Factly Monthly

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For UPSC CSE Prelims Exam

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INDEX

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UPSC Syllabus: Science and technology

Axiom-4 mission

Why in News?

Group Captain Shubhanshu Shukla has been selected as the prime mission pilot for the Axiom-4 mission, while Group Captain Prasanth Balakrishnan Nair has been selected as the back-up mission pilot.

About the Axiom-4 Mission

Source: IE

Aspects	Description
About	1. It is a private spaceflight to the International Space Station (ISS). 2. The mission is in collaboration with NASA and is scheduled for launch in 2024. 3. It will be the fourth flight of Axiom Space, following the successful missions of Axiom Mission 1, Axiom Mission 2, and Axiom Mission 4. The mission will use a SpaceX Dragon spacecraft, launched atop a Falcon 9 rocket.
Operated by	It is operated by Axiom Space and uses a SpaceX Crew Dragon spacecraft.
Aim	The mission aims to continue Axiom Space's pioneering efforts to establish a sustainable human presence in Low Earth Orbit (LEO).
Mission Objectives	1. **Commercial Space Endeavours:** It will enable commercial activities in space, showcasing viable business platforms. 2. **International Collaboration:** It's diverse international crew will boost global space partnerships. 3. **Research and Development:** It supports microgravity experiments in materials science, biology, and Earth observation.

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Features	1. It is expected to be a short-duration mission, lasting approximately 14 days. 2. During their time aboard the International Space Station (ISS), the crew will conduct scientific experiments, perform technology demonstrations, and engage in educational outreach. 3. Axiom Space's long-term vision includes building the world's first commercial space station. 4. This mission is part of the company's broader plan to eventually transition from the ISS to their own independent orbital outpost.

Read More- **Chandrayaan-3: Significance and Way Forward- Explained, pointwise**

DNA Profiling

Why in News?

In mid-June, the Madras High Court overturned the conviction of a man in a POCSO rape case, citing insufficient proof by the prosecution. The court questioned the sole reliance on DNA evidence for establishing guilt, noting the victim's false accusation as a key factor in the wrongful conviction. This has increased the focus on the process of DNA profiling.

What is DNA?

1. DNA stands for Deoxyribonucleic Acid, which is the genetