interest.**

Purpose:

- Ensure availability of credit risk cover for projects that ECGC may be unable to underwrite at competitive terms.

NIRVIK Scheme:

- **Introduced by ECGC to ease lending and enhance loan availability for exporters.**

Insurance Cover:

- Guarantees up to 90% of the principal and interest.
- Aims to keep foreign and rupee export credit interest rates below 4% and 8%, respectively.

Cover Scope:

- Encompasses both pre and post-shipment credit.
- Higher premium rate for the gems, jewellery, and diamond (GJD) sector borrowers with limits over Rs 80 crore.

Premium Rates:

- Premium rates moderated to 0.60 per annum for accounts below Rs 80 crore.
- Premium rates set at 0.72 per annum for accounts exceeding Rs 80 crore.

Inspection Mandate:

- Inspection of bank documents and records by ECGC officials mandated for losses exceeding Rs 10 crore.

Payment Structure:

- Banks pay a monthly premium to ECGC on the principal and interest for the cover provided.

Benefits:

1. Enhances accessibility and affordability of credit for exporters.
2. Boosts competitiveness of Indian exports.
3. Makes ECGC procedures exporter-friendly.
4. Expected to bring down the cost of credit, providing capital relief and liquidity.
5. Ensures timely and adequate working capital for the export sector.

Export Credit Guarantee Corporation of India (ECGC):**Establishment:**

- Formed in 1957 as a fully government-owned company.

Objective:

- Promote exports by providing credit insurance services.

Export Credit Insurance to Banks (ECIB):

- Provides credit insurance to banks to protect against losses on export credit.
- Covers pre and post-shipment stages to mitigate risks of insolvency or protracted default of exporter borrowers.

Topic 42. PRESS COUNCIL OF INDIA***Important for the subject: Polity***

Vice President Jagdeep Dhankhar said that now time for Press Council of India to not show teeth, but to bite.

What is Press Council of India (PCI):

- The Press Council of India (PCI) was initially established in 1966 on the recommendations of the First Press Commission, chaired by Justice J.R. Mudholkar, as mandated by the Parliament.
- The current council operates under the framework of the Press Council Act of 1978, serving as a statutory, quasi-judicial entity entrusted with the role of overseeing the press in India.

What is the composition of Press Council of India (PCI):

- It consists of a Chairman and 28 other members. The Chairman is nominated by a committee consisting of Chairman of Rajya Sabha, the Speaker of Lok Sabha, and one representative of the council
- The Chairman, by convention, has been a retired judge of the Supreme Court. The term of the Chairman and the members of the Council is 3 years.

What is the power of Press Council of India (PCI):**Adjudication Scope:**

- The Press Council of India handles complaints either against the Press for violating journalistic ethics or by the Press for interference with its freedom.

Jurisdiction and Powers:

- The council possesses uniform authority across India, equivalent to the powers vested in a Civil court during the trial of a suit under the Code of Civil Procedure, 1908.

Legal Standing of Inquiries:

- Every inquiry conducted by the council is **legally recognized as a judicial proceeding** under sections 193 and 228 of the Indian Penal Code.

Finality of Decisions:

- Decisions made by the Press Council of India are considered **conclusive**, and they cannot be contested or challenged in any court of law.

What are the functions of Press Council of India (PCI):**Monitoring Media Practice:**

- The **primary objective** is to **scrutinize media practices and oversee the freedom of the press**.

Preserving Newspaper Independence:

- **Aiding newspapers** in maintaining their independence is a key function of the organization.

Establishing a Code of Conduct:

- The organization is **tasked with developing a code of conduct for journalists and newspapers**, aligning with high professional standards.

Assessing Developments Impacting News Dissemination:

- **Regularly reviewing developments** that have the **potential to limit the supply and dissemination of news** of public interest and importance.

Foreign Assistance Cases:

- **Examining cases** where **newspapers or news agencies in India** receive assistance from **foreign sources**, as referred by the Central Government.

Facilitating Journalism Education and Training:

- **Providing facilities to ensure proper education and training** for individuals in the journalism profession.

Addressing Ownership Concentration:

- **Studying developments** that may lead to the **monopoly or concentration of newspaper ownership** and suggesting appropriate remedies.

Topic 43. TAMIL NADU GOVERNOR RETURN 10 BILL, STATE CALL FOR SPECIAL SESSION***Important for the subject: Polity***

Tamil Nadu Governor R N Ravi returned 10 pending Bills to the state government

Tamil Nadu Governor R N Ravi has returned 10 pending Bills to the state government, including one concerning the state government's power to appoint university vice-chancellors.

This move comes days after the Supreme Court expressed concern about Governors not acting on Bills.

- The DMK-led government, which has had **disagreements with Ravi**, has called a **special Assembly session to address these Bills**. The Speaker **stated that discussions on the Supreme Court's observations, Governor, or President would not take place during the session**.
- The government had **filed an affidavit accusing the Governor of neglecting constitutional duties** and hindering governance, leading to a "constitutional deadlock."
- The **Supreme Court recently ruled on a similar case in Punjab**, emphasizing the importance of **not casting doubt on the legislature's session**.
- The standoff **raises constitutional questions about the role and powers of Governors in approving Bills** passed by the Assembly, with concerns about potential overreach by Raj Bhavan.

What is the constitutional provisions related to Governor assent to the bill:

- **Article 200 of the Constitution outlines four options available to a Governor** when a legislature-passed Bill is presented for assent:

Grant assent immediately.

Withhold assent.

- **Return the Bill to the legislature, requesting reconsideration of the Bill or specific provisions.**
- **If the legislature reapproves the Bill, with or without accepting Governor-suggested amendments, the Governor is constitutionally obligated to grant assent.** Alternatively, the Governor may reserve the Bill for the President's consideration.
- **In the case of Presidential consideration, Article 201 the decision to grant or withhold assent is made by the President.** Notably, **there is no specified timeframe for the President to decide on the Bill's outcome.**

Do Governors have discretion:

- **Governors did have a discretion to return Bills before the first provision in the draft Article 175 (now Article 200).**
- **This was amended by the Constituent Assembly in 1949.** The first provision to **Article 200** is thus a **saving clause and retains the discretion over the fate of the Bill solely in the hands of the State Cabinet.** **Article 163 makes it clear the Governor is not expected to act independently.**
- **The Supreme Court in the Shamsher Singh case verdict has held that a Governor**

exercises all his powers and functions conferred on him by or under the Constitution on the aid and advice of his Council of Ministers save in spheres where the Governor is required by or under the Constitution to exercise his functions in his discretion.

- The assent or return of the Bill does not involve the discretion of individuals occupying the Governor's post.

What are various Supreme Court observations

Purushothaman Nambudiri vs State of Kerala (1962):

- The Constitution Bench clarified that no specific time limit is imposed by the Constitution for the Governor to provide assent to Bills.
- Emphasized that the Governor must align actions with the will of the Legislature and operate in harmony with their Council of Ministers.
- The Supreme Court asserted that withholding assent to a law validly passed by the Legislature constitutes a direct attack on the federal structure of the Constitution. Noting that causing delays in assenting to Bills would be an arbitrary exercise, contradicting the constitutional spirit.

Shamsher Singh vs State of Punjab (1974):

- A 7-judge Constitution Bench outlined that the President and Governor should exercise their formal constitutional powers based on the advice of their Ministers, with few well-known exceptions.

Nabam Rebia case (2016):

- The SC cited B R Ambedkar's observations, stating that the Governor has no independent functions to execute but does have specific duties to perform, urging recognition of this distinction by the House.
- Ruled that Article 163 of the Constitution does not grant the Governor general discretionary power to act against or without the advice of the Council of Ministers.

Rajiv Gandhi assassination case (2018):

- The SC expressed dissatisfaction with the Governor's delay in taking action on the release of seven convicted prisoners, citing a lapse of more than two years.

What are the other Constitutional Position related to Governor:

- **Article 153** of the Indian Constitution mandates the appointment of a Governor in each state. The 7th Amendment to the Constitution however, allows for the appointment of the same person as Governor of two or more states.
- **Article 154:** The Governor shall have executive power over the state, which he shall exercise either directly or through officers subordinate to him in conformity with this Constitution.
- **Article 163:** There shall be a council of ministers, led by the Chief Minister, to assist

and advise the **Governor** in the exercise of his powers, except when he is compelled to execute his **functions at his discretion**.

- **Article 164:** The **council of ministers is collectively responsible** to the state's legislative assembly. This provision is the **cornerstone of the state's parliamentary system** of governance.
- The **Governor has the same Executive, Legislative, Financial, and Judicial authorities as the President of India**. However, the Governor's power is restricted in several ways compared to that of the President, as the **Governor lacks the President's military, diplomatic, and emergency authorities**.

Topic 44. ASCI PROPOSES GUIDELINES TO CHECK GREENWASHING IN ADS

Important for the subject: Polity

To ensure that advertisers' green claims are true and evidence-based, the **Advertising Standards Council of India (ASCI)** has proposed **guidelines that aim to bring transparency and accountability in environmental claims-based advertising**.

About the draft guidelines by ASCI:

- These guidelines also **aim to check green washing**. The draft guidelines focus on various green claims, including **positive impact on environment, carbon offset, and biodegradable claims**.
- These guidelines set a standard for advertisers and aim to foster a culture of transparency and authenticity in advertising in the best interest of the consumers.

Salient features of the draft guidelines:

- The absolute claims such as 'environment friendly', 'eco-friendly' 'sustainable', and 'planet friendly' **must be supported** by a "high level of substantiation".
- The advertisers must also specify whether the environmental claim refers to the entire product, packaging or service.
- The advertisers must disclose if the reduction in emission will occur only in two years or over a longer time period. Ads also cannot make carbon offset-related claims that represent an emission reduction that is required by law.
- The green claims must be based on the **"full life cycle"** of the advertised product or service.
- Claims that are based on only part of an advertised product or service's life cycle must not mislead consumers about the total environmental impact of the product or service.

Misleading consumers:

- Brands cannot mislead consumers about the environmental benefits by highlighting the absence of a damaging ingredient if it is not usually found in competing products.
- **Certifications and Seals of Approval** should make clear which attributes of the product or service have been evaluated by the certifier, and the basis of such

certification provided. **Certifications and seals** used in an advertisement should be from a **nationally or internationally recognised certifying authority**.

- **Visual elements** in an ad should not give a false impression about the product/service being advertised. **Advertisers** should refrain from making aspirational claims of their future environmental objectives, unless they have developed actionable plans.
- For claims pertaining to the **product** being **compostable, biodegradable, recyclable, non-toxic, free-of**, advertisers should **qualify** the aspects to which such claims are being attributed.
- They should be backed by “**reliable scientific evidence**” to indicate if the product will **break down** within a reasonably short period of time after disposal, and whether the product is **free of elements** that can lead to environmental hazards.

Advertising Standards Council of India (ASCI):

- It is a **voluntary self-regulatory organization** of the advertising industry in India. Established in 1985.
- It is registered as a **non-profit company** under **section 25** of the **Company Act**.
Headquarters: **Mumbai, Maharashtra**
- It seeks to ensure that advertisements conform to its Code for Self-Regulation, which requires advertisements to be legal, decent, honest and truthful, and not hazardous or harmful while observing fairness in competition.
- It looks into **complaints across ALL MEDIA** such as **Print, TV, Radio, hoardings, SMS, Emailers, Internet/web-site, product packaging, brochures, promotional material and point of sale material etc.**
- It's role has been **acclaimed** by various **Government bodies** including the **Department of Consumer Affairs (DoCA), Food Safety and Standards Authority of India (FSSAI), Ministry of AYUSH** as well as the **Ministry of Information and Broadcasting**.

Total 45. DIGITAL PERSONAL DATA PROTECTION ACT 2023 (DPDP)

Important for the subject: Polity

The DPDP Act is India's comprehensive legislation for personal data protection. Enacted in 2023, it regulates the processing of personal data and establishes the rights of individuals over their data.

Key features include:

Scope:

- Applies to **organizations processing personal data of individuals in India**.
- **Applicable to entities both within and outside India, if they process data of individuals in India.**

Consent:

- Allows data processing without explicit consent in specific cases, such as contractual obligations or public interest.
- **Emphasizes the right to be forgotten and the right to erasure.**

Data Localization:

- Does not mandate the storage of personal data within India.
- **Provides for the cross-border transfer of data, Important for the subject to certain conditions.**

Data Breaches:

- Requires organizations to **notify the Data Protection Board and affected individuals within 72 hours of becoming aware of a data breach.**
- Establishes **obligations for data fiduciaries to implement security safeguards.**

Penalties:

- **Imposes fines up to INR 250 crores for violations.**
- Includes penalties for **failure to conduct a data impact assessment or follow breach notification procedures.**

General Data Protection Regulation (GDPR):

- **GDPR is the European Union's data protection regulation implemented in 2018. It sets out rules for the processing of personal data and the rights of individuals.**

Key aspects include:**Scope:**

- Applies to **organizations processing personal data of individuals in the European Union.**
- Extraterritorial application, **impacting organizations worldwide.**

Consent:

- **Requires explicit consent for processing personal data.**
- Individuals have the right to withdraw consent.

Data Localization:

- Generally, requires the storage of personal data within the EU.
- **Permits data transfers based on adequacy decisions, binding corporate rules, or standard contractual clauses.**

Data Breaches:

- Mandates notifying the **relevant data protection authority within 72 hours of a data breach**. Emphasizes the **principles of data protection by design and by default**.

Penalties:

- Imposes fines up to **€20 million or 4% of the global annual turnover for serious violations**. Focuses on **accountability, transparency, and data protection impact assessments**.
- Both **DPDP and GDPR** aim to safeguard individuals' privacy but differ in certain approaches, such as **consent requirements, data localization, and penalty structures**.

Topic 46. HC QUASHES HARYANA LAW FOR 75% QUOTA IN PVT SECTOR JOBS

Important for the subject: Polity

The Punjab and Haryana high court on Friday set-aside the Haryana law providing 75% reservation for state domiciles in private sector, observing that “**the state cannot direct private employers to do what has been forbidden to do under the Constitution.**”

What is Haryana State Employment of Local Candidates Act, 2020?

- It requires **firms with 10 or more employees to reserve 75% of all jobs offering a salary of less than Rs. 30,000 a month** for eligible candidates of State domicile.
- It will be **mandatory for all these employers to register all their employees drawing gross monthly salary or wages not more than Rs 30,000** on the designated portal available on the official website of the Labour Department, Haryana.

Similar Attempts in other States:

- Job reservation Bills or laws for domiciles have also been announced in other States including **Andhra Pradesh, Madhya Pradesh and Jharkhand**.
- The job quota Bill passed in the Andhra Pradesh Legislative Assembly in 2019, also reserving three-fourths of private jobs for locals.

What are the Pros and Cons of Local Reservation in Jobs?

Pros:

- **Constitutionally Valid:** Article 16 of the constitution of India doesn't prohibit reservation based on the domicile and the residence. It seems constitutionally valid to provide first opportunities to the locals in local jobs because these people wear all the negative externalities generated by job creating establishments.
- **Equality:** Reservation in local jobs provides equality among the weakest section of the society, because reservation is only confined to low strata jobs, and it is as per the

spirit of the Equal Protection of Law as per Article 14 of the constitution of India.

- **Suitable Solution for Unemployment: Reservation in local jobs seems a suitable solution** amid unemployment and stagnant job creation.
- In the constitution of India, there are **special provisions for jobs and education for states of Andhra Pradesh and Telangana** under the article 371 D and E, due to their special circumstances.
- So, the reservation in local jobs amid the unemployment situation seems justified and as per the special provisions of the constitution of India. **Boost Local Economy:** When companies hire local people, they tend to spend their earnings in the local economy, which can help to create jobs and generate economic growth.
- **Hiring local people means companies do not have to bear the relocation costs of employees.** This can help to reduce their operational costs, which can be passed on to customers in the form of lower prices.
- **Improve Productivity:** Local employees are more likely to be familiar with the local language, culture, and business environment, which can help to improve their productivity and efficiency.

Cons:

- **Can Trigger Exodus of Investors:** It could trigger an exodus of large domestic and multinational investors across sectors such as auto, IT that rely on highly skilled manpower.
- In the case of Haryana, investment fell 30% in 2022 to Rs 39,000-odd crore from nearly Rs 56,000 crore in 2021-22, pushing it from the ninth-best State in terms of new investment projects to the 13th rank in 2022-23 because of local reservation law.
- **Affect Existing Industries:** Raising the son of the soil issue and preventing free movement of manpower resources in the State from other regions can have an adverse effect on the existing industries in the State.
- This may force those tech giants and other industries to shift their base from Haryana to other States and drain out the State's monetary resources to that extent.
- **Can Cause Extreme Talent Crunch:** Imposing the reservations on gig and platform companies could create a crippling talent crunch.
- **Against the Constitution:** The Constitution of India guarantees freedom of movement and consequently employment within India through several provisions.
- **Article 14** provides for equality before law irrespective of place of birth.
- **Article 15** guards against discrimination based on place of birth.
- **Article 16** guarantees no birthplace-based discrimination in public employment.
- **Article 19** ensures that citizens can move freely throughout the territory of India.

Topic 47. SEEKING 'SELF-GOVERNANCE'

Important for the subject: Polity

The tribal organization faces an FIR for 'attempting to wage war against the government of India' after it declared a separate administration within Manipur

The Indigenous Tribal Leaders' Forum (ITLF) in Manipur has gained prominence amid escalating tensions between the Kuki and Meitei communities.

- On November 17, an **FIR** was lodged against **ITLF** general secretary Muan Tombing for allegedly “attempting to wage war” against the Indian government after he announced plans for a “separate administration.
- The **ITLF**, formed in **June 2022**, includes various tribal councils and leaders from recognized tribes within **Churachandpur** district.
- The controversy follows disputes over historical inscriptions and government actions, including the “war on drugs 2.0” and evictions, primarily affecting the **Kuki-Zomi** people. The **Coordinating Committee on Manipur Integrity** suggests long-standing aspirations for a separate administration, while the **ITLF** clarifies its intent for “self-rule” within the Indian Constitution to address historical injustices and ensure tribal welfare.

Some more facts about Indigenous Tribal Leaders' Forum (ITLF):

- Indigenous Tribal Leaders' Forum (ITLF) is a **tribal leaders' forum in Manipur that describes itself as a conglomerate** of the recognized tribes in **Manipur's Churachandpu**. It has called for the **complete separation of the hill areas, inhabited primarily by the indigenous tribes of the Kuki-Chin-Zomi-Mizo group**, from the rest of the state.
- The **ITLF**, representing the recognized tribes in Manipur's Churachandpur district, **submitted a petition to the former CRPF chief**, who was **appointed as the security advisor to the Manipur government** following recent ethnic clashes.
- The forum expressed their inability to coexist with the dominant **Meiteis**, accusing them of **perpetrating endless atrocities** and displaying hatred towards the tribal people.

What's behind the violence in Manipur:

- Manipur was **boiling since February 2023**. Manipur has been restive since **February** when the state government launched an **eviction drive** seen as targeting a **specific tribal group**. The drive led to protests but not on the scale of the one seen recently.

High Court's order acted as a trigger point

- The recent protests were triggered by the **Manipur High Court's direction** to the State to pursue a **10-year-old recommendation to grant Scheduled Tribe (ST) status to the non-tribal Meitei community**. The Court's order brought the **historical tensions between the valley-dwelling Meitei community and the state's hill tribes to a boil**.
- A 'tribal solidarity march' was organised by the **All Tribal Students' Union of Manipur (ATSUM)** against the order of the High Court which led to the violent clashes at various places in Manipur during the course of this march.

Topic 48. TAMIL ASSEMBLY READOPTS 10 BILL RETURN BY GOVERNOR

Important for the subject: Polity

Tamil Assembly readopts 10 bills returned by governor.

The Tamil Nadu Assembly held a special sitting to readopt 10 Bills returned by Governor R N Ravi, covering law, agriculture, and higher education. AIADMK and BJP walked out, questioning the need for the session while the matter is in the Supreme Court.

Chief Minister M K Stalin criticized the Governor for withholding assent without providing reasons, calling it an affront to elected representatives.

Stalin emphasized the Governor's duty to give assent under Article 200 and accused non-BJP states of being targeted. Six of the Bills aim to enhance government power in universities, amending laws governing institutions like Tamil Nadu Dr MGR Medical University.

What is the constitutional provisions related to Governor assent to the bill:

- **Article 200** of the Constitution outlines four options available to a Governor when a legislature-passed Bill is presented for assent:

Grant assent immediately.

Withhold assent.

- **Return the Bill to the legislature, requesting reconsideration of the Bill or specific provisions.**
- **If the legislature reapproves the Bill, with or without accepting Governor-suggested amendments, the Governor is constitutionally obligated to grant assent.**
- **Alternatively, the Governor may reserve the Bill for the President's consideration.**
- **In the case of Presidential consideration. Article 201 the decision to grant or withhold assent is made by the President. Notably, there is no specified timeframe for the President to decide on the Bill's outcome.**

Do Governors have discretion:

- **Governors did have a discretion to return Bills before the first provision in the draft Article 175(now Article 200). This was amended by the Constituent Assembly in 1949.**
- **The first provision to Article 200 is thus a saving clause and retains the discretion over the fate of the Bill solely in the hands of the State Cabinet. Article 163 makes it clear the Governor is not expected to act independently.**
- **The Supreme Court in the Shamsher Singh case verdict has held that a Governor exercises all his powers and functions conferred on him by or under the Constitution on the aid and advice of his Council of Ministers save in spheres where**

the Governor is required by or under the Constitution to exercise his functions in his discretion.

- The **assent or return of the Bill does not involve the discretion** of individuals occupying the Governor's post.

What are various Supreme Court observations

Purushothaman Nambudiri vs State of Kerala (1962):

- The **Constitution Bench** clarified that **no specific time limit is imposed by the Constitution for the Governor to provide assent to Bills.**
- Emphasized that the **Governor must align actions with the will of the Legislature** and operate in harmony with their Council of Ministers.
- The **Supreme Court** asserted that **withholding assent to a law validly passed by the Legislature constitutes a direct attack on the federal structure of the Constitution.**
- Noting that **causing delays in assenting to Bills would be an arbitrary exercise, contradicting the constitutional spirit.**

Shamsher Singh vs State of Punjab (1974):

- A **7-judge Constitution Bench** outlined that the **President and Governor** should exercise their formal constitutional powers based on the advice of their Ministers, with few well-known exceptions.

Nabam Rebia case (2016):

- The SC cited **B R Ambedkar's observations**, stating that the **Governor has no independent functions** to execute but **does have specific duties to perform**, urging recognition of this distinction by the House.
- Ruled that **Article 163 of the Constitution does not grant the Governor general discretionary power** to act against or without the advice of the Council of Ministers.

Rajiv Gandhi assassination case (2018):

- The SC expressed **dissatisfaction** with the Governor's **delay in taking action** on the **release of seven convicted prisoners**, citing a lapse of more than two years.

What are the other Constitutional Position related to Governor:

- **Article 153** of the Indian Constitution **mandates the appointment of a Governor** in each state. The **7th Amendment to the Constitution** however, **allows for the appointment of the same person as Governor of two or more states.**
- **Article 154:** The Governor shall have **executive power over the state**, which he shall exercise **either directly or through officers subordinate to him** in conformity with this Constitution.
- **Article 163:** There shall be a **council of ministers, led by the Chief Minister, to assist and advise the Governor** in the exercise of his powers, except when he is compelled to execute his **functions at his discretion.**

- **Article 164:** The council of ministers is collectively responsible to the state's legislative assembly. This provision is the cornerstone of the state's parliamentary system of governance.
- The Governor has the same Executive, Legislative, Financial, and Judicial authorities as the President of India. However, the Governor's power is restricted in several ways compared to that of the President, as the Governor lacks the President's military, diplomatic, and emergency authorities.

Topic 49. SHOULDN'T REJECT CONSTITUTIONAL MORALITY, SAYS CJI CHANDRACHUD

Important for the subject: Polity

Chief Justice of India D Y Chandrachud has said the doctrine constitutional morality should not be rejected **Chief Justice of India D Y Chandrachud** underscores the **significance of constitutional morality**, asserting that **it shouldn't be dismissed** due to **potential conflicts with existing social practices**. Emphasizing the **universal acceptance of certain constitutional values**, he highlights the **intentional incorporation of provisions** from other jurisdictions into the Indian Constitution.

- Chandrachud **views the Constitution as a dynamic document**, evolving through over a hundred amendments to address India's unique challenges.
- He **advocates understanding it as embodying universal values** while **adapting to local needs**.
- The Chief Justice stresses that **constitutional morality aims to reform societal practices, preventing dominance based on religion, caste, or ethnicity**.
- Addressing **diversity in judicial appointments**, he notes the **changing demographics in the legal profession** and underscores the need to support exceptional candidates overcoming gender, religious, and caste prejudices.
- Regarding the role of courts in social dialogue, he **sees a complementary relationship with Parliament**, both **contributing to societal transformation** within their institutional boundaries.

What is Constitutional Morality:

- Constitutional morality **pertains to the principles and values that form the foundation of the constitution**, directing **both government and citizens** in their conduct.
- It **encapsulates the concept that the constitution is not solely a legal instrument but also a moral guide**, mirroring the **collective values and dreams of a society**.
- Additionally, it **emphasizes the importance of interpreting and executing the constitution in alignment** with these core principles and values, **rather than merely adhering to it as a technical, literal document**.
- The term **"Constitutional Morality"** is not mentioned in the constitution

What are some significant Supreme Court judgments relating to Constitutional

Morality:

- Constitutional morality has been **referenced in multiple instances** by the Supreme Court, including:
- **SP Gupta Case/First Judge Case (1982):** The Supreme Court **labeled constitutional violations as a grave breach of constitutional morality.**
- **Naz Foundation vs. Government of NCT of Delhi (2010):** The Court **prioritized constitutional principles over societal perceptions** concerning the **legitimacy of same-sex relationships.**
- **Manoj Narula vs. Union of India (2014):** The **Chief Justice of India emphasized constitutional morality as a commitment** to constitutional norms, **discouraging actions contrary to the rule of law** or reflective of arbitrary conduct.
- **NCT of Delhi vs. Union of India (2018):** The Supreme Court **aligned constitutional morality with the essence of the Constitution**, emphasizing **strict adherence to its principles.**
- **Navtej Singh Johar vs. Union of India (2018):** The Court **distinguished between constitutional and public morality**, asserting that **constitutional morality prioritizes justice over societal acceptance**, leading to the **decriminalization of homosexuality under Section 377 of IPC.**
- **Joseph Shine vs. Union of India (2019):** Upholding **gender equality** and the **right to equality**, the Supreme Court **annulled Section 497 of IPC**, **criminalizing adultery**, **emphasizing that constitutional morality** should guide laws rather than the state's prevailing common morality.
- **Indian Young Lawyers Association & Ors vs. The State of Kerala & Ors., (2019) (Sabarimala Case):** The Court ruled that barring women aged 10-50 from the Sabarimala temple **violated key principles of constitutional morality i.e. Justice, Liberty, Equality, and Fraternity.**
- It clarified that the term **"morality"** in Articles 25 & 26 of the Constitution pertains to constitutional morality, not popular morality.

Topic 50. IMA, NURSES' ASSOCIATION HONOURED WITH INDIRA GANDHI PEACE PRIZE***Important for the subject: Polity***

The Indira Gandhi Prize for Peace, Disarmament and Development, 2022 was, on Sunday, jointly awarded to the Indian Medical Association and the Trained Nurses Association of India as representatives of the **COVID19 warriors in the country.**

About IMA

- Indian Medical Association (IMA) is the **largest represented organisation of doctors of**

the modern system of medicine in India which looks after the interests of doctors as well as the wellbeing of the community at large.

- It has a membership of 3.5 lakh doctors spread over in 28 State Branches, 5 Union territorial Branches and 1702 local branches in almost all the districts of India.

Objectives:

- To **promote and advance medical and allied sciences in all their different branches and to promote the improvement of public health and medical education in India.**
- To maintain the honour and dignity and to uphold the interest of the medical profession and to promote co-operation amongst the members thereof; To work for the abolition of compartmentalism in medical education, medical services and registration in the country and this to achieve equality among all members of the profession.

About Indira Gandhi Prize for Peace Disarmament, and Development

- The Indira Gandhi Prize or the Indira Gandhi Peace Prize or Indira Gandhi Prize for Peace, Disarmament and Development is a prestigious award presented annually by the **Indira Gandhi Memorial Trust.**
- The Prize is **presented to individuals or organisations in honour of innovative efforts toward promoting international peace, development and a new international economic order; ensuring that scientific discoveries are used for the larger good of humanity, and enlarging the scope of freedom.**
- The prize carries a cash award of **2.5 million Indian rupees** and a medal. The recipients are chosen by a panel from a pool of national and international nominees.
- The panel constituted by the Indira Gandhi Memorial Trust **consists of prominent national and international personalities including previous recipients.**

Topic 51. THE ROLE OF THE GOVERNOR IN LEGISLATURE

Important for the subject: Polity

Supreme Court to hear Tamil Nadu, Kerala pleas against their Governors. Tamil Nadu Governor **R. N. Ravi** has '**withheld**' assent for certain Bills passed by the **Tamil Nadu Legislative Assembly.**

This follows the Supreme Court expressing '**serious concern**' over **inaction by the Governor on Bills** presented for his assent.

The court expressed **displeasure on similar delays** by Governors of Telangana, Punjab and Kerala.

What does the Constitution say:

- **Article 200** of the Constitution outlines **four options** available to a **Governor** when a legislature-passed Bill is presented for assent:

- Grant assent immediately.

Withhold assent.

- Return the Bill to the legislature, requesting reconsideration of the Bill or specific provisions.
- If the legislature reapproves the Bill, with or without accepting Governor-suggested amendments, the Governor is constitutionally obligated to grant assent.
- Alternatively, the Governor may reserve the Bill for the President's consideration. In the case of Presidential consideration i.e. Article 201 the decision to grant or withhold assent is made by the President. Notably, there is no specified timeframe for the President to decide on the Bill's outcome.

Do Governors have discretion:

- Governors did have a discretion to return Bills before the first provision in the draft Article 175(now Article 200).
- This was amended by the Constituent Assembly in 1949. The first provision to Article 200 is thus a saving clause and retains the discretion over the fate of the Bill solely in the hands of the State Cabinet. Article 163 makes it clear the Governor is not expected to act independently.
- The Supreme Court in the Shamsher Singh case verdict has held that a Governor exercises all his powers and functions conferred on him by or under the Constitution on the aid and advice of his Council of Ministers save in spheres where the Governor is required by or under the Constitution to exercise his functions in his discretion.
- The assent or return of the Bill does not involve the discretion of individuals occupying the Governor's post.

Can a Governor in practice actually sit on a Bill forever:

- Granting assent to Bills is among the limited areas where the Governor has discretionary powers. However, the exercise of this discretion must adhere to constitutional principles, relying on compelling reasons rather than personal preferences.
- Notably, Article 200 employs the term "shall," suggesting that the Constitution framers intended a mandatory requirement for Governors in this regard.

What were the recommendations of different commission:

- The Sarkaria Commission (1987) has emphasized that the Governor's power to reserve Bills for the President's consideration is a rare and implied discretionary authority, primarily applicable in cases of unconstitutionality.
- In all other instances, the Governor should adhere to Article 200, acting on ministerial advice.
- The commission suggested that the President should resolve such Bills within a maximum of six months, communicating reasons for withholding assent when

possible.

- Despite recommendations from the Punchhi Commission (2010) to decide on Bills within six months, these proposals remain unimplemented.

What are various Supreme Court observations w.r.t Governor

Purushothaman Nambudiri vs State of Kerala (1962):

- The Constitution Bench clarified that no specific time limit is imposed by the Constitution for the Governor to provide assent to Bills.
- Emphasized that the Governor must align actions with the will of the Legislature and operate in harmony with their Council of Ministers.
- The Supreme Court asserted that withholding assent to a law validly passed by the Legislature constitutes a direct attack on the federal structure of the Constitution. Noting that causing delays in assenting to Bills would be an arbitrary exercise, contradicting the constitutional spirit.

Shamsher Singh vs State of Punjab (1974):

- A 7-judge Constitution Bench outlined that the President and Governor should exercise their formal constitutional powers based on the advice of their Ministers, with few well-known exceptions.

Nabam Rebia case (2016):

- The SC cited B R Ambedkar's observations, stating that the Governor has no independent functions to execute but does have specific duties to perform, urging recognition of this distinction by the House.
- Ruled that Article 163 of the Constitution does not grant the Governor general discretionary power to act against or without the advice of the Council of Ministers.

Rajiv Gandhi assassination case (2018):

- The SC expressed dissatisfaction with the Governor's delay in taking action on the release of seven convicted prisoners, citing a lapse of more than two years.

What are the other Constitutional Position related to Governor:

- **Article 153** of the Indian Constitution mandates the appointment of a Governor in each state. The 7th Amendment to the Constitution however, allows for the appointment of the same person as Governor of two or more states.
- **Article 154:** The Governor shall have executive power over the state, which he shall exercise either directly or through officers subordinate to him in conformity with this Constitution.
- **Article 163:** There shall be a council of ministers, led by the Chief Minister, to assist and advise the Governor in the exercise of his powers, except when he is compelled to execute his functions at his discretion.
- **Article 164:** The council of ministers is collectively responsible to the state's legislative

assembly. This provision is the **cornerstone of the state's parliamentary system of governance.**

- **The Governor has the same Executive, Legislative, Financial, and Judicial authorities as the President of India.** However, the Governor's power is restricted in several ways compared to that of the President, as the **Governor lacks the President's military, diplomatic, and emergency authorities.**

Topic 52. GOVERNOR CAN'T WITHHOLD REPASSED BILLS, SAYS SC

Important for the subject: Polity

Governor can't withhold repassed Bills, says SC. The **Supreme Court acknowledged the Tamil Nadu government's argument** that once Bills have been "re-passed," the **Governor lacks the discretion** to withhold assent.

The court reacted to the State's submission that **under Article 200, once a Bill is re-passed, the Governor cannot withhold assent.**

- **The Chief Justice noted that Bills re-passed are akin to Money Bills, making rejection by the Governor impermissible.**
- **The court also recognized that the Governor, having withheld assent and returned the Bills once, cannot refer them to the President.** The case involves **10 Bills pending** with the Governor's office since January 2020.

What does the Constitution say:

- **Article 200 of the Constitution outlines four options** available to a **Governor** when a legislature-passed Bill is presented for assent:
- **Grant assent immediately.**
- **Withhold assent.**
- **Return the Bill to the legislature, requesting reconsideration of the Bill or specific provisions.**
- **If the legislature reapproves the Bill, with or without accepting Governor-suggested amendments, the Governor is constitutionally obligated** to grant assent.
- **Alternatively, the Governor may reserve the Bill for the President's consideration.**
- **In the case of Presidential consideration i.e. Article 201 the decision to grant or withhold assent is made by the President.** Notably, **there is no specified timeframe for the President** to decide on the Bill's outcome.

Do Governors have discretion:

- **Governors did have a discretion to return Bills before the first provision in the draft Article 175(now Article 200).** This was **amended by the Constituent Assembly in 1949.**
- **The first provision to Article 200 is thus a saving clause and retains the discretion over the fate of the Bill solely in the hands of the State Cabinet.** **Article 163** makes it

clear the Governor is not expected to act independently.

- The **Supreme Court in the Shamsher Singh case** verdict has held that a **Governor exercises all his powers and functions conferred on him** by or under the Constitution on the aid and advice of his **Council of Ministers** save in **spheres where the Governor is required by or under the Constitution to exercise his functions** in his discretion.
- The **assent or return of the Bill does not involve the discretion** of individuals occupying the Governor's post.

Can a Governor in practice actually sit on a Bill forever:

- Granting assent to Bills is among the **limited areas where the Governor has discretionary powers**. However, the exercise of this discretion **must adhere to constitutional principles**, relying on compelling reasons rather than personal preferences.
- Notably, **Article 200** employs the term “shall,” suggesting that the **Constitution framers intended a mandatory requirement** for Governors in this regard.

What were the recommendations of different commission:

- The **Sarkaria Commission (1987)** has emphasized that the **Governor's power to reserve Bills for the President's consideration** is a rare and implied discretionary authority, primarily applicable in cases of unconstitutionality.
- In all other instances, the **Governor should adhere to Article 200**, acting on **ministerial advice**. The commission suggested that the **President should resolve such Bills within a maximum of six months**, communicating reasons for withholding assent when possible.
- Despite recommendations from the **Punchhi Commission (2010)** to decide on Bills **within six months**, these proposals remain unimplemented.

What are various Supreme Court observations w.r.t Governor

Purushothaman Nambudiri vs State of Kerala (1962):

- The **Constitution Bench** clarified that **no specific time limit is imposed by the Constitution for the Governor to provide assent to Bills**.
- Emphasized that the **Governor must align actions with the will of the Legislature** and operate in harmony with their Council of Ministers.
- The **Supreme Court asserted that withholding assent to a law validly passed by the Legislature constitutes a direct attack on the federal structure of the Constitution**. Noting that causing delays in assenting to Bills would be an **arbitrary exercise, contradicting the constitutional spirit**.

Shamsher Singh vs State of Punjab (1974):

- A **7-judge Constitution Bench** outlined that the **President and Governor should exercise their formal constitutional powers based on the advice of**

their Ministers, with few well-known exceptions.

Nabam Rebia case (2016):

- The SC cited **B R Ambedkar's observations**, stating that the **Governor has no independent functions** to execute but **does have specific duties to perform**, urging recognition of this distinction by the House.
- Ruled that **Article 163 of the Constitution does not grant the Governor general discretionary power** to act against or without the advice of the Council of Ministers.

Rajiv Gandhi assassination case (2018):

- The SC expressed **dissatisfaction** with the Governor's **delay in taking action** on the **release of seven convicted prisoners**, citing a lapse of more than two years.

What are the other Constitutional Position related to Governor:

- **Article 153** of the Indian Constitution **mandates the appointment of a Governor** in each state. The **7th Amendment to the Constitution** however, **allows for the appointment of the same person as Governor of two or more states**.
- **Article 154:** The Governor shall have **executive power over the state**, which he shall **exercise either directly or through officers subordinate to him** in conformity with this Constitution.
- **Article 163:** There shall be a **council of ministers, led by the Chief Minister, to assist and advise the Governor** in the exercise of his powers, except when he is compelled to execute his **functions at his discretion**.
- **Article 164:** The **council of ministers is collectively responsible** to the state's legislative assembly. This provision is the **cornerstone of the state's parliamentary system** of governance.
- The Governor has the same **Executive, Legislative, Financial, and Judicial authorities as the President of India**. However, the Governor's power is restricted in several ways compared to that of the President, as the **Governor lacks the President's military, diplomatic, and emergency authorities**.

Topic 53. COURTS CAN GIVE LIMITED PRE-ARREST BAIL IN FIRS FROM OUTSIDE STATE

Important for the subject: Polity

Courts can give limited pre-arrest bail in FIRs from outside the state, said the Supreme Court.

The **Supreme Court of India ruled that a Sessions Court or High Court in a state can grant "limited" anticipatory bail** to an accused even if the **First Information Report (FIR)** is registered outside their jurisdiction.

The court **emphasized the constitutional imperative** of protecting citizens' rights and **acknowledged that an absolute bar on jurisdiction could lead to unjust**

consequences.

- The **grant of interim protection** should be exercised only in “**exceptional and compelling circumstances**,” ensuring **notice to the investigating officer** and public prosecutor.
- The **ruling aims to prevent abuse by requiring a territorial connection** between the **accused and the court approached** for relief.

What is a Bail:

- Bail is the **legal release of an accused individual** from detention **with the stipulation that they will appear in court** at a later date.
- The concept of bail is addressed in **Sections 436 to 439 of the Criminal Procedure Code (CrPC)**, and it can be **granted by either a police officer or a judicial magistrate under the CrPC**.

What are different categories of bail:

- **Bailable offences**
- **Section 2(a) of CrPC** categorizes a **bailable offence**.
- It means that an **offence that is classified as bailable in the First Schedule of the Code**, or which is classified as bailable under any other law.
- An accused can **claim bail as a matter of right** if he is accused of committing a **bailable offence**.
- Under **Section 436 of CrPC 1973**, a person accused of a bailable offence at **any time while under arrest without a warrant and at any stage of the proceedings** has the **right to be released on bail**.

Non-bailable offences

- A **non-bailable offence** is **defined as any offence which is not a bailable offence**.
- A person accused of a **non-bailable offence cannot claim bail as a right**. A person accused of non-bailable offences **can be granted bail provided the accused does not qualify the following conditions**:
- There are **reasonable grounds to believe** that he has **committed an offence punishable with death penalty or life imprisonment**.
- That the accused has committed a **cognizable offence** and he **had been previously convicted of an offence punishable with death, imprisonment for life or imprisonment of seven years or more** or if the accused been convicted on two or more instances of a cognizable and non-bailable offence.

What is Anticipatory Bail:

- Anticipatory bail is the **provision for granting bail to an individual who anticipates and fears arrest**.
- As per **Section 438 of the Criminal Procedure Code (CrPC)**, anyone expecting to be

charged with a non-bailable offence can seek anticipatory bail.

- The application should be submitted to the High Court or Sessions Court having jurisdiction over the alleged crime location.
- Anticipatory bail is secured before an arrest occurs, preventing the police from apprehending the individual if the court approves the anticipatory bail.
- This measure serves as a protective mechanism for individuals facing false accusations, often arising from personal or professional conflicts, ensuring their release even before any arrest takes place.

What is Transit Anticipatory Bail:

- Transit anticipatory bail is pursued when an individual anticipates or is aware of a case being filed against them in a state different from the one in which they are likely to face arrest.
- The objective of transit bail is to grant the individual temporary bail, enabling them to approach the relevant court in the state where the case has been filed to seek anticipatory bail.
- Without transit anticipatory bail, there is a risk of another state's law enforcement arresting the person from their home state, denying them the opportunity to apply for anticipatory bail.
- The procedure for obtaining transit anticipatory bail mirrors that of any other anticipatory bail application. Although not explicitly outlined in Indian law, the concept of transit anticipatory bail has evolved through judicial practice and legal precedents.

Topic 54. A FACT CHECK UNIT THAT IS UNCONSTITUTIONAL

Important for the subject: Polity

Introduction

A critical examination of the Government of Tamil Nadu's establishment of a Fact Check Unit, highlighting constitutional concerns, the potential impact on freedom of speech, and the challenges posed by ambiguity and absence of due process.

About the Fact Check Unit

- A Fact Check Unit is an entity or organization tasked with verifying the authenticity and accuracy of information, particularly in the context of news, announcements, policies, schemes, guidelines, and initiatives of a government or other institutions.

Important Highlights:

- **Establishment of Tamil Nadu Fact Check Unit:** The Government of Tamil Nadu

issues an order to create a Fact Check Unit for verifying information related to the state government across diverse media platforms.

- **Constitutional Concerns:** Assertions about the order violating fundamental rights and being constitutionally vague and arbitrary, particularly emphasizing the potential infringement on freedom of speech.
- **Impact on Freedom of Speech:** Examining the implications of the Fact Check Unit on freedom of speech and expression, highlighting the need for reasonable restrictions and challenging the authority of a Government Order in imposing such restrictions.
- **Chilling Effect Analysis:** A deeper analysis of the perceived chilling effect on freedom of speech, exploring the implications of the Government acting as the arbiter of **information authenticity**.

Key Issues:

- **Potential Misuse and Scope Ambiguity:** Critiques the lack of specificity in defining “information related to the Government of Tamil Nadu,” raising concerns about ambiguity and the possibility of misuse.
- **Absence of Due Process:** Points out the absence of due process, where the Fact Check Unit lacks a mechanism for the author’s hearing, positioning the government as the sole determinant of information authenticity.
- **Legal Limitations on Government Orders:** Discusses the legal limitations of Government Orders in imposing restrictions on freedom of speech, underscoring the need for a more nuanced and legislative approach.
- **Global Challenges of Misinformation:** Draws parallels with global challenges of misinformation, citing events like the U.S. presidential election, and underscores the necessity **for effective measures in addressing this widespread issue**.

Topic 55. DRAFT NATIONAL PHARMACY COMMISSION BILL

Important for the subject: Polity

Recently, The Union Ministry of Health and Family Welfare has unveiled the draft National Pharmacy Commission Bill, 2023, signaling a transformative shift in India’s healthcare landscape.

This bill aims to replace the Pharmacy Act, of 1948, and the existing Pharmacy Council of India (PCI) with the forward-looking National Pharmacy Commission.

Important Highlights of the Bill

- **Elevating Pharmacy Education:** The primary objective of the bill is to elevate pharmacy education by enhancing access to affordable, high-quality learning opportunities. It envisions a robust educational framework that prepares future pharmacy professionals to excel.
- **Universal Access to Pharmacy Services:** The bill aspires to make pharmacy services

accessible to all, fostering equitable healthcare delivery across the nation.

- **Integration of Research and Ethical Standards:** It encourages pharmacy professionals to seamlessly integrate the latest research into their practice, contribute to ongoing research efforts, and uphold the highest ethical standards.
- **Transparency and Adaptability:** The bill advocates for regular, transparent assessments of pharmacy institutions, the establishment of a national pharmacy register, and the flexibility to adapt to evolving healthcare needs. It also introduces an effective grievance redressal mechanism.

Structure of National Pharmacy Commission

- **A New Beginning:** The bill proposes the establishment of the National Pharmacy Commission, headquartered in New Delhi, heralding the dissolution of the existing Pharmacy Council of India.
- **Composition:** The commission will consist of a Chairperson, 13 ex-officio members, and 14 part-time members.
- **Three Key Boards:** The Central Government will constitute three vital boards under the commission:

Pharmacy Education Board

Pharmacy Assessment and Rating Board

Pharmacy Ethics and Registration Board

Empowering State Chapters

- The bill mandates every State Government to establish a state pharmacy chapter within one year from the Act's commencement.
- These chapters will operate under State Law and play a pivotal role in executing the Act's provisions.
- The **Pharmacy Ethics and Registration Board** will maintain the **National Pharmacy Register (NPR)**, a comprehensive repository containing detailed information about pharmacy professionals, ensuring transparency and accountability.

Topic 56. OUT OF JAIL ON FURLOUGH, RAM RAHIM HEADS TO U.P. ASHRAM, ADDRESSES HIS FOLLOWERS

Important for the subject: Polity

Gurmeet Ram Rahim Singh, chief of Dera Sacha Sauda and a rape convict, on Tuesday walked out of Rohtak's Sunaria jail on a 21 day furlough.

What is furlough?

- Furlough is **given in cases of long-term imprisonment**. A prisoner's **sentence is considered to be remitted during his furlough time**.

- It is to be **allowed on a regular basis for no reason** other than to allow the prisoner to maintain familial and social relationships and to counteract the negative consequences of long-term imprisonment.
- The **right to be released on furlough is a substantial and legal right** of the prisoner, and it cannot be rejected if permitted by law.
- Although furlough **can be claimed without a reason, the prisoner does not have an absolute legal right** to claim furlough.

What is Parole?

- Parole is a system of **releasing a prisoner with suspension of the sentence**. The release is conditional, usually **Important for the subject to behaviour, and requires periodic reporting** to the authorities for a set period of time.
- Parole is considered a **reformatory process**. The provision (along with furlough) was introduced with a view to humanising the prison system.
- State governments have their own Prisoner Release on Parole Rules. For instance, in Rajasthan, initial parole is granted for 20 days; a second parole is for 30 days, and a third for 40 days. Thereafter, the prisoner can apply for permanent parole.
- Parole is granted by the state executive and the competent authority takes a final decision on grant of parole on humanitarian considerations. If a plea for parole is rejected, the convict can move the High Court challenging the order of the competent authority.

What is Bail?

- **Bail is a legal agreement between an accused and the court in which the accused pays a sum of money as an assurance** that he/she will appear in court. The accused can be released temporarily on payment of bail. As per the Indian Constitution, every accused is entitled to apply for bail in India.

What are the types of bail?

- There are **three main types of bail in India**, interim, regular and anticipatory bail:
- **Regular bail:** This type of bail is granted to a person who is in police custody.
- **Interim bail:** This is a temporary bail where the higher court calls for documents before a final decision regarding the bail application can be taken.
- **Anticipatory bail:** This type of bail is granted by the Session Court or High Court to any person who believes that he/she will be arrested for a non-bailable offence.

Topic 57. TRIBAL ACTIVISTS HAIL COMPENSATION FOR LAND REGULARIZED UNDER FRA

Important for the subject: Polity

Tribal rights activists expressed satisfaction with the compensation awarded for land regularised under the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act 2006 (FRA) in connection with the 464-

km **Bharatamala Road project** linking Raipur and Visakhapatnam.

About Forest Rights Act 2006:

- FRA enacted in 2006 **recognises the rights of forest-dwelling tribal communities and other traditional forest dwellers to forest resources** on which these communities were dependent for a variety of needs, including livelihood, habitation and other sociocultural needs.
- It recognizes and vest the **forest rights and occupation in Forest land in Forest Dwelling Scheduled Tribes (FDST) and Other Traditional Forest Dwellers (OTFD)** who have been residing in such forests for generations.
- It strengthens the conservation regime of the forests while ensuring livelihood and food security of the FDST and OTFD.
- The Gram Sabha is the authority to initiate the process for determining the nature and extent of Individual Forest Rights (IFR) or Community Forest Rights (CFR) or both that may be given to FDST and OTFD.

Rights Under the Forest Rights Act:

Title rights:

- It gives FDST and OTFD the right to ownership to land farmed by tribals or forest dwellers Important for the subject to a **maximum of 4 hectares**.
- Ownership is only for land that is actually being cultivated by the concerned family and no new lands will be granted.

Use rights:

- The rights of the dwellers extend to extracting **Minor Forest Produce**, grazing areas etc.

Relief and development rights:

To rehabilitate in case of illegal eviction or forced displacement and to basic amenities, Important for the subject to restrictions for forest protection.

Forest management rights:

- It includes the right to protect, regenerate or conserve or manage any community forest resource which they have been traditionally protecting and conserving for sustainable use.

What is Bharatmala?

- It is an umbrella project under the **Ministry of Road Transport and Highways**. Under the plan the government intends to develop 83,677 km of highways and roads at an investment of around Rs 7 lakh crore over the next five years.
- In the first phase, the plan is to construct 34,800 km of highways at a cost of Rs 5.35

lakh crore.

- It focuses on the new initiatives like development of Border and International connectivity roads, Coastal & port connectivity roads, improving efficiency of National Corridors, Economic corridors and others.

Topic 58. HC SAYS SURROGACY USING DONOR GAMETES CAN'T BE PROHIBITED AS A CONDITION IN CONSENT FORM

Important for the subject: Polity

The High Court of Karnataka observed that disallowing surrogacy using donor gametes as a condition in the consent form for seeking permission to undergo the process is contrary to the Surrogacy (Regulation) Act, 2021.

What is Surrogacy?

- Surrogacy is an arrangement in which a woman (the surrogate) agrees to carry and **give birth to a child on behalf of another person or couple** (the intended parent/s).
- A surrogate, sometimes also called a **gestational carrier**, is a woman who conceives, carries and gives birth to a child for another person or couple (intended parent/s).

Altruistic Surrogacy:

- It **involves no monetary compensation** to the surrogate mother other than the medical expenses and insurance coverage during the pregnancy.

Commercial Surrogacy:

- It includes surrogacy or its related procedures undertaken for a monetary benefit or reward (in cash or kind) **exceeding the basic medical expenses and insurance coverage**.

What is the Surrogacy (Regulation) Act, 2021?

Provisions:

- Under the Surrogacy (Regulation) Act, 2021, a woman who is a widow or a divorcee **between the age of 35 to 45 years or a couple**, defined as a legally married woman and man, can avail of surrogacy if they have a medical condition necessitating this option.
- The intended couple shall be a legally married Indian man and woman, the **man shall be between the ages of 26-55 years** and the woman shall be between the ages of 25-50 years, and shall not have any previous biological, adopted, or surrogate child.
- It also **bans commercial surrogacy**, which is punishable with a jail term of 10 years and a fine of up to Rs 10 lakhs. The law allows only altruistic surrogacy where no money exchanges hands and where a surrogate mother is genetically related to those seeking a child.

Challenges:

- **Exploitation of the Surrogate and the Child:** The banning of commercial surrogacy moves from the rights-based approach to a needs-based approach, thus removing the women's autonomy to make their own reproductive decisions and right to parenthood. One could argue that the state must stop the exploitation of poor women under surrogacy and protect the child's right to be born. However, the current Act fails to balance these two interests.
- **Reinforces Patriarchal Norms:** The Act reinforces traditional patriarchal norms of our society that attributes no economic value to women's work and, directly affecting the fundamental rights of the women to reproduce under Article 21 of the constitution.
- **Emotional Complications:** In altruistic surrogacy, a friend or relative as a surrogate mother may lead to emotional complications not only for the intending parents but also for the surrogate child as there is great deal of risking the relationship in the course of surrogacy period and post birth.
- Altruistic surrogacy also limits the option of the intending couple in choosing a surrogate mother as very limited relatives will be ready to undergo the process.
- **No Third-Party Involvement:** In an altruistic surrogacy, there is no third-party involvement. A third-party involvement ensures that the intended couple will bear and support the medical and other miscellaneous expenses during the surrogacy process.
- Overall, a third party helps both the intended couple and the surrogate mother navigate through the complex process, which may not be possible in the case of altruistic surrogacy.

Some Exclusion from Availing Surrogacy Services:

- There is **exclusion of unmarried women, single men, live-in partners, and same-sex couples** from availing surrogacy services.

Topic 59. PLASTIC-FREE PLANET: PROTECTING SANITATION WORKERS & WASTE-PICKERS, JUST TRANSITION DISCUSSED ON DAY 2 OF INC-3

Important for the subject: Environment

The third session of the **Intergovernmental Negotiating Committee (INC-3) on Plastic Pollution** is going on. By **2040**, up to **19 per cent** of global **greenhouse gas emissions** will stem from plastics.

To meet the goal of **1.5 degrees Celsius** global temperature rise and to beat plastic pollution, there is a need for a treaty that reduces plastic production.

The **Plastics treaty** must protect the **right to science**, including **indigenous peoples' rights to their knowledge, practices and innovations**.

- The **Group of Latin America and Caribbean Countries** — a **UN regional group** composed of **33 member states** from **Central and South America** — presented

an official position advocating for the **rights of waste pickers**, which should be explicitly mentioned.

- **El Salvador and Guatemala** also supported the **protection of sanitation workers and waste-pickers**

Just Transition:

- It is a **mechanism for multilateral financing** by **developed countries** to support an **energy transition** in **developing countries**.
- It aims to **reduce emissions** in the **energy sector** and **accelerate the coal phase-out**. **Transition** describes the **gradual movement** towards **lower carbon technologies**, while **‘Just’** qualifies that this transition will not negatively impact society, jobs and livelihoods.

Intergovernmental Negotiating Committee on Plastic Pollution (INC):

- In March 2022, at the resumed **fifth session** of the **UN Environment Assembly (UNEA-5.2)**, a historic resolution was adopted to develop an **international legally binding instrument on plastic pollution**, including in the **marine environment**.
- **Goal:** To bring a **legally binding treaty** on plastic pollution by **2024**. The **first session** of the **INC (INC-1)** took place in **Punta del Este, Uruguay**, followed by a **second session (INC-2)** in **Paris, France**, and the **third session (INC-3)** is ongoing at the **UNEP Headquarters in Nairobi, Kenya**.

International Alliance of Waste pickers:

- It is a **networking process** started after the **1st World Conference of Waste pickers** held in **Bogotá, Colombia**, in **2008**.
- Waste pickers organizations and allies from **more than 30 countries** participated in this **first global event** organized by the **Bogota Waste Pickers’ Association**, **Kagad Kach Patra Kashtakari Panchayat waste pickers’ collective of Pune, India (KKPKP)**, the **Latin American Waste pickers’ Network**, **Avina Foundation** and **Women in Informal Employment: Globalizing and Organizing (WIEGO)**.
- Since then, an **International Steering Committee** has met once a year in **Durban, Belo Horizonte, Bangkok** and **Pune** to give direction to our strategic vision and work.
- It is currently focusing on the sharing and exchange of information and solidarity among thousands of waste pickers’ organizations.

Topic 60. RICH COUNTRIES MAY HAVE MET \$100 BLN CLIMATE GOAL LAST YEAR -OECD

Important for the subject: Environment

Developed nations may have **achieved** their overdue promise of **\$100 billion** to help poorer countries cope with climate change in **2022**, the **OECD** said.

In **2009** at the **Copenhagen conference of UNFCCC**, **developed countries** promised that from **2020** they would transfer **\$100 billion a year** to poorer nations hit by worsening climate change-fuelled disasters.

- Rich countries had previously signalled the target would not be met until 2023. The target was **not met in 2021**. That year, wealthy nations provided **\$89.6 billion**, an **8%** increase from **2020** levels.
- Most of the **2021** money – **\$73 billion** – was **public finance** and, of this, more than **two thirds** was **loans**.
- The **OECD** said **poor nations’ actual climate investment** needs could total **\$1 trillion per year** by **2025**.

What is the USD 100 Billion Target and why does it matter?

- In **2009**, at the **UNFCCC COP15** (held in **Copenhagen**),
- The developed country parties, to achieve meaningful mitigation actions and transparency on implementation, jointly set a target of **USD 100 billion a year by 2020** to address the needs of developing countries.
- The climate finance goal was then formally **recognized** by the **UNFCCC** Conference of the Parties at **COP16 in Cancun**. At **COP21 in Paris**, Parties extended the **\$100 billion goals through 2025**.
- After **COP26** there was a consensus that developed nations will **double their collective provision of adaptation finance** from **2019** levels by **2025**, in order to achieve this balance between adaptation and mitigation.
- Parties established the **Green Climate Fund (GCF)** at **COP 16 in 2010** and designated it as an **operating entity** of the **financial mechanism** in **2011**.

Topic 61. WHAT A US-CHINA CLIMATE DEAL MEANS FOR COP28

Important for the subject: Environment

The **United States** and **China** announced an agreement to **sharply increase clean energy**, **displace fossil fuels** and **reduce emissions** that are warming the planet.

About the deal:

- The **United States** is the biggest climate polluter in history, and **China** is currently the largest polluter. Together, they account for **38%** of the world’s greenhouse gases.
- The countries **agreed** to “**pursue efforts to triple renewable energy capacity globally by 2030**,” with the intention “**to accelerate the substitution for coal, oil and gas generation**.”
- Both countries anticipate that they will achieve “**meaningful absolute power sector emission reduction**” this decade.
- Both countries agreed that in their next set of **national climate pledges**, they would set **reduction targets for all greenhouse gas emissions** — not just **carbon dioxide** but

also **methane, nitrous oxide** and **other planet-warming gases**.

- **China** has agreed in principle to cut **methane**, which was absent in its earlier pledges during the **Paris Agreement 2015**. Also, **China** is the **world's largest methane emitter**.

Criticism of the deal:

- The deal **does not include** any promises by **China** to **phase out its use of coal** or to **stop issuing permits for new coal plants** and building them. There is **no mention** of an **'enforcement mechanism'** in the deal.

E3G (Third Generation Environmentalism):

- Established in **2004**.
- **E3G** is an **independent climate change think tank** with a global outlook.
- They work on the frontier of the climate landscape tackling the barriers and advancing the solutions to a safe climate. Their goal is to translate climate politics, economics and policies into action.
- Based in **Brussels, Berlin, London** and **Washington, D.C.**

Topic 62. INDIA HAS A CRITICAL ROLE IN DUBAI CLIMATE CONFERENCE: UAE OFFICIAL

Important for the subject : Environment

The **28th** edition of the Conference of Parties (COP) to the **UNFCCC** is going to be held in **Dubai, UAE**.

This year, the President of **CoP 28** is **Sultan Al-Jaber**, who is also the head of one of the world's largest oil companies, **Abu Dhabi National Oil Company**. This brings in the criticism that he would as COP President be **less inclined to push the world away from fossil fuels**.

- **President Sultan Al-Jaber** said that their economy is today **70% non-oil and gas**. And they have also established a renewable energy company named **Masdar**.

Post of CoP president: Their role and responsibilities:

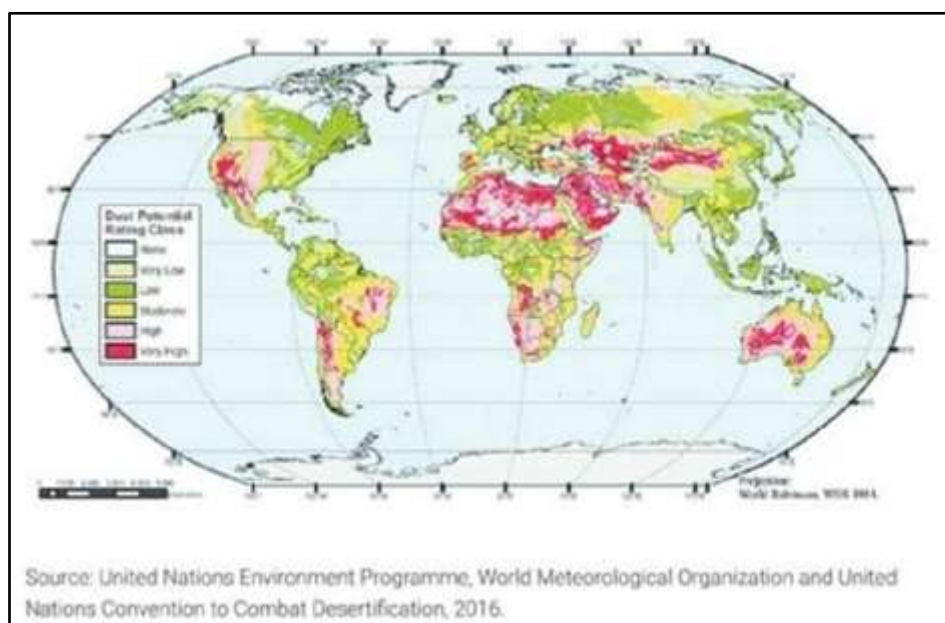
- The **government of the host country** holds the presidency for **one year**. It usually names one of its **ministers** as the **president**. The **role of the CoP president** is to facilitate and guide the negotiations.
- The **President does not have any special powers** but does play a key role in prioritising the agenda of discussions and helping forge a consensus on important issues.
- They are usually **extremely active behind the scenes, brokering deals and compromises, mediating conflicts, and acting as crisis managers**. However, the **final decisions** are always taken by consensus.

Extended role of COP presidents:

- For the past few years, **COP presidents** have engaged in **pre-conference diplomacy**, travelling all over the world to hold discussions with governments in order to understand their priorities and to get a sense of the kind of agreement that could be realistically achieved at the conference.
- There have been several instances when a **single country**– and not one from among the most powerful- has stood up and disagreed with the rest of the world, and the conference had to accommodate its concerns.

Topic 63. SAND AND DUST STORMS ARE INCREASING, HUMAN ACTIVITIES CONTRIBUTE 25% EMISSIONS: UNCCD

Important for the subject: Environment



United Nations Convention to Combat Desertification (UNCCD) released policy recommendations on sand and dust storms during a five-day meeting in **Uzbekistan**.

Sand and Dust Storms:

- It is a **meteorological phenomenon** characterised by **strong and turbulent winds** lifting an ensemble of small particles to great heights. They are known to have **adverse impacts on human health**, the **environment** and **economies**.
- Human activities contribute **25 per cent of global dust emissions**, with **agriculture** being the **main anthropogenic source**.
- Every year, **more than two billion tonnes** of **sand and dust** travel over thousands of kilometres through the Earth's atmosphere.
- **Policy Recommendation of UNCCD:** The strengthening of risk governance of sand and dust storms and increased investment and financing in sand and dust storm risk

reduction and impact mitigation measures in agriculture along with developing national capacity and raising awareness of sand and dust storms.

Food and Agriculture Organisation (FAO) Report on Sand and Dust Storms:

- Report title: **Sand and dust storms: A Guide to Mitigation, Adaptation, Policy, and Risk Management Measures in Agriculture.**

Key findings:

- **Sand and dust storms** present a formidable challenge to achieving **11** of the **17 Sustainable Development Goals**.
- The **main sources of sand and dust storms** are the **world's drylands**. About **75 per cent** of emissions come from **natural sources** such as hyper-arid regions, topographic depressions in arid areas and dry ancient lake beds with little vegetative cover.
- **Anthropogenic factors** such as land-use change, agriculture, water diversion and deforestation contribute to the remaining **25 per cent**.

Creation of new sources of sand and dust storms:

- **Water consumption in agriculture** shrinks water bodies, creating new sources of sand and dust storms.
- The excessive diversion of water from rivers in **Central Asia** over several decades towards agriculture has shrunk the **Aral Sea**, a pre-existing lake between Kazakhstan to its north and Uzbekistan to its south.
- It has now become the **Aralkum Desert**, a significant new source of sand and dust storms.

Role of Climate Change:

- Extreme wind events, aridity and frequent, severe and longer droughts worsen the storms. **Other factors** such as high air temperature, minimal precipitation and strong winds also act as drivers.

Impact of sand and dust storms:

- Sand and dust storms **lower the yields and productivity of crops, trees, pastures, and livestock**. However, many of these impacts have not yet been well-quantified. There is **no policy to address the risks posed by sand and dust storms**.

FAO Recommendation:

- Establishment of **risk monitoring and early warning systems**. This will enable the timely issuing of alerts and early warnings.

About United Nations Convention to Combat Desertification (UNCCD)

- **UNCCD** is **one of three Conventions** that originated at the 1992 Earth Summit in Rio de Janeiro.
- **Signed on** 14 October 1994 -13 October 1995

- **Location (Headquarters)** - Bonn, Germany.
- **Effective** 26 December 1996
- **Parties** – 197
- **UNCCD** declared **2006** the “**International Year of Deserts and Desertification**”.
- In **2013**, **Canada** became the **first country to withdraw** its membership from UNCCD but later **rejoined it in 2016**. The **Holy See (Vatican City)** is the **only state that is not a party to the convention** that is eligible to accede to it.

Topic 64. EXTREME WEATHER EVENTS MAY BE DRIVING REPLACEMENT OF NATIVE SPECIES WITH EXOTIC ONES

Important for the subject: Environment

Extreme weather events are affecting **land, marine and freshwater ecosystems** by influencing the displacement of **native species** with **non-native ones**, a recent analysis has found.

- The **increasing frequency of extreme weather events** such as **heatwaves, cold waves, droughts and floods** due to climate change is influencing ecosystems.
- **Marine animals** overall remained **insensitive to extreme weather events**, irrespective of whether they were **native** or **non-native** however, **native molluscs, corals and anemones** showed **negative effects** due to heatwaves.
- **Heatwaves and storms** affected **non-native species** in terrestrial and freshwater habitats.

Impact of extreme weather events on Native and non-native species:

Native Species	Non-native species
Native animals responded adversely to heatwaves, droughts and cold spells in terrestrial ecosystems and displayed more vulnerability to extreme weather events.	Non-native species were less abundant in terrestrial ecosystems and their body conditions and life history traits were affected in freshwater systems.
They indicated declines in body conditions, life history traits, abundance, distribution and recovery in terrestrial ecosystems and community structure in freshwater ecosystems.	Non-native terrestrial animals were affected only by heatwaves, while their counterparts in freshwater animals showed susceptibility to only storms. Non-native marine animals remained largely unaffected by most disturbances.

Native terrestrial animals were affected harder by heatwaves, cold spells and drought. Native freshwater species, on the other hand, were vulnerable to most events except cold spells.

Why do non-native animals show less sensitivity to extreme weather events compared to native species belonging to the same taxonomic class?

- The **non-native** or **invasive species** have higher growth rates, higher phenotypic plasticity, stronger competitive abilities, quicker recovery and proliferation and broader tolerance of disturbance compared to the native species.
- **Plasticity** is the capacity of an individual organism to alter its behaviour, physiology/gene expression, and/or morphology in direct response to changing environmental conditions.
- Severe drought events decreased native invertebrates and fishes by **increasing water salinity**, facilitating the establishment of **non-native salt-tolerant counterparts**.

Topic 65. KADALUNDI'S SHRINKING MUDDFLAT ECOSYSTEM KEEPS BIRDS AWAY

Important for the subject: Environment

Kadalundi, a village on the southwest coast in Kozhikode district of Kerala, had about 8 hectares of nutrient rich intertidal mudflats in the early 2000s. Today, the expanse of mudflats in the estuary of the Kadalundipuzha river has reduced to about 1 hectare. This too is gradually being covered with sand, depriving prey to thousands of shorebirds that migrate from colder climes in winter to the village.

About Mudflat Ecosystem:

- Mudflats refer to land near a water body that is regularly flooded by tides and is usually barren (without any vegetation). It is also known as tidal flats and formed upon the deposition of mud by tides or rivers.
- Mudflats and mangroves together constitute an important ecosystem. Mudflats serve to protect coastal lands from the eroding forces of nature and also provide an important habitat for shore birds.

Reasons of Shrinking

- The main reason behind the drop in water levels is **sedimentation**, the process of particles such as sand and stones settling to the bottom of a body of water. **Human activities**, such as unsustainable consumption of water.
- **Increasing temperature and potential evapotranspiration (PET) due to climate change** are also main reasons for shrinking.

What are the effects of the climate changes on water bodies?

- **World's largest lakes and reservoirs** – Have shrunk **more than 50% over the 3 decades**. From these water bodies, **approximately 600 cubic km of water was lost** between 1992 and 2020 which is equivalent to the total water used in the United States for the entire year of 2015.
- **Sedimentation** – Main cause of the decline in the water storage for more than more than half of the reservoirs located in peninsular India.
- Sedimentation has a larger impact than hydro climate variability such as droughts and recovery from droughts. Among the worst affected natural lakes in the country is **Ladakh's Tso Moriri**.
- **Water consumption** – Unsustainable water consumption in the world's large lake have led to the decreased water levels.
- **Arctic lakes** – Shrunk as a result of a combination of changes in precipitation, runoff, temperature, and PET, which are likely a concurrent result of natural variability and climate change. **Humid tropics and high altitudes** – Natural lakes located in humid tropics and high altitudes are also experiencing water shortages.
- **Human activities** – Such as unsustainable consumption of water and increasing temperature and potential evapotranspiration (PET) have led to reduced water levels.

Implications of shrinking waterbodies:

- **Water scarcity:** The decline of large lakes and reservoirs has severe implications for global water resources. The reduced availability of freshwater impacts various sectors, including **agriculture, energy, and human consumption**.
- It exacerbates water scarcity, leading to conflicts and socio-economic challenges. **The sedimentation of sand** on mudflats not only **brings down the amount of migratory prey there**, but also helps mangroves easily proliferate. The **viviparous mangroves** according to researchers, can display an **aggressive invasive behaviour**.
- **Food security:** Agriculture heavily relies on water resources for irrigation. As lakes and reservoirs shrink, the water supply for agricultural activities diminishes, impacting crop yields, food production, and food security. This can lead to **increased food prices and food shortages**. **Energy generation:** Many hydropower plants depend on large lakes and reservoirs for water supply. The decline in water levels affects hydropower generation, leading to energy shortages and an increased reliance on other energy sources, potentially impacting energy prices.
- **Ecosystem disruption:** Large lakes and reservoirs support diverse ecosystems, and their decline threatens the survival of aquatic plants and animals. It disrupts the ecological balance, affecting biodiversity and the overall health of ecosystems.
- **Socio-economic impacts:** The decline of lakes and reservoirs directly affects human populations. Communities relying on these water bodies for drinking water, agriculture, and livelihoods face water shortages, increased competition, and potential migration.

Topic 66. AT TALKS ON CUTTING PLASTIC POLLUTION

Important for the subject: Environment

As countries meet in Nairobi to negotiate a treaty aimed at cutting plastics pollution. **Environmental advocacy groups, Break Free From Plastic and the Global Alliance for Incinerator Alternatives**, released a critical report on **plastic credits**, asserting that they are a **flawed tool incapable of effectively addressing global plastic pollution**.

The report, **presented in Nairobi during United Nations-led discussions on a plastic pollution treaty**, accused plastic credits of often being a form of corporate greenwashing.

- The analysis **focused on databases from key advocates** of plastic offsetting, **Verra and the Plastic Credit Exchange marketplace**, revealing **significant shortcomings in financing, transparency, and auditing**.
- The report **also highlighted concerns about plastic incineration** in cement kilns, suggesting it merely substitutes one pollution source for another. **Verra defended plastic credits**, emphasizing their potential **to mobilize funds essential for combatting plastic pollution**

What is Plastic Credit:

- **Plastic credits**, akin to carbon credits **for offsetting emissions**, involve **entities paying for the collection of a specified weight of plastic globally**, justifying their own plastic production or usage.
- This **approach enables companies** to address their plastic footprint by financially contributing to the removal of an equivalent amount of plastic.
- Accreditors like **Verra and marketplaces such as the Plastic Credit Exchange (PCX)** **facilitate this exchange**, allowing companies **to achieve plastic neutrality** or claim **“net-zero plastic”** by purchasing enough plastic credits.

What does the report say:

- A report by the **Break Free From Plastic movement and GAIA** scrutinized **plastic offsetting projects by Verra and the Plastic Credit Exchange**. It revealed **flaws, citing issues such as credits for waste incineration** and doubts about **additionality**.
- The report **questions the environmental impact**, asserting that **plastic offsetting** often transforms plastic pollution into harmful air pollution and greenhouse gas emissions.
- It also **raises concerns about the financial implications**, estimating **potential revenue of over \$4.6 billion by 2030 from Verra’s projects** if credits are sold at \$500 per ton.

What do plastic credits proponents say:

- **Verra advocates for plastic credits**, highlighting **benefits such as supporting waste collection and recycling infrastructure**, improving conditions for the informal waste sector, and **aiding low- and middle-income countries in developing waste**

management capabilities.

- The **Plastic Credit Exchange** aims to advance the circular economy, founded in 2019 in the Philippines, a focal point of the plastic pollution crisis.

What do opponents say:

- **Environmentalists** argue that **plastic credits**, particularly those generated from incineration and cement kilns, **contribute to toxic emissions, spreading pollutants invisibly**.
- **Yuyun Ismawati**, a senior advisor, criticizes plastic credits in Indonesia, **citing harmful impacts on affected communities**.
- **Policymakers** see credits as a means for **single-use plastic-dependent companies** to **evade business model changes**, hindering efforts against plastic pollution.

Are plastic credits in the pollution treaty:

- The **current draft text** under discussion at the **international treaty negotiations in Nairobi** **does not include provisions** for plastic pollution reduction.
- However, **negotiators are working on developing the first-ever international, legally binding treaty** addressing plastic pollution on land and at sea.
- The ongoing talks, the **third in a series of five meetings**, aim to **conclude negotiations by the end of the following year**. Representatives from **various nations, petrochemical companies, and environmentalists** are participating in the discussions.

Topic 67. INDIA IS ADOPTING ADVANCED SEWAGE WASTEWATER TREATMENT TECH, BUT MUST CHOOSE THOSE THAT BEST MEET LOCAL NEEDS

Important for the subject: Environment

Newer, better			
Comparison of performances of three new wastewater treatment technologies that India can embrace to curb water pollution			
Features	Membrane bioreactors	Moving bed biofilm reactors	Sequencing batch reactors
Process design	Suspended growth process	Attached growth process	Suspended growth process
Biological media	Membrane bioreactor	Plastic carrier media	No specific media
Treatment	Biological and membrane	Biological and carrier media	Biological and sludge settlement
Process control	Continuous flow	Continuous flow	Batch flow
Footprint (per millions of liters per day)	300-600 m ²	200-500 m ²	400-800 m ²
Effluent quality (average treatment efficiency)	88.62%	73.75%	80%
Nutrient removal	High	Moderate to high	Moderate to high
Sludge production (per kilolitre of treatment)	0.1 - 0.3 kg	0.05 - 0.15 kg	0.1 - 0.2 kg
Energy usage (per kilolitre of treatment)	High (0.5 - 1.5 kWh)	Moderate to high (0.3 - 0.8 kWh)	Moderate to high (0.5 - 1.2 kWh)
Operator skills	Moderate	Moderate	Moderate
Capital cost (per kilolitre of treatment)	High (\$100-\$200)	Moderate (\$80-150)	Moderate (\$70-20)
Operational cost (per kilolitre of treatment)	High (\$0.3 - \$0.6)	Moderate (\$0.2 - \$0.4)	Moderate (\$0.2-\$0.5)
Odor generation	Minimal	Minimal	Minimal

Source: Authors' analysis

Indian cities currently treat **only 28 per cent** of the **72,368 million litres of sewage** they generate every day, as per the latest data released by the **Central Pollution Control Board** in **December 2022**.

Most sewage treatment plants in the country rely on **outdated technologies** such as the **activated sludge process, planted drying beds, soil biotechnology** and **upflow anaerobic sludge blanket reactors** that have a treatment efficiency of around **65 per cent** and are cumbersome to set up and manage.

- In recent years, several states have adopted some newer technologies that have **treatment efficiency** of around **80 to 90 per cent**. **Andhra Pradesh** and **Telangana** have opted for **sequencing batch reactors (SBRs)** and **moving bed biofilm reactors (MBBRs)**.
- The sewage treatment plant (STP) at **Durgam Cheruvu Lake, Hyderabad** and most of the STPs of **Bihar, Maharashtra, Goa, Haryana, West Bengal** and **Uttarakhand** have opted for **SBRs**.
- When compared to traditional treatment techniques, these technologies have **higher treatment and nutrient removal capacity**, are **better at handling shock loads** (spikes in pollution concentration in wastewater), are more **resource-efficient** and **generate high-quality effluent** with greater reuse potential.

Membrane bioreactors:

- It has the highest rate of filtration which is achieved by combining biological processes with a membrane.

Working:

- Sewage is first treated inside a bioreactor where microorganisms break down **organic matter** and **eliminate pollutants** by converting them into **carbon dioxide, water** and **biomass**.
- After this, the **wastewater** is pressured through a **fine-pore membrane** to segregate treated effluent from **micro-organisms and suspended solids** and ensure the production of high-quality, clarified effluent that can be reused without further treatment.
- It also has a **small footprint**, making it ideal for areas with **land scarcity**. It offers a **high level of automation** and **process control** through sensors for real-time control over filtration.

Advantages:

- Highly efficient, and crucial for food processing industries.

Disadvantages:

- Energy-intensive, expensive to set up and operate, requires regular maintenance, skilled human intervention and frequent system downtime to replace the membrane.

Moving Bed Biofilm Reactor (MBBR):

- Extensively used for handling municipal sewage. The process takes place in a bioreactor

with plastic carriers on which microorganisms can attach and thrive.

- As wastewater flows through the bioreactor, the **microorganisms** in the biofilm **metabolise organic matter and pollutants** in the sewage. The **biofilm** is designed to **freely float within the bioreactor**, facilitating the distribution of wastewater and oxygen.

Advantages:

- High treatment efficiency, can handle wastewater with different pollutant compositions, produces limited sludge, requires less energy to operate and has negligible downtime.

Disadvantages:

- Limited removal of solids and nutrients, the biofilm carriers within MBBRs can clog up the system if not effectively managed, regular maintenance, and it relies less on automation and focuses on manual adjustments to control parameters like aeration and effluent quality.

Sequencing Batch Reactors:

- These **combine** biological treatment and sedimentation within a single bioreactor and each batch cycle begins with the filling up of the reactor with wastewater.
- This is followed by **aeration** to stimulate microorganisms to **metabolise organic matter**. Once the biological reaction is complete, aeration is halted, allowing suspended solids to settle at the bioreactor's bottom.
- This results in the formation of a supernatant layer above the settled solids, which is decanted, leaving the settled solids in the reactor. The treated effluent is typically discharged or further processed.

Advantages:

- A high-efficiency rate, allows high automation and process control, facilitates the removal of nitrogen and phosphorus through specific process stages, and require smaller reactor volumes thus reducing construction costs.

Disadvantages:

- Longer treatment cycles, generate a significant amount of sludge, requiring proper management and disposal strategies.

Topic 68. HORSESHOE CRAB DECLINE SPARKS URGENT CONSERVATION PLEA

Important for the subject: Environment

About Horseshoe crab:

Horseshoe crabs are **marine and brackish water arthropods** of the family **Limulidae** and

the **only living members** of the order **Xiphosura**.

Despite their name, **they are not true crabs or crustaceans**: they are **chelicerates**, most closely related to **arachnids** such as **spiders, ticks, and scorpions**.

Tetrodotoxin (a form of **neurotoxin**) may be present in **one horseshoe crab species**, **Carcinoscorpiusrotundicauda**.

- They live primarily in and around **shallow coastal waters** on **soft, sandy or muddy** bottoms. They are generally found in the **intertidal zone** at spring high tides.
- In recent years, **population declines** have occurred as a consequence of **coastal habitat destruction** and **overharvesting**.

Species of Horseshoe crabs and their conservation status:

- **Tri-spine horseshoe crab** (*Tachypleustridentatus*)- **Endangered** in IUCN Red list.
- **American horseshoe crab** (*Limulus polyphemus*)- **Vulnerable**
- **Coastal horseshoe crab** (*Tachypleus gigas*) and **Mangrove horseshoe crab** (*Carcinoscorpiusrotundicauda*) are **not** yet included in the **IUCN Red List**.

Horseshoe crabs in India:

- The **coast of Odisha** is home to **two of the three horseshoe crab species** found in **Asia** — the **coastal horseshoe crab** (*Tachypleus gigas*) and the **mangrove horseshoe crab** (*Carcinoscorpiusrotundicauda*).
- Globally recognised as **living fossils** (as their basic form has remained nearly unchanged over millions of years). **Medicinal properties of Horseshoe crabs**. These **blue-blooded crabs** play a vital role in **medical sciences and biomedicine**.
- The **blood of horseshoe crabs** can clot in the **presence of bacteria**, rendering them **harmless**. This **clotting ability** has been extensively utilised in **testing injectable medicines, vaccines, and sterile medical equipment**, including its recent use in **COVID-19 vaccines**.
- Their outer layer consists of **chitin**, enhancing **wound healing** and serving as a crucial component in **treating severe wounds** like **burns**.

Conservation status:

- In **India**, the species is included in **Schedule IV** of the **Wildlife (Protection) Act 1972**.

Threats:

- **Shoreline alterations, sea level rise** that affects their **spawning habitats**, and **destructive fishing practices** that lead to the **crabs becoming bycatch**, threaten the population of the species. Only a few remaining populations might be left in **West Bengal** and some parts of **Andaman and Nicobar**.

Conservation measures:

- Scientists and conservationists working on horseshoe crabs have urged the government to develop a robust protection mechanism for the conservation of these living fossils.
- The **IUCN Horseshoe Crab Specialist Group (SSG)** is pursuing the possibility of **designating horseshoe crabs** as the first “**World Heritage Species**” under the **UNESCO World Heritage Programme**.
- In 2020, the **IUCN SSC Horseshoe Crab Specialist Group** formally designated **June 20** as **International Horseshoe Crab Day** annually. The **Beibu Gulf Declaration on Global Horseshoe Crab Conservation** was declared in 2019 in **Guangxi, China**.

Topic 69. WCA REBRANDS AS FUTURECOAL, BATS FOR SUSTAINABLE COAL USAGE

Important for the subject: Environment

The **World Coal Association (WCA)** has rebranded itself as **FutureCoal** – The Global Alliance for Sustainable Coal.

The change was in response to a call from coal and allied sectors to modernise and unite under a common purpose.

About the World Coal Association (WCO) or Future Coal:

- Established in **1985**
- It is an **international non-profit, non-governmental association** based in **London, United Kingdom**. It was created to represent the **global coal industry**.
- The association was formerly called the **World Coal Institute (WCI)** but changed its name in **November 2010**.
- It undertakes **lobbying, organises workshops, and provides coal information to decision-makers** in **international energy and environmental policy and research discussions**, as well as supplying information to the general public and educational organisations on the benefits and issues surrounding the use of coal. It also promotes **clean coal technologies**.
- It has participated in a number of **United Nations** and **International Energy Agency (IEA) workshops, boards, and forums**, including the **UN Commission on Sustainable Development**, the **UN Framework Convention on Climate Change**, the **IEA Working Party on Fossil Fuels**, and the **IEA Coal Industry Advisory Board**.
- It is also part of the **Carbon Sequestration Leadership Forum**. It is co-author of a report on the **future of coal** in **ASEAN nations**.

Coal distribution in India:

- There are two types of coal mainly found in India:
- Gondwana coal
- Tertiary coal

Distribution of Gondwana coal:

- **Chhattisgarh:** Korba coalfield, Birampur coalfield, Hasdo-Arand coalfield, Chirmiri coalfield, Lakhanpur coalfield, Jhilmili coalfield, Johilla coalfield, Sonhat coalfield, Tatapani-Ramkota coalfields.
- **Jharkhand:** Jayanti, Bokaro, Girdih (Karharbari), Karanpura and Ramgarh coalfields, Auranga, Hutar, Deltenganj, Devgarh, Rajmahal.
- **Odisha:** Talcher, Rampur- Himgir, Ib river coalfield.
- **Madhya Pradesh:** Singrauli (Waidhian), Pench-Kanhan-Tawa, Sohagpur, Umaria.
- **Andhra Pradesh:** Singareni and Kothagudam.
- **Maharashtra:** Kamptee, Wun, Wardha Valley, Ghughus, Ballarpur and Warora.
- **West Bengal:** Raniganj, Bardhaman, Bankura, Purulia and Birbhum.
- **Uttar Pradesh:** Part of Singrauli coalfield spans in **Mirzapur district** of U.P.

Distribution of Tertiary Coalfield:

- **Assam:** Makum, Nazira, Mikir Hills, Dilli-Jeypore and Lakhuni.
- **Arunachal Pradesh:** Upper Assam Coal belt extends eastwards as Namchick-Namrup coalfield.
- **Meghalaya:** Darrangiri field (Garo hills) and Siju, Cherrapunji, Liotryngew, Maolong and Langrin coalfields (Khasi and Jaintia hills).
- **J&K and Himachal Pradesh:** Kalakot and surrounding regions in Jammu, south of Pirpanjal, Chamba district in Himachal Pradesh.
- **Tamil Nadu:** Neyveli Lignite fields of Cuddalore district.

Topic 70. ONE-DAY TEMPERATURES BREACH 2°C WARMING POINT FOR FIRST TIME: REPORT

Important for the subject: Environment

The world breached 2 degrees Celsius of warming on November 17, 2023, according to preliminary analysis from the European Centre for Medium-Range Weather Forecasts (ECMWF).

The temperatures were 2.06°C warmer than the pre-industrial era, the average for the 1850-1900 period. This short-term breach of the 2°C is associated with the climate phenomenon El Nino and long-term human-caused climate forcing.

- The **2023 State of Climate Report** highlighted that the world has already witnessed **38 days with global average temperatures above 1.5°C by 12 September**—more than any other year.
- **June through August** of this year was the **warmest period ever recorded**.

Evidence of a warming planet:

- Global and North Atlantic sea surface temperatures are at all-time highs, Widespread

drought in Amazon and the drying up of Rio Negro, wildfires in Siberia and widespread heat wave events in Europe and North Canada regions.

- The last **12 months** have been the **warmest in the last 125,000 years**, with temperatures reaching **1.32 degrees Celsius** above the pre-industrial era.

Topic 71. SAVING INDIA'S ONLY APE, THE HOOLOCK GIBBON

Important for the subject: Environment

In the news:

The **Hollongapar Gibbon Sanctuary (HGS)**, a habitat of the **endangered Western hoolock gibbon** in **Assam**, is fragmented by a railway track that goes through the sanctuary.

At **HGS**, the **gibbon population** comprising **125 individuals** (in 26 groups) inhabits an area that is fragmented by the **Mariani-Dibrugarh railway line** that is currently unelectrified.

Mariani-Dibrugarh railway line is a part of the **Lumding-Dibrugarh broad gauge railway section**.

About Hoolock Gibbon (Hoolock hoolock):

- **Gibbons**, the **smallest and fastest of all apes**, live in **tropical and subtropical forests**. The **tailless Hoolock Gibbon** is the **only ape found in India**.
- The primate is **native to eastern Bangladesh, Northeast India and Southwest China**. They are primarily **arboreal**, which means they live in trees.
- The estimated population of hoolock gibbons is **12,000**. Like all apes, they are **extremely intelligent**, with **distinct personalities** and **strong family bonds**.
- **Key threats:** Habitat loss and fragmentation, and hunting.

The Hoolock Gibbon is categorized into two types:

Western hoolock gibbon:

- It inhabits **all the states of the northeast**, restricted between the **south of the Brahmaputra River** and **east of the Dibang River**. Outside **India**, it is found in **eastern Bangladesh** and **north-west Myanmar**.
- It is listed as **Endangered** under the **International Union for Conservation of Nature (IUCN) Red List**.

Eastern hoolock gibbon:

- It inhabits specific pockets of **Arunachal Pradesh** and **Assam in India** and in **southern China** and **northeast Myanmar** outside India. It is listed as **Vulnerable** under the **IUCN Redlist**.
- In **India**, both species are listed on **Schedule 1** of the **Indian (Wildlife) Protection Act 1972**.

Hollangapar Gibbon Sanctuary:

- Formerly known as the **Gibbon Wildlife Sanctuary** or **Hollongapar Reserved Forest**. It is an **isolated protected area** of **evergreen forest** located in **Assam, India**.
- Initially in **1881**, its forests used to extend to the **foothills of the Patkai mountain range**. Since then, the forest has been fragmented and surrounded by **tea gardens** and **small villages**. In the early **1900s**, **artificial regeneration** was used to develop a well-stocked forest, resulting in the **site's rich biodiversity**.
- It contains **India's only gibbons** – the **hoolock gibbons**, and **Northeastern India's only nocturnal primate** – the **Bengal slow loris**.
- In addition to the **gibbon**, the **HGS** is home to **six other primate species**, making it an area with the **highest biodiversity of primate species** of any Protected Area in the country. **Western hoolock gibbon** is the **flagship species** of the **HGS**.
- The **upper canopy** of the forest is dominated by the **hollong tree** (*Dipterocarpus macrocarpus*), while the **nahar** (*Mesua ferrea*) dominates the **middle canopy**. The **lower canopy** consists of **evergreen shrubs and herbs**.
- The habitat is threatened by **illegal logging, encroachment of human settlements, and habitat fragmentation**.

Topic 72. THE OECD REPORT ON CLIMATE FINANCE

Important for the subject: Environment

A new report, published by the **Organisation for Economic Cooperation and Development (OECD)**, showed that **economically developed countries fell short** of their promise to **jointly mobilise \$100 billion a year**, towards the **climate mitigation and adaptation** needs of **developing countries**, in **2021** – one year past the 2020 deadline.

The **developed countries** mobilised **\$89.6 billion** in **2021** and **finance for adaptation fell by 14%** in **2021** compared to **2020**.

- The **failure to mobilise adequate climate finance** lowers the capacity of **developing countries** to address **climate mitigation** (like emissions reduction with renewable energy) and **adaptation** needs (like developing and incentivising climate-resilient agriculture), and **reduces trust** among the world's poorer countries that the developed world is serious about tackling the climate crisis.

How is climate finance accounted for?

- Out of the **\$73.1 billion** mobilised in **2021** by the **public sector** via bilateral and multilateral channels, **\$49.6 billion** was provided as **loans (interest rate is still unknown)**.
- An assessment by the **American non-profit research group** Climate Policy Initiative of global climate finance flows between 2011 and 2020 found that **61% of climate finance** was provided as **loans**, of which **only 12%** was at **concessional interest rates**.

What is additionality?

- The UNFCCC states that **developed countries** “shall provide **new and additional financial resources** to meet the agreed full costs incurred by **developing country Parties** in complying with their obligations under the convention”.
- This means **developed countries** can’t cut **overseas development assistance (ODA)** in order to finance climate needs. The “**new and additional finance**” also means **developed countries can’t double-count**. For example, a **renewable energy project** could contribute to both **emission reductions** and **overall development** in a region.
- As per the **U.N. Convention**, however, **donor countries** can’t categorise such funding as both **ODA** and **climate finance** because it wouldn’t fulfil the “**new and additional**” criterion.

What counts as climate finance?

- There is no commonly agreed definition of ‘**climate finance**’. This ambiguity works in **favour of richer countries** because it leaves the door open to arbitrarily classify any funding, including **ODA** and **high-cost loans**, as **climate finance** and escape the scrutiny that a clearer definition might bring.

How much do developing countries need?

- The figure of **\$100 billion** came out of thin air at the **COP 15** talks and isn’t based on an assessment of how much climate investment developing countries actually need.
- By **2025**, **developing countries** are estimated to require around **\$1 trillion a year** in climate investments, rising to roughly **\$2.4 trillion** each year between **2026** and **2030**.

Topic 73. EMISSIONS GAP REPORT: ONLY 14% CHANCE OF LIMITING GLOBAL WARMING TO 1.5°C EVEN IN MOST OPTIMISTIC SCENARIOS

Important for the subject: Environment

UNEP has published the **14th Emission Gap Report 2023**.

Findings of the report:

There is only a **14 per cent** chance of **limiting global warming to 1.5 degrees Celsius over pre-industrial levels**, considering the most optimistic climate action projects.

Even if the existing **nationally determined contributions (NDC)**, both conditional and unconditional, are delivered by **2030**, the world will warm by **2.5°C**, breaching the **2°C** target set by the Paris Agreement.

- Warming under the current policy scenarios will reach **3°C**. The **implementation gap** — the difference between the commitments made by countries in their NDCs and the actual measures and policies implemented to achieve those commitments — stands at **five gigatonnes of carbon dioxide (CO₂) equivalent**.

- Only **nine countries** have updated their **nationally determined contributions (NDC)** or made new commitments since the **27th Conference of Parties** to the **United Nations Framework Convention on Climate Change** in **2022**.
- In **2023**, **86 days** have experienced **warming higher than 1.5°C**. The **global emissions** peaked at **57.4 gigatonnes of carbon dioxide equivalent** in **2022**.
- Of the **global GHG emissions**, approximately **two-thirds** come from **fossil fuel-based CO₂ emissions**.

Contributions to emissions are unequal:

- A minority of nations, led by the **United States**, the **European Union** and **China**, account for a **disproportionate share of historical emissions and warming**.
- The **G20** collectively are responsible for **three-quarters of the current burden of warming**. The **global top 10 per cent income bracket** generates a staggering **45-49 per cent** of total emissions, while the **bottom 50 per cent** contributes a mere **7-13 per cent**.

Policy measures:

- The **United States** passed the **Inflation Reduction Act**, and it will help the US reach **two-thirds of its 2030 NDC goals**.
- The **European Union's Fit for 55** and **REPowerEU** initiatives could surpass their **2030 targets**. But challenges arise from **increased investments in fossil gas infrastructure** and a **temporary shift from gas to coal**.

Low confidence in Net Zero targets:

- **97 parties from 101 countries**, representing **82 per cent of global greenhouse gas emissions**, had adopted **Net Zero pledges**.
- While **37 per cent of global emissions** are covered by **Net Zero targets for 2050 or earlier**, **44 per cent** have commitments **beyond 2050**.
- The **progress indicators** for **Net Zero Targets** such as legal status, implementation plans, and emission reduction pace **remain deeply insufficient**, signaling a low confidence in the Net Zero targets.
- **Low and Lower-middle-income countries** are facing challenges like high debt, low clean energy investments, and vulnerability to volatile fossil fuel markets.

Exploring carbon dioxide removal (CDR) strategies:

- **CDR is only the direct removal of CO₂ from the atmosphere** and its durable storage in geological, terrestrial, or ocean reservoirs or in products.
- **CDR** encompasses a wide array of approaches, including **direct air capture (DAC)** coupled to **durable storage**, **soil carbon sequestration**, **biomass carbon removal and storage**, **enhanced mineralization**, **ocean-based CDR**, and **afforestation/reforestation**.

Topic 74. INTERNATIONAL TROPICAL TIMBER COUNCIL CONCLUDES WITH MAJOR DECISIONS, INCLUDING ITS EXTENSION

Important for the subject: Environment

The **59th International Tropical Timber Council (ITTC)**, a group that meets at least once a year to discuss a wide-ranging agenda aimed at **promoting sustainable tropical forest management and the trade of sustainably produced tropical timber**, concluded on November 17, 2023 in **Thailand**.

The countries agreed to endorse **eight projects** related to **sustainable forest management and related objectives**. The session also approved and adopted a budget of **\$7.1 million** for the coming financial year **2024-25**.

International Tropical Timber Organisation (ITTO):

- It is an **intergovernmental organization** promoting the sustainable management and conservation of tropical forests and the expansion and diversification of international trade in tropical timber from sustainably managed and legally harvested forests.

ITTO:

- Develops **internationally agreed policy guidelines and norms** to encourage **sustainable forest management (SFM)** and **sustainable tropical timber industries and trade**.
- Assists **tropical member countries** to adapt such guidelines and norms to local circumstances and to implement them in the field through projects and other activities.
- **Collects, analyzes and disseminates data** on the **production and trade of tropical timber**. Promotes **sustainable tropical timber supply chains**. Helps develop capacity in **tropical forestry**.

Collaborative Partnership on Forests (CPF):

- Established in **April 2001** by the **Economic and Social Council of the United Nations (ECOSOC)** that also established the **International Arrangement on Forests** and the **United Nations Forum on Forests (UNFF)**.
- **ECOSOC** defines the **core functions** of the **CPF** as a component of the **International Arrangement on Forests**.
- **CPF** is an **informal, voluntary arrangement** among **16 international organizations** and **secretariats** with **substantial programmes on forests**. These agencies share their experiences and build on them to produce new benefits for their respective constituencies. Members collaborate to **streamline and align their work** and to find ways of improving **forest management and conservation** and the **production and trade of forest products**. The members are also forming close and valuable strategic partnerships with one another, benefiting from shared expertise and pooled resources.

Topic 75. INDIA, US AND OTHER IPEF MEMBER INK SUPPLY CHAIN RESILIENCE PACT

Important for the subject: International Relations

India, US, 12 other IPEF members sign supply chain resilience agreement

India, the US, and 12 other Indo-Pacific Economic Framework (IPEF) members have signed a supply chain resilience agreement to reduce dependence on China and shift manufacturing of crucial goods within member nations.

The 14 countries, constituting 40% of global GDP and a third of global trade, aim to fortify global supply chains, enhance adaptability, stability, and sustainability.

- The IPEF focuses on four pillars: trade, supply chains, clean economy, and fair economy. India has joined all pillars except the trade pillar. The agreement is expected to make IPEF supply chains more resilient and well-integrated, contributing to regional economic development.
- The pact will also seek to improve crisis coordination and response to supply chain disruptions and work together to support the timely delivery of affected goods during a crisis
- Three new IPEF Supply Chain bodies could be set up to facilitate cooperation among the partners. The bodies will be – the supply chain council; the supply chain crisis response network, and the IPEF Labor Rights Advisory Board.
- The other benefits of the pact include supply chain diversification, mobilisation of investments, deeper integration of India in global value chains, support to MSMEs and creation of a seamless regional trade ecosystem, which would facilitate the flow of Indian products.

Some facts about Indo-Pacific Economic Framework for Prosperity (IPEF)

- It is a regional initiative aimed at fostering cooperation and economic integration in the Indo-Pacific region, launched by United States President Joe Biden on May 23, 2022.
- The framework seeks to promote resilience, sustainability, inclusiveness, economic growth, fairness, and competitiveness among member economies,
- IPEF seeks to complement and build on existing regional architecture while supporting the global rules-based trading system.
- The framework includes 14 partner countries: Australia, Brunei Darussalam, Fiji, India, Indonesia, Japan, the Republic of Korea, Malaysia, New Zealand, Philippines, Singapore, Thailand, the United States, and Vietnam. The economic framework is built upon four pillars:

Trade

Supply chain resilience

- **Clean Energy, Decarbonization, and Infrastructure Taxes and anti-corruption measures**
- **While not constituting a Free Trade Agreement (FTA), the IPEF allows members to negotiate specific aspects of interest. India has actively engaged in the IPEF but has chosen not to participate in the trade pillar, citing misalignment with its trade policies on most promoted issues.**

Topic 76. UNSC ADOPTED RESOLUTION TO CALL FOR PAUSE IN GAZA

Important for the subject: International Relations

UN Security Council **adopts resolution** calling for **urgent humanitarian pauses**

The UN Security Council has adopted its **first resolution** since the **outbreak of the Israel-Hamas war**, calling for **“urgent and extended humanitarian pauses”** in Gaza.

The resolution was **rejected by Israel**, and the **vote was 12-0**, with the **United States, United Kingdom, and Russia abstaining**.

- **The US and UK abstained due to the resolution’s failure to condemn Hamas’ cross-border attacks, while Russia abstained because it didn’t demand a humanitarian cease-fire, contrary to Israel and the US’s stance.**
- **The resolution, sponsored by Malta, emphasizes humanitarian pauses and the release of hostages, overcoming previous differences.**
- **However, it doesn’t mention specific events such as the October 7 attacks in Israel or Israel’s response in Gaza.**
- **The resolution is the first on the Palestinian territories since 2016, and Israel criticized it as disconnected from reality.**
- **The resolution calls for humanitarian pauses, corridors in Gaza, and compliance with international law to protect civilians, especially children.**
- **UN Secretary-General Antonio Guterres is to report on its implementation on November 28.**
- **Israel rejected the resolution, stating it is meaningless, and UN Security Council resolutions are legally binding but may be ignored by parties.**
- **The General Assembly passed a similar resolution on October 27, with Israel agreeing to four-hour pauses on November 9, but limited aid delivery has occurred, leading to a humanitarian crisis.**
- **The Security Council’s resolution aims to provide respite but might not have a significant impact, with the US likely urging Israel for more flexibility on aid issues.**

What is UNSC Resolutions:

- **A United Nations Security Council resolution is a United Nations resolution adopted by the fifteen members of the Security Council**
- **The UN Charter specifies in Article 27 that a draft resolution on non-procedural**

matters is adopted if nine or more of the fifteen Council members vote for the resolution, and if it is not vetoed by any of the five permanent members.

- The term “resolution” does not appear in the text of the United Nations Charter.

Resolutions by the Security Council are legally binding.

- In instances where the council fails to achieve consensus or secure a majority vote for a resolution, an alternative option is the issuance of a non-binding presidential statement. Such statements are adopted through consensus, serving as a means to exert political pressure. They act as a cautionary signal that the Council is closely monitoring the situation, with the implication that additional actions might be taken in the future.

Some more facts about UNSC:

- The Security Council was established by the UN Charter in 1945. It is one of the six principal organs of the United Nations.
- The other 5 organs of the United Nations are—the General Assembly (UNGA), the Trusteeship Council, the Economic and Social Council, the International Court of Justice, and the Secretariat.
- Its primary responsibility is to work to maintain international peace and security. The council is headquartered in New York.
- UNSC has 15 members of which 5 are permanent and 10 are non-permanent members. Non-permanent members elected for two-year terms by the UN General Assembly.
- Five permanent members are- US, UK, France, Russia, and China. It is the only UN body with the authority to issue binding resolutions to member states.

Topic 77. LANCET COUNTDOWN REPORT CALLS FOR CLIMATE-DRIVEN HEALTH ACTION

Important for the subject: International Relations

The 8th annual report of the Lancet Countdown on Health and Climate Change has shed light on the alarming convergence of factors that jeopardize the well-being of individuals, public health, and healthcare systems on a global scale.

Climate crisis can be seen in the form of exacerbation of food insecurity, the proliferation of climate-sensitive diseases, and the increasing frequency and intensity of extreme weather events.

Lancet Countdown report:

- It reveals that the health impacts of climate change are surging worldwide, causing a devastating toll on lives and livelihoods.
- Adults over 65 years of age and infants under one year old, who are particularly

vulnerable to **extreme heat**, are now experiencing **twice as many heatwave days per year** than they would have in **1986-2005**.

- The increasing destructiveness of **extreme weather events** jeopardizes **water security and food production**, putting millions of people at risk of **malnutrition**.
- **127 million more people are experiencing moderate to severe food insecurity in 122 countries in 2021**, compared to the annual numbers seen between **1981 and 2010**.
- The **warmer seas** have **increased the area of the world's coastline** suitable for the spread of **Vibrio bacteria** that can cause **illness and death** in humans by **329km every year since 1982**, putting a record **1.4 billion** people at risk of diarrhoeal disease, severe wound infections, and sepsis.
- In **Europe**, where *Vibrio*-suitable coastal waters have increased by 142km every year. These rising risks of climate change are also worsening **global health inequities**.

About the Lancet Countdown:

- The Lancet Countdown works to ensure that health is at the centre of how governments understand and respond to climate change.
- Their work ranges from ensuring policymakers have access to high-quality evidence-based guidance, through to providing the health profession with the tools they need to improve public health.
- The **2015 Lancet Commission's** conclusion – that **'tackling climate change could be the greatest global health opportunity of the 21st century'** highlighted the need for a **global monitoring system** with the ability to engage policymakers and support health professionals.
- In **2016** the **Lancet Countdown: Tracking Progress on Health and Climate Change** was formed to address this gap, beginning with a public consultation to identify key areas of health and climate change to track and monitor.
- The collaboration recognises that the **voice of the health profession** is essential in driving forward progress on climate change and realising the health benefits of a robust response.
- **Publishing annually in The Lancet**, with strategic and financial support from the **Wellcome Trust**. It is hosted by **University College London**.

Topic 78. THE NEW FLARE-UP IN MYANMAR

Important for the subject: International Relations



The Ministry of External Affairs expressed “deep concern” over the ongoing fighting in the Rikhawdar area in Myanmar’s Chin State. Myanmar has been in flames ever since the military seized power on February 1, 2021

The Ethnic Armed Organizations (EAOs) and People’s Defence Forces (PDFs), armed civilian groups, have joined hands against the military, aligning with the self-declared National Unity Government in exile.

- In intense clashes, they successfully took control of two towns near the India-Myanmar border, i.e Rikhawdar, close to Zokhawthar in Mizoram, and Khampat in Sagaing region, around 60 km from Moreh in Manipur causing a refugee influx into Mizoram.
- The recent conflict, known as Operation 1027, initiated by the Three Brotherhood Alliance on October 27 in Shan State, resulted in the capture of over 100 military outposts and crucial border towns.

The alliance is a front of three EAOs:

- the Myanmar National Democratic Alliance Army (MNDAA), the Ta’ang National Liberation Army, and the Arakan Army.
- Chinshwehaw, a vital point on the China-Myanmar border trade route and a key revenue source for the junta, was among the seized locations.
- Simultaneously, local resistance forces ignited fighting in various parts of the country. Khampat in Sagaing region is also part of the proposed India-Myanmar-Thailand trilateral highway project.

Topic 79. BORDER PEACE AND TRANQUILITY AGREEMENT

Important for the subject: International Relations

The **30th anniversary of the Border Peace and Tranquility Agreement (BPTA)** between **India and China** recently passed without acknowledgement, highlighting its contested legacy today.

It was **signed in 1993**, the **BPTA aimed to maintain peace and tranquility along the Line of Actual Control (LAC)** and **reduce the risk of unplanned confrontations**. However, the limited agreement **inadvertently fueled an infrastructure race and increased incidents**, leading to the deadly clash at Galwan in 2020.

The ambiguity surrounding the LAC, the **inherent issue in the BPTA**, contributed to the **breakdown of subsequent agreements**. The India-China border **remains unsettled**, with the current crisis entering its fourth winter.

What is Line of Actual Control (LAC):

- The LAC is the **demarcation that separates Indian-controlled territory from Chinese-controlled territory**.
- It is **divided into three sectors i.e the eastern sector which spans Arunachal Pradesh and Sikkim, the middle sector in Uttarakhand and Himachal Pradesh, and the western sector in Ladakh**.
- India considers the LAC to be **3,488 km long**, while the **Chinese consider it to be only around 2,000 km**.
- India's **claim line is the line seen in the official boundary marked on the maps as released by the Survey of India, including both Aksai Chin and Gilgit-Baltistan**. This means LAC is not the claim line for India.
- In China's case, LAC is the **claim line except in the eastern sector, where it claims the entire Arunachal Pradesh as South Tibet**.

What is the difference between LAC vs Line of Control (LoC) with Pakistan:

- The **Line of Control (LoC)** originated from the **1948 ceasefire line brokered by the UN after the Kashmir War**.
- Its **formal designation as the LoC occurred in 1972**, a result of the **Shimla Agreement** between India and Pakistan.
- This delineation is **officially documented on a map signed by the Directors General of Military Operations (DGMOs) from both nations**, providing it with the international legitimacy of a legal agreement.
- In contrast, the **Line of Actual Control (LAC) is merely a conceptual demarcation**. It **lacks mutual agreement between the two countries**, with no official mapping or ground demarcation in place.

Topic 80. NAVY READY FOR EVACUATIONS IF GAZA SITUATION WARRANTS IT

Important for the subject: International Relations



The Navy chief said that Navy is ready for evacuations if Gaza situation warrants it.

The **Chief of the Naval Staff, Admiral Hari Kumar**, stated that the **Indian Navy is prepared to deploy its assets** for evacuation if needed due to the **Gaza conflict**.

The Navy has **units stationed in the Gulf of Oman, the Gulf of Aden, and the Red Sea** to provide assistance.

- Admiral Kumar emphasized the Navy's role in protecting national maritime interests and revealed plans for a future fleet expansion, aiming for a 165-170-ship force with increased aircraft by 2035.
- He discussed the integration of unmanned systems, focusing on "manned-unmanned teaming."
- General Anil Chauhan, Chief of Defence Staff, highlighted the importance of managing differences and resolving disputes to prevent conflicts with unclear end states or exit strategies.

Gulf of Aden:

- The Gulf of Aden is an extension of the Indian Ocean, tucked between the Arabian Peninsula and the African continent. The gulf connects the Red Sea to the Arabian Sea via the Strait of Bab el Mandeb. The gulf – roughly 900 kilometres long and 500 kilometres wide – is an important waterway for transporting Persian Gulf oil.
- Together with the Red Sea, which it connects with in the northwest through the **Bab el Mandeb** it forms an essential oil transport route between Europe and the Far East.

Gulf of Oman:

- The Gulf of Oman also known as the Gulf of Makran or Sea of Makran, forms the only entrance to the Persian Gulf from the Indian Ocean. It connects the Arabian Sea with the Strait of Hormuz, which then empties into the Persian Gulf.
- **Bordering Countries:** Pakistan and Iran in the north, United Arab Emirates in the west and Oman in the south. Some of the significant islands that are located in the Gulf of Oman include Sheytan Island, Al Fahal Island, Dimaniyat Islands, and the Sawadi Islands.
- The major international shipping ports that are situated in the Gulf of Oman include Port Sultan Qaboos Muscat in Muscat, Oman; Chabahar Port in Iran; the Port of Fujairah and Khor Fakkan Container Terminal in the United Arab Emirates.
- Roughly one-third of the world's oil is exported via the Strait of Hormuz and the Gulf of Oman.



Red Sea:

- The Red Sea (Erythraean Sea) is a seawater inlet of the Indian Ocean, lying between Africa and Asia.
- The connection to the ocean is in the south through **the Bab el Mandeb strait** and **the Gulf of Aden**. To the north lie the Sinai Peninsula, the Gulf of Aqaba, and the Gulf of Suez (leading to the Suez Canal).
- The sea is underlain by the Red Sea Rift which is part of the Great Rift Valley. The six countries bordering the Red Sea are: **Saudi Arabia, Yemen, Egypt, Sudan, Eritrea, Djibouti**.



Topic 81. WHAT IS THE BDS MOVEMENT

Important for the subject: International Relations

An article published in a German newspaper last week accused Indian poet and curator Ranjit Hoskote of “anti-Semitism” and sympathizing with the BDS movement

Some facts about BDS Movement:

- The **Boycott, Divestment, and Sanctions (BDS)** movement, **initiated in 2005** by over **170 Palestinian groups**, seeks international support for Palestinian rights.

- It is an **anti-racist, human rights movement** inspired by the **South African anti-apartheid movement**.
- **BDS advocates nonviolent pressure on Israel until it aligns with international law**, emphasizing three demands:
- **Ending the occupation and colonization of Arab lands, Recognizing the rights of Arab-Palestinian citizens in Israel, Respecting the rights of Palestinian refugees to return to their homes** as outlined in **UN Resolution 194**.
- The resolution, **adopted in 1948, addresses the displacement of Palestinian refugees during the Israeli-Arab war**, emphasizing the **right to return and receive compensation**.

How does BDS aim to achieve these goals:

- The **Boycott, Divestment, and Sanctions (BDS) movement** calls for **boycotting Israel's government, associated institutions, and companies** involved in human rights violations.
- It **targets sponsors like Puma for their association with the Israel Football Association**, including teams in illegal settlements.
- **Divestment campaigns urge entities to withdraw investments**, while **sanctions campaigns seek government action against Israeli apartheid**.
- The **movement strategically focuses on selected companies** for maximum impact, cautioning against lengthy lists that may be less effective.

What has the Israeli govt said about BDS:

- Israel's Prime Minister, **Benjamin Netanyahu**, has linked the **Boycott, Divestment, and Sanctions (BDS) movement to anti-Semitism**, accusing its **founders of seeking the end of the Jewish state**.
- **BDS counters that criticizing Israel's violations of international law should not be equated with anti-Semitism**, emphasizing the **right to critique a state's unjust actions**.
- Despite Israeli officials downplaying its threat, the government's consistent references to BDS have sparked criticism within Israel, with some arguing that **officials are inadvertently drawing more attention to the movement**.
- U.S. officials, including former Secretary of State **Mike Pompeo**, have also criticized BDS.

What is the economic impact of BDS:

- In recent years, a **few brands and celebrities, including Ben and Jerry's and Pink Floyd member Roger Waters**, have **refused to work or perform in Israel**, aligning with the **Boycott, Divestment, and Sanctions (BDS) movement**.
- However, the **impact of these scattered efforts on Israel's economy** is challenging to measure, especially considering the longstanding policy of Arab states to boycott Israel.
- **BDS acknowledges the entrenched support for Israel but asserts its potential as a powerful tool in ending Western support** for Israeli apartheid and settler colonialism.

Topic 82. FINLAND CLOSES FOUR CROSSING POINTS ON RUSSIA BORDER

Important for the subject: International Relations



Finland closes four crossing points on Russia border

Finland has **closed four border crossings with Russia** in response to an **increase in asylum seekers**, blaming Moscow for **directing migrants to these points** in retaliation for **Finland joining NATO**.

- About **300 asylum seekers** have arrived in Finland this week, **with authorities accusing Russia of deliberately aiding people without proper documents** to reach the border.
- **Prime Minister Petteri Orpo** accused **Russia of engineering the crossings, claiming that people arrive legally in Russia** before crossing into Finland to claim asylum.

Topic 83. CHINA KEEN ON EXTENDING CHINA-MYANMAR ECONOMIC CORRIDOR TO SRI LANKA

Important for the subject: International Relations

China keen on extending China-Myanmar Economic Corridor to Sri Lanka China is **reportedly prioritizing the extension of the China-Myanmar Economic Corridor (CMEC) to Sri Lanka**, as revealed by the Chinese President's Special Envoy during a **meeting with Sri Lankan President Ranil Wickremesinghe**.

The Corridor is **part of China's Belt and Road Initiative (BRI)**, and **both nations aim to accelerate the implementation of the China-Sri Lanka Free Trade Agreement**.

- Sri Lanka, actively participating in the BRI, sees the extension as part of the second phase, expecting a more substantial economic impact. China has been supportive of Sri Lanka's debt restructuring program amid ongoing discussions with official creditors for economic recovery.
- The CMEC is the newest of the six land corridors under the BRI, and has assumed prominence in place of the Bangladesh China India Myanmar (BCIM) corridor which has largely stalled.

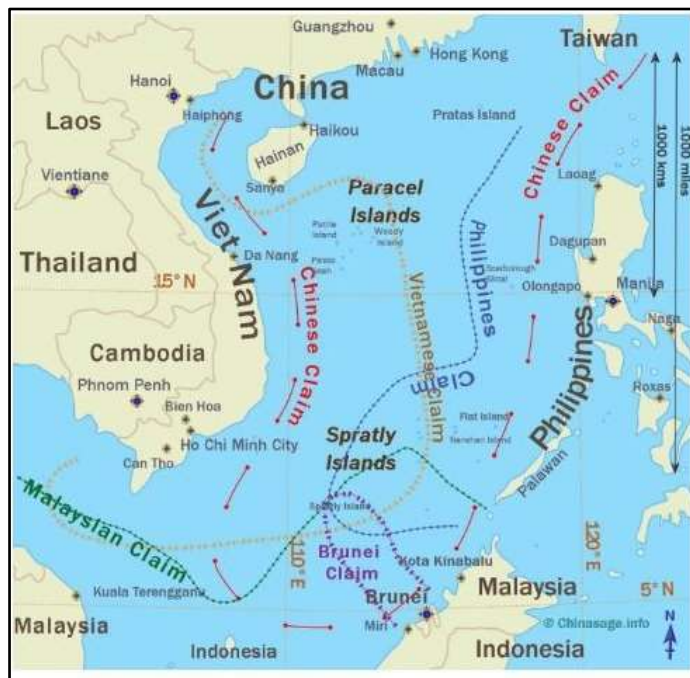
Some more facts about China-Myanmar Economic Corridor:

- China-Myanmar Economic Corridor (CMEC) is a number of infrastructure projects supporting connectivity between Myanmar and China.
- It is an economic corridor of the Belt and Road Initiative building road and rail transportation from Yunnan Province in China through Muse and Mandalay to Kyaukpyu in Rakhine State.



Topic 84. PHILIPPINES INVITES NEIGHBOR TO FRAME SOUTH CHINA SEA CONDUCT RULE

Important for the subject: International Relations



Philippines invites neighbor to frame south China sea conduct rule.

The **Philippines** has initiated discussions with neighboring countries such as **Malaysia** and **Vietnam** to create a **separate code of conduct for the South China Sea**.

President Marcos expressed **dissatisfaction with the slow progress** in reaching a broader **regional pact with China** and highlighted the need to collaborate with allies and neighbors to **address escalating tensions in the South China Sea**.

- The move aims to establish a code of conduct outside the ASEAN-China framework and involves countries with existing territorial conflicts, including Vietnam and Malaysia.
- China emphasized the importance of formulating a code of conduct but cautioned against any deviation from the existing framework.

More about the South China Sea.

- The South China Sea is a **marginal sea of the Western Pacific Ocean**. The South China Sea is connected by Taiwan Strait with the East China Sea and by Luzon Strait with the Philippine Sea.
- **Bordering states & territories** (clockwise from north): the People's Republic of China, the Republic of China (Taiwan), the Philippines, Malaysia, Brunei,

Indonesia, Singapore and Vietnam.

- The **Gulf of Thailand and the Gulf of Tonkin** are also **part of the South China Sea.**

Contesting Claims Over Islands:

- The **Paracel Islands** are claimed by **China, Taiwan and Vietnam.** The **Spratly Islands** are claimed by **China, Taiwan, Malaysia, Vietnam, Brunei and Philippines.** The **Scarborough Shoal** is claimed by the **Philippines, China and Taiwan.**

Topic 85. CEA NAGESWARAN CALLS ON WORLD BANK TO MAKE GOVERNANCE INDICATORS TRANSPARENT

Important for the subject: International Relations

CEA Nageswaran calls on World Bank to make governance indicators transparent

Chief Economic Adviser V Anantha Nageswaran has urged the **World Bank** to enhance the transparency of its **Worldwide Governance Indicators**, stating that their **Important for the subjective nature is leading to inappropriate assessments of developing countries' sovereign ratings** by global rating agencies.

Speaking at a seminar in the Capital, Nageswaran **emphasized that making governance indicators “less arbitrary” is the “easiest way” for Multilateral Development Banks (MDBs) to aid member countries** in accessing capital for global challenges and development needs.

- He highlighted the **significant role these indicators play in the opaque credit rating assessment process** used by major agencies, including **S&P Global, Moody's Investors Service, and Fitch Ratings.**
- The **World Bank** compiles the **Worldwide Governance Indicators** from various credible sources, but concerns have been raised about the **methodological problems of these indicators**, including those from the **Freedom in the World Index** and the **Economist Intelligence Unit Democracy Index.**

What is Worldwide Governance Indicators:

- The **World Governance Indicators (WGI)** constitute a **research dataset that consolidates** the perspectives of a significant number of respondents, **including corporate, citizen, and expert survey participants from both developed and developing nations, regarding the quality of governance.**
- The WGI was **developed in 1999** by two World Bank researchers, **Daniel Kaufmann and Aart Kraay.** The data are updated annually each **September**
- The WGI covers **six key dimensions** of governance:
 - **Voice and Accountability**
 - **Political Stability and Absence of Violence**
 - **Government Effectiveness**

- Regulatory Quality
- Rule of Law
- Control of Corruption
- Various reports on which India's WGI ranking based on-
- Economist Intelligence Unit
- Varieties of Democracy Project
- Heritage Foundation Index of Economic Freedom
- Freedom House Report

Topic 86. THE PROTECTION OF HOSPITALS DURING ARMED CONFLICTS

Important for the subject: International Relations

What the law says:

According to **International humanitarian law (IHL)**, health establishments and units, including hospitals, **should not be attacked**.

This protection **extends** to the **wounded and sick as well as to medical staff** and means of transport. The rule has few exceptions.

What kind of specific protection do the wounded and sick enjoy in times of armed conflict:

- In times of armed conflict, **international humanitarian law (IHL)** mandates **protection and care for the wounded and sick**, regardless of their affiliation.
- **Rights include respect, protection from attacks, and medical assistance without discrimination.**
- IHL requires **searching for, collecting, and providing care to the wounded**, with efforts made, even under limited resources.
- **State and non-State parties must ensure the best possible care and permit impartial humanitarian organizations** to assist.
- **Specific protections extend to medical personnel, units, and establishments, safeguarding them** from attacks and **undue interference during medical functions** in conflict zones.

In which circumstances can medical establishments and units lose their protection granted by IHL:

- Under **international humanitarian law (IHL)**, **medical establishments and units, including hospitals**, are generally entitled to specific protection. This protection continues unless they are used to commit acts harmful to the enemy outside their humanitarian functions.
- In case of doubt, the **presumption is that medical units or establishments are not used for harmful purposes**. While IHL does not define “act harmful to the enemy,”

certain acts are explicitly recognized as not falling under this category.

- The loss of protection occurs when medical facilities interfere directly or indirectly in military operations, causing harm to the enemy, such as being used for launching attacks, as observation posts, weapons depots, centers for military liaison, or shelters for combatants.

What can be considered as an “act harmful to the enemy”:

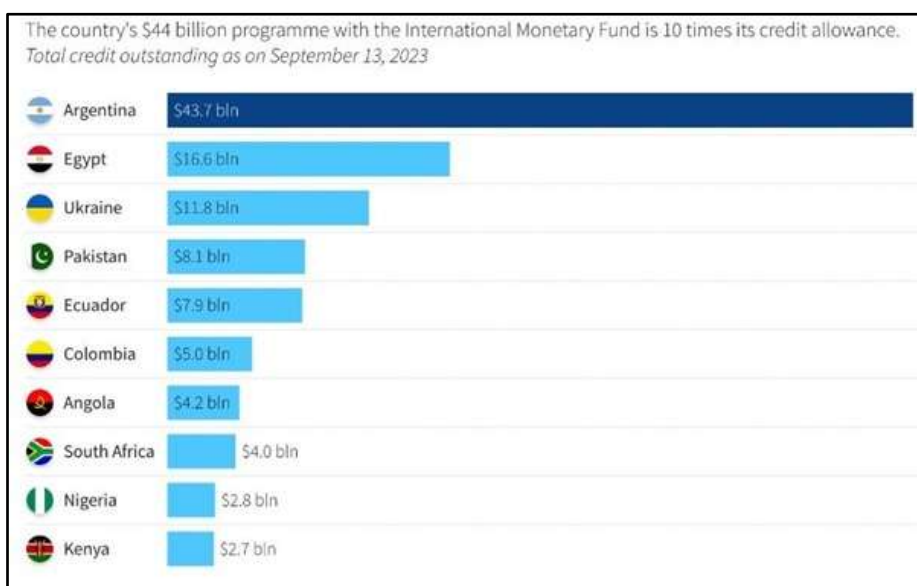
- Engaging in acts harmful to the enemy may expose a medical establishment or unit to potential attack, endanger the wounded and sick in its care, and undermine trust in the work of medical facilities, diminishing the protective value of international humanitarian law (IHL).
- Depending on circumstances, such acts could violate precautionary obligations to protect the wounded and sick, health-care personnel, and objects against attacks.
- For instance, placing a medical facility near a military objective to shield it from enemy operations may violate these obligations.
- Additionally, such conduct may lead to other IHL violations or war crimes, especially if it involves improper use of distinctive emblems like the Red Cross, Red Crescent, or Red Crystal, or if done as an act of perfidy to harm enemy combatants.

Does the law set for additional legal requirements to attack a medical unit or establishment used to commit an act harmful to the enemy:

- Before attacking a medical establishment or unit that has lost its protected status, a warning should be issued, including a time limit if appropriate, to allow cessation of harmful acts or the safe evacuation of non-responsible wounded and sick individuals.
- If the warning goes unheeded, the enemy is no longer obliged to refrain from interference, but humanitarian considerations for the safety of patients must be maintained.
- The attacking party is bound by principles of proportionality and must weigh the military advantage against humanitarian consequences.
- Precautions in attack, including minimizing harm to patients and medical personnel, should be taken, and measures to address disruption and re-establish health-care services must be prepared.
- Interrupting the attack if the facility no longer meets criteria for loss of protected status and facilitating
- After the attack, measures for the rapid restoration of health-care services (e.g. provide military medical support for the civilian medical facility) are done.

Topic 87. RECORD INFLATION IN ARGENTINA

Important for the subject: International Relations



Inflation in Argentina has **jumped to its highest level** in three decades, Compared to a year ago, **inflation has accelerated to 138.3%**. That's the **highest level since the early 1990s** when Argentina was exiting hyperinflation.

- **Argentina and the International Monetary Fund (IMF)** face **challenges** as the **country heads** towards a recession, with inflation exceeding 100%.
- The **Peronist-led government** has struggled to meet **economic targets outlined in a 2022 IMF loan**, leading to concerns about the **effectiveness of the bailout**.
- Despite pressure to address Argentina's economic issues, the **IMF continues reviews and disbursements to avoid a default**.
- Analysts **suggest that the IMF may need to take a tougher stance** after the upcoming elections in October. Argentina is the **largest debtor** of the IMF.
- Argentina is bordered by the Andes in the west and the South Atlantic Ocean to the east, its neighbouring countries are Chile to the west, Bolivia and Paraguay to the north, and Brazil and Uruguay to the northeast.

Topic 88. ATOMS 4FOOD

Important for the subject: International Relations

What is Atoms 4 Food:

Atoms4Food is a **project that aims to solve global hunger** and improve food security through the **use of nuclear processes** and advanced technologies.

Developed by the **International Atomic Energy Agency (IAEA)** and the **Food and Agriculture Organization of the United Nations (FAO)**, the initiative **tailors solutions to**

specific country needs.

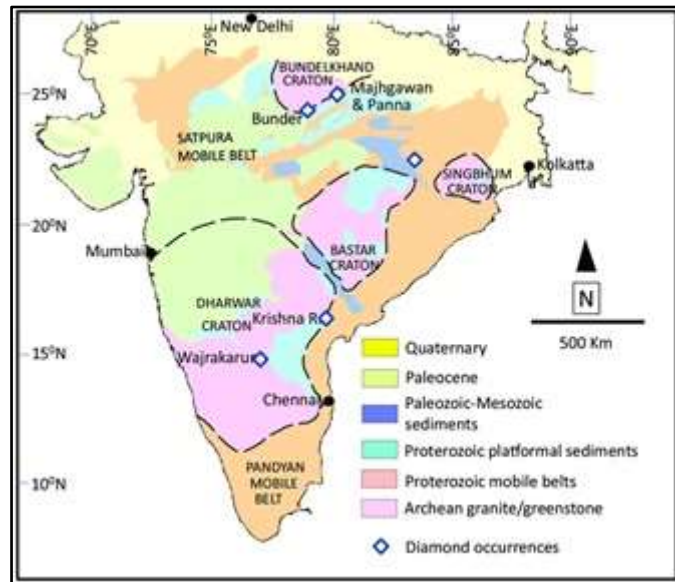
- **The Atoms4Food initiative at the 2023 World Food Forum in Rome.** It utilizes **nuclear and isotope technology** to **improve agricultural and livestock productivity**, manage natural resources, reduce food losses, ensure food safety, enhance nutrition, and address climate change challenges.
- **The Joint FAO/IAEA Centre of Nuclear Techniques in Food and Agriculture** supports the **safe and effective use of nuclear technologies** for global food security and sustainable agricultural development.
- **The Atoms4Food Initiative** is collaborated with **traditional and non-traditional partners, including other UN Agencies, Consultative Group on International Agricultural Research (CGIAR), international financial institutions, development agencies, foundations, industry, national academia and research institutions,**

What are different Atoms4Food services:

- **Assessment Mission:** Conducting a **comprehensive assessment** to identify food security needs and develop a customized plan to address challenges.
- **Crop Variety Improvement Service:** Creating **crop improvement programs** through **nuclear plant mutation breeding** to enhance the resilience and nutritional value of crops.
- **Soil and Water Management and Crop Nutrition Service:** Utilizing **nuclear and isotopic science** for precise data on soil fertility, crop yield, fertilizer availability, and water irrigation systems.
- **Animal Production and Health Service:** Assessing the **epidemiological status of animal diseases**, implementing preventive measures, and enhancing veterinary capacities.
- **Insect Pest Control Service:** Employing **nuclear-based sterile insect** techniques to control insect pests affecting agricultural production.
- **Food Safety and Control Service:** Evaluating **laboratory capabilities** and conducting food hazard surveillance to ensure food safety.
- **Public Health Nutrition Service:** Providing **evidence-based insights on nutritional value** and diet quality using stable isotope techniques to inform impactful nutrition programs.

Topic 89. IN PARCHED BUNDELKHAND, CHASING ELUSIVE DIAMONDS AND SUSTENANCE

Important for the subject: Geography



Manki village, Madhya Pradesh:

- It is a tribal village in **Madhya Pradesh's Chhatarpur district**, a part of the draught prone **Bundelkhand region**.
- It is situated at a distance of barely two kilometres from **Nainagiri**, a **Jain pilgrimage site**. It is mainly home to the **Sour tribe**.
- The tribal region of **Bundelkhand in M.P.** is comprising of **Sagar, Tikamgarh, Chhatarpur, Panna, Damoh, and Datia districts**.

Dimond mining in Sagouriyavillage of M.P:

- **Sagouriya** is a village 40 km away from **Manki** in **Buxwaha** tehsil. **Sagouriya** is deep inside a dense forest.
- It's one of the 15 villages 'adopted' by the international mining giant **Rio Tinto**, which was granted a prospecting license in **2004**.
- Claiming there were **34 million carat diamonds** worth approximately **₹25,000 crore**, the company operated till **2016**, it 'adopted' villages, including **Sagouriya**, enabling readily available water, modern agricultural techniques, skill training for women and youth, and health and educational facilities.
- The State government in **2019** allotted the **Bunder diamond mines project** to **Essel Mining**, which is still waiting the environmental clearances.

Diamonds and water:

- **Bundelkhand's other diamond** mining region is **Panna** district.
- The **Ken river**, a tributary of the **Yamuna**, flows through the **Panna Tiger Reserve**. The Centre announced linking it with another of the **Yamuna's** tributaries, the **Betwa river**.
- As per the government, if **Ken-Betwa linking project** came about, it would solve **Bundelkhand's water crisis** as it will provide **annual irrigation** to **10.62 lakh hectares**, **drinking water supply** to a population of about **62 lakh**, and also generate **103 MW of hydropower** and **27 MW solar power**.
- Besides Bundelkhand, it would also benefit parts of **Madhya Pradesh** and **Uttar Pradesh**.

List of diamond mines in India:

Mine	State
Bunder Project	Madhya Pradesh
Golkonda	Andhra Pradesh
Kollur Mine	Andhra Pradesh
Panna	Madhya Pradesh

Topic 90. UNCERTAIN FUTURE IN SEA OF POPPIES

Important for the subject: Geography

New challenges arised from the **intersection of cultural pride and economic shifts in opium cultivation in India** and various concerns surrounding the government's policy shift, addressing potential impacts on livelihoods, national security and transparency.

Some Facts

- **Opium Farmers in India:** About 1 lakh farmers across 22 districts in Madhya Pradesh, Rajasthan, and Uttar Pradesh have licenses to cultivate opium.
- **Major Opium-Producing Districts:** Mandsaur, Neemuch, and Chittorgarh contribute to 80% of India's opium production.
- **Change in Government Policy (2021):** Government policy shift in 2021 allows private players to produce CPS, aiming to boost alkaloid yield.

- **Economic Impact on Farmers:** Opium farmers face economic challenges, citing stagnant procurement rates, increased input costs, and reduced poppy seed yield under the new system.

Key Highlights

- **Cultural Significance of Opium Cultivation:** Opium farming is a source of cultural pride, termed “agriculture of dignity” in the Mewar region, linking social status to this traditional trade and reflecting generations’ engagement.
- **Government Policy Shift in 2021:** In 2021, the government allowed private players to produce Concentrate of Poppy Straw (CPS) alongside traditional opium gum, aiming to boost alkaloid yield and align India with global practices. However, this shift faces resistance from opium farmers.
- **Concerns about Private Players:** Opium farmers express worries about the entry of private companies, fearing threats to livelihood, profits, and national security. Farmers argue that private involvement may lead to misuse of opium, increased drug trafficking, and rising costs of life-saving medicines.
- **Impact on Farmers and Traditional Practices:** Opium farmers face economic challenges, citing stagnant procurement rates, increased input costs, and reduced poppy seed yield under the new system. The shift to CPS raises concerns about transparency, farmer consultation, and the potential decline in income for traditional opium cultivators.

Challenges

- **Threat to Livelihood and National Security:** Opium farmers fear that private entry may endanger their profession and lead to increased drug-related issues. There is a possibility of drug mafia influence and security threats if alkaloids fall into the wrong hands.
- **Impact of Policy Shift on Farmers:** Economic challenges for opium farmers, including reduced poppy seed yield and concerns about transparent practices under CPS. Farmers worry about income loss and express dissatisfaction with the lack of government consultation.
- **Safety and Security of Alkaloids:** Opium farmers question the safety and security of alkaloids under private production. Fears that private involvement may compromise the integrity of life-saving medicines made from opium.
- **Division among Farmers and Lack of Transparency:** Farmers express concerns about the government creating divisions with two production systems. Calls for transparent policies and farmer involvement, alleging a lack of transparency in the CPS mechanism.

Some prominent Phrases regarding opium

- **Swabhiman ki Kheti (Agriculture of Dignity):** Opium cultivation holds cultural pride in the Mewar region, reflecting social status.
- **Afeem and Aulat Barabar (Poppy Plants and Children Deserve Similar**

Treatment): Highlights the cultural significance of opium, equating it with the care given to children. **Concentrate of Poppy Straw (CPS):** New method introduced in 2021, allowing private players to extract alkaloids from poppy straw alongside traditional opium gum.

- **Make in India:** Farmers question the government's commitment to "Make in India" while allowing imports of poppy seeds.

Topic 91. WHY WATER RESERVES IN SOUTHERN INDIA ARE FAST DEPLETING IN 2023

Important for the subject: Geography

According to a recent report from the **Central Water Commission (CWC)**, water levels in **India's Southern states' reservoirs** are **low** compared to last year and compared to other regions of the country in **2023**.

During **normal monsoon years** over the country, the available water reserves in southern India touch **91 per cent** of the total storage capacity.

State	Reservoir stocks (% of total storage capacity)
Andhra Pradesh	-51
Karnataka	-38
Kerala	-16
Telangana	+33

Reservoirs of South India are:

- **Andhra Pradesh-** Srisailem, Nagarjuna Sagar, Somasila, Yeleru, Kandaluru, Donkarayi.
- **Karnataka-** Krishnaraja Sagar, Tungabhadra, Bhadra, Linganamakki, Narayanpur, Malaprabha, Hemavathy, Mani dam, Almatti, Tattihalla,
- **Kerala-** Malampuzha, Idukki,
- **Tamil Nadu-** Lower Bhawani, Mettur, Aliyar, Sholaya

Why are the stocks low?

- Vast inter-seasonal rainfall variability, Large-scale rainfall deficits during monsoon,
- October over southern peninsular India remained the sixth driest in 123 years,

- Development of cyclone Hamoon,

Impact:

- Irrigated farming can face water unavailability
- Water deficit in high water-intensive paddy cultivation in Andhra and Tamil Nadu region. Lack of availability of drinking water

Topic 92. SHIPPING MINISTRY LOOKS TO PUSH SEA PLANE OPS IN ANDAMAN, LAKSHADWEEP***Important for the subject : Geography***

India's Shipping Ministry has selected **10 locations**, four across **Andaman** and **six Lakshadweep**, as probable ones to ramp up **infrastructure** and begin **sea-plane operations** in the initial phase.

- The Union **Ministry of Ports, Shipping and Waterways (MoPSW)** will be setting up the infrastructure across these islands.
- The infrastructures include **floating navigation systems**, and **water-aerodromes**, among other requirements. Routes will be managed by private players.
- **Locations of Andaman-** Long Island, Neill Island, Havelock Island and Port Blair.
- **Locations of Lakshadweep-** Minicoy, Kavaratti and Agatti (the other 3 will be decided later). The seaplane routes will be awarded under the **UDAN scheme**.
- **Airports Authority of India (AAI)**, has so far awarded **14 Water Aerodromes** (sea plane routes) under **UDAN**, which include Sardar Sarovar Dam (Statue of Unity), Sabarmati Riverfront in Ahmedabad; **Havelock Island, Neill Island, Long Island and Port Blair in Andaman & Nicobar Islands**; Guwahati riverfront and Umrangso Reservoir in Assam; Nagarjuna Sagar Dam in Telangana; Prakasam Barrage in Andhra Pradesh and **Minicoy, Kavaratti, Agatti in Lakshadweep Islands**.

UDAN Scheme:

- Launched by the **Ministry of Civil Aviation** for regional airport development and regional connectivity enhancement. It is a part of the **National Civil Aviation Policy 2016**. The scheme is applicable for a period of **10 years**.

Objectives:

- Improve the air connectivity to remote and regional areas of India. Development of remote areas and enhancing trade and commerce and tourism expansion. Enable common people to access air travel with affordable rates.
- Employment creation in the aviation sector. Currently, **phase V (UDAN 5.0)** of the scheme is under implementation. It focuses on Category-2 (20-80 seats) and Category-3 (>80 seats) aircrafts. There is no restriction on the distance between the origin and the destination of the flight.

Topic 93. MEASURES ON TO EXPAND CULTIVATION OF GI-TAGGED ONATTUKARA SESAME

Important for the subject: Geography

Kerala Authorities have announced an incentive scheme for growing **sesame** on fields and homesteads in the **Thekkekara Krishi Bhavan limits**.

The project is a **joint initiative** involving the local Krishi Bhavan, Onattukara Vikasana Agency (OVA), Onattukara Regional Agricultural Research Station (ORARS), Krishi Vigyan Kendra, Kayamkulam, and Mavelikara Thekkekara panchayat.

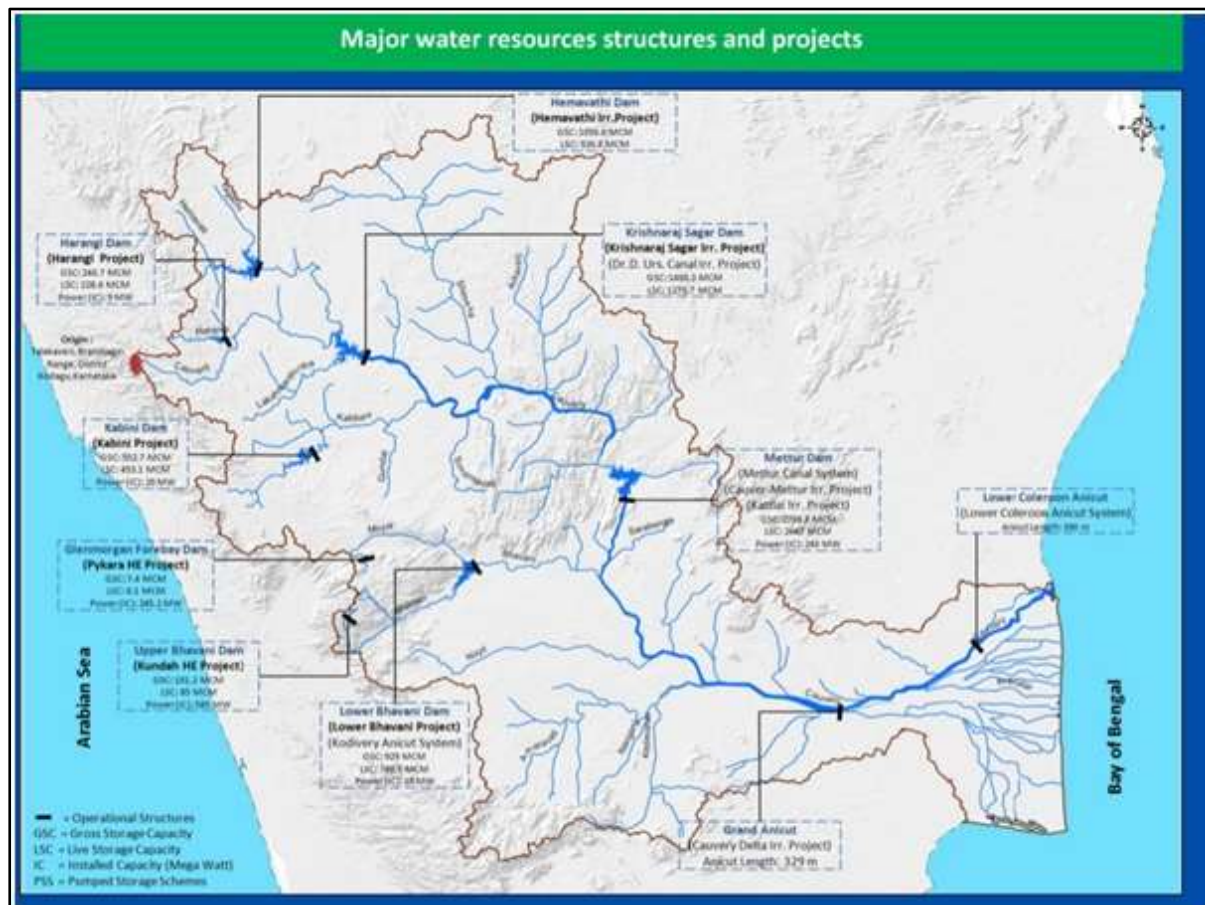
The **financial assistance** of **₹40 for a cent of land** would be given to farmers for cultivating sesame.

About Onattukara sesame:

- **Onattukara sesame** is currently grown on around 600 hectares spread across **43 local bodies** in three districts of **Alappuzha, Kollam** and **Pathanamthitta**.
- The OVA, the registered owner of the **GI-tagged sesame** with **Agriculture Minister P. Prasad** as its **chairman**, plans to increase the area under sesame cultivation in the region to **2,000 hectares**.
- **Onattukara sesame oilseeds** have added medicinal value, and contain high levels of **Vitamin E** and **antioxidants**.
- It also contains oleic acid, linoleic acid, palmitoleic acid and so on which help maintain good health.
- **Other varieties of Onattukara sesame-** Ayali variety, Kayamkulam-1, Thilak, Thilathara and Thilarani, all developed by the **ORARS**.

Topic 94. STORAGE IN CAUVERY BASIN RESERVOIRS HAS DIPPED TO NEARLY HALF THEIR GROSS CAPACITY

Important for the subject: Geography



The water level in the four major reservoirs in the Cauvery basin of the State has dipped to nearly half of their cumulative gross capacity.

Cauvery basin:

- The **Cauvery basin** extends over the states of **Tamil Nadu, Karnataka, Kerala** and the **Union Territory of Puducherry**. It spans nearly **2.7%** of the **total geographical area** of the country.
- It is bounded by the **Western Ghats** on the **west**, by the **Eastern Ghats** on the **east** and **south** and by the **ridges** separating it from the **Krishna Basin** and **Pennar Basin** on the **north**.
- The **three main physiographic divisions** of the basin are the **Western Ghats**, the **plateau of Mysore** and the **Delta**. The Western Ghat region is mountainous and covered with thick vegetation.
- The **major reservoirs** in the **Cauvery basin** are **Krishnaraja Sagar, Mettur (Stanley), Hemavathy, Kabini, Harasngi, Lower Bhavani** and **Grand Anicut**.
- The **Cauvery River** is one of the **major rivers** of the **peninsular India**. It rises at an

elevation of 1,341 m at **Talakaveri** on the **Brahmagiri range** near Cherangala village of **Kodagu district** of **Karnataka** and drains into the **Bay of Bengal**.

- In size, it is **smaller** than the **Godavari**, the **Mahanadi** and the **Krishna**. **Major left bank tributaries:** Harangi, the Hemavati, the Shimsha and the Arkavati.
- **Major Right bank tributaries:** the Lakshmantirtha, the Kabbani, the Suvarnavati, the Bhavani, the Noyil and the Amaravati.



Topic 95. WHAT IS TANTALUM, THE RARE METAL FOUND IN SUTLEJ?

Important for the subject : Geography

A team of researchers from the **Indian Institute of Technology (IIT), Ropar** has found the presence of **tantalum**, a rare metal, in the **Sutlej river sand** in Punjab.

About Tantalum:

- Discovered by **Anders Gustaf Ekenberg**, a Swedish chemist, in **1802**. Named after a **Greek mythological figure Tantalus**, the rich but wicked king of a town above **Mount Sipylus** in **Anatolia**.
- It is a **rare metal** with the **atomic number 73** — the number of protons found in one atom of the element. It is part of the **refractory metals group**, which are widely used as components of strong **high-melting-point alloys**.

- It's **grey, heavy, very hard, ductile (when pure)** and **one of the most corrosion-resistant metals** in use today. It possesses **high corrosion resistance** because when exposed to air, it forms an oxide layer that is extremely difficult to remove, even when it interacts with strong and hot acid environments.
- It is **almost completely immune to chemical attack at temperatures below 150°C** and is attacked only by **hydrofluoric acid**, acidic solutions containing the **fluoride ion**, and **free sulphur trioxide**.
- Tantalum also has an **extremely high melting point**, exceeded only by **tungsten** and **rhenium**.

Uses:

- Mostly used in the **electronic sector**. The **capacitors** made from **tantalum** are **capable of storing more electricity in smaller sizes** without much leakage than any other type of capacitor.
- Due to its **high melting point**, tantalum is used as a substitute for **platinum**. It is also used to make components for chemical plants, nuclear power plants, aeroplanes and missiles.
- As it **does not react with bodily fluids** it is used to make **surgical equipment** and **implants**, like **artificial joints**.
- A **composite** consisting of **tantalum carbide (TaC)** and **graphite** is one of the **hardest materials** known and is used on the **cutting edges of high-speed machine tools**.

Topic 96. PM LAUNCHES MISSION FOR MOST BACKWARD OF THE SCHEDULED TRIBES

Important for the subject: Schemes

Prime Minister of India launched the PM-PVTG Development Mission for most backward of the Scheduled Tribes.

What is the PM PVTG Development Mission?

- The Rs 24,000-crore project is aimed at the development of the PVTGs. As part of the mission, basic facilities will be provided to areas where these tribal groups live as these are mostly remote, scattered and inaccessible such as: road and telecom connectivity, electricity, safe housing, clean drinking water and sanitation, improved access to education, health and nutrition and sustainable livelihood opportunities.
- Several ministries will work in tandem to implement development projects. The schemes include: Pradhan Mantri Gram Sadak Yojana, Pradhan Mantri Gramin Awas Yojana, Jal Jeevan Mission, etc.
- The mission will be launched as part of 'Reaching The Last Mile', one of the seven Saptarishi priorities enlisted in the Union Budget 2023-24.
- The PM Janjati Adivasi Nyaya Maha Abhiyan is meant to ensure last-mile welfare

scheme delivery and protection for Particularly Vulnerable Tribal Groups (PVTGs).

Who are Particularly Vulnerable Tribal Groups?

- PVTGs are a more vulnerable group among tribal groups in India. These groups have: primitive traits, geographical isolation, low literacy, zero to negative population growth rate and backwardness.
- They are largely dependent upon hunting for food and a pre-agriculture level of technology. PVTGs also collect Non-Timber Forest Produce (NTFP) like honey, gum, bamboo and wax for consumption as well as sale.
- Due to their diet, these tribes often suffer diseases like anaemia, malaria, gastrointestinal disorders and skin infections. Government of India created PVTG list with the purpose of enabling improvement in the conditions of those communities in priority basis.
- During the fourth Five Year Plan a sub-category was created within Scheduled Tribes to identify groups that considered to be at a lower level of development. This was created based on the Dhebar Commission report and other studies. This sub-category was named “Primitive tribal group”.
- Groups that satisfied any one of the criterion were considered as PTG. There are total of 75 PVTGs in India. No new group was declared as PTG on the basis of the 2001 census. In 2006 the government of India renamed “Primitive tribal group” as Particularly vulnerable tribal group.
- Criteria for identification of PVTGs: Pre-agricultural level of technology, Low level of literacy, Economic backwardness, A declining or stagnant population.
- The government of India initiated the identification of these PVTGs in 1975, and an additional 23 groups were added to the category in 1993.

Need for identification:

- Due to their vulnerability, PVTGs require greater support and development compared to other tribal groups.
- The more developed and assertive tribal groups often receive a larger portion of tribal development funds, leaving PVTGs in need of more targeted support. According to the 2011 Census, Odisha has the largest population of PVTGs.
- It is followed by Madhya Pradesh and Andhra Pradesh (including Telangana). The largest PVTG is Odisha’s Saura community.

Topic 97. STEERING ROAD SAFETY IN INDIA BACK ONTO THE RIGHT LANE

Important for the subject : Schemes

Recently, **World Day of Remembrance for Road Traffic Victims** was commemorated on **November 19** to provide a platform for road traffic victims and their families to remember, support and act, such figures should serve as a wakeup call to all of us. We need immediate, coordinated and evidence based interventions to boost road safety and drastically reduce the daily human tragedies behind the alarming statistics.

Some facts of Road accidents in India:

- In India, road crashes are estimated to **cost between 5% and 7% of national GDP**. Road safety is a global problem, with **1.3 million people killed in road crashes every year**. But almost **one in every four road deaths** around the world takes place in India.
- Last week, the Government released a report that **2022 was the most fatal year for traffic crashes in India**.

Focus areas for better safety

- Priority areas must include enforcing the **use of seatbelts** not just for drivers but also for their passengers. Wearing a seatbelt reduces the risk of death among drivers and front seat occupants by upto 50%, and among rear seat occupants by 25%.
- **Similarly, helmet** use must be enforced among motorcyclists as well as their pillion passengers. Correct helmet use can lead to a 42% reduction in the risk of fatal injuries. Indeed, vulnerable road users, who include pedestrians, cyclists and the riders of two wheelers, account for almost three quarters of road deaths in India. And passengers unbelted in the back seat are not only risks to themselves upon impact but also to those in the front seat.
- **Speeding must be reduced** and there can be no tolerance for drink driving; a recent report by the Government revealed that speeding led to 70% of India's road crash deaths.
- **Road infrastructure should be enhanced** — too many roads are not in a safe condition, although government programmes in recent years have led to rapid improvements.
- **Large scale public awareness campaigns** such as the new UN global campaign for road safety **#MakeASafetyStatement**, involving international celebrities, must be undertaken to secure behavioural changes.
- The call to action is not new. The Sustainable Development Goals, created in 2015, include a target (**SDG 3.6**) to halve the number of global deaths and injuries from **road crashes and a call (SDG 11.2)** to make public transport safer, more affordable and more accessible to all. The good news is that we are already seeing steps in the right direction in India.
- The national government's implementation of the **Motor Vehicles (Amendment) Act, 2019**, and enhanced data collection from road crashes, are impactful measures that will help experts better understand where and why crashes are occurring, and, therefore, how to reduce them.

The UN helmet

- Police in the major cities, such as the capital, New Delhi, are adopting modern technologies such as **intelligent traffic management systems** to effectively regulate traffic flows in a much better way and minimise the potential for collision.

- To help **increase access to safe helmets**, the Special Envoy has worked with helmet producers to produce a low cost ventilated United Nations standard helmet, for under \$20, including here in India.
- Your **chances of surviving a road crash can vary enormously depending on what State you live in** and what access you have to high quality emergency care services and proper aftercare.
- We also need to look increasingly at **international best practices** and successes and then adapt them to India's specific needs and circumstances.
- **Road safety is a complex and multidimensional challenge**, but the benefits that come with addressing it can be equally profound. What we need is a comprehensive safe system approach as envisaged in the UN's Second Decade of Action for Road Safety 2021-2030, and full implementation of the MVA (Amendment) Act 2019.

What are the Initiatives Related to Road Safety?

Global:

Brasilia Declaration on Road Safety (2015):

- The declaration was signed at the second Global High-Level Conference on Road Safety held in Brazil. India is a signatory to the Declaration.
- The countries plan to achieve Sustainable Development Goal 3.6 i.e. to halve the number of global deaths and injuries from road traffic accidents by 2030.

Decade of Action for Road Safety 2021-2030:

- The UN General Assembly adopted resolution "Improving global road safety" with the ambitious target of preventing at least 50% of road traffic deaths and injuries by 2030.
- The Global Plan aligns with the Stockholm Declaration, by emphasizing the importance of a holistic approach to road safety.

The International Road Assessment Programme (iRAP) :

- It is a registered charity dedicated to saving lives through safer roads.

India:

Motor Vehicles Amendment Act, 2019:

- The Act hikes the penalties for traffic violations, defective vehicles, juvenile driving, etc.
- It provides for a Motor Vehicle Accident Fund, which would provide compulsory insurance cover to all road users in India for certain types of accidents.
- It also provides for a National Road Safety Board, to be created by the Central Government.

The Carriage by Road Act, 2007:

- The Act provides for the regulation of common carriers, limiting their liability and

declaration of value of goods delivered to them to determine their liability for loss of, or damage to, such goods occasioned by the negligence or criminal acts of themselves, their servants or agents and for matters connected therewith or incidental thereto.

The Control of National Highways (Land and Traffic) Act, 2000:

- The Act provides for the control of land within the National Highways, right of way and traffic moving on the National Highways and also for removal of unauthorized occupation thereon.

National Highways Authority of India Act, 1998:

- The Act provides for the constitution of an authority for the development, maintenance and management of NHs and for matters connected therewith or incidental thereto.

Conclusion:

- Ending the silent pandemic of road injuries will not only save lives but also strengthen the economy and improve the quality of life for everyone

Topic 98. BIRSA MUNDA AND MUNDA REBELLION***Important for the subject: History***

Birsa Munda lived a short — just 25 years — but valiant life.

Born on November 15, 1875, in Ulihatu village in present-day Jharkhand, Birsa spent his childhood in abject poverty in a tribal Munda family.

The Britishers introduced a feudal zamindari system in the Chhota Nagpur region, destroying the tribal “Khuntkatti” agrarian system.

The Raj brought in the outsiders — moneylenders and contractors, as well as feudal landlords — who aided the British in their exploitation.

- During the 1880s, Birsa closely witnessed the SardariLarai movement in the region, which demanded the restoration of tribal rights through non-violent methods like sending petitions to the Raj.
- However, the oppressive colonial regime paid no heed to these demands. The zamindari system soon reduced the tribals from the status of landowners to that of labourers.
- The feudal setup intensified the forced labour (vethbigari) in the forested tribal areas. This culminated in Birsa taking up the cause of Adivasis. He shed new light on the religious domain.
- He stood firm against missionaries who were belittling tribal life and culture. At the same time, Birsa worked to refine and reform religious practices, discouraged many superstitious rites.
- He brought in new tenets, prayers and worked to restore tribal pride. Birsa impressed

upon the Adivasis the importance of “sirmarefirun raja jai” or “victory to the ancestral king” — thus invoking the sovereignty of the tribals’ ancestral autonomous control over the land. Birsa became a mass leader and began to be considered as Bhagwan and Dharati Aba by his followers.

- The Mundas, Oraons, other Adivasis and non-Adivasis responded to his call and joined the “Ulgulan” or revolt against the colonial masters and exploitative dikus.
- Birsa asked the people not to pay any rent, and attacked the outposts of feudal, missionary and colonial authorities. With traditional bows and arrows, the tribals of Central and Eastern India waged an effective armed resistance against the British.
- Soon, he was captured by British police and lodged in jail, where he died in captivity on June 9, 1900.
- But Bhagwan Birsa Munda’s spirited struggle did not go in vain. It compelled the British to take cognisance of the plight and exploitation of tribals, and bring in the **Chhota Nagpur Tenancy Act** of 1908 for their protection.
- This Act restricted the transfer of tribal land to non-tribals, giving Adivasis a huge relief and became a landmark legislation for the protection of tribal rights.
- The British regime also took steps to **abolish Veth Bigari** or forced labour. India’s freedom struggle was strengthened by several tribal communities such as Mundas, Oraons, Santhals, Tamars, Kols, Bhils, Khasis, Koyas and Mizos, to name a few. Other tribal leaders referred by PM.
- Referring to the inspiring struggle of Bhagwan Birsa Munda for tribal pride, the Prime Minister mentioned the association of the land of Jharkhand with the innumerable tribal heroes. He mentioned that many heroes like Tilka Manjhi, Sidhu Kanhu, Chand Bhairav, Phulo Jhano, Nilambar, Pitambar, Jatra Tana Bhagat and Albert Ekka have made this land proud.
- The Prime Minister said Adivasi warriors took part in the freedom struggle in every nook and corner of the country and mentioned Govind Guru of Mangarh Dham, Tantiya Bhil of Madhya Pradesh, Bhima Nayak, Martyr Veer Narayan Singh of Chhattisgarh, Veer Gundadhur, Rani Gaidinliu of Manipur, Veer Ramji Gond of Telangana, Alluri Sitaram Raju of Andhra Pradesh, Rani Durgavati of Gond Pradesh.
- Lamenting the neglect of such personalities, the Prime Minister expressed satisfaction on remembering these heroes during the Amrit Mahotsava.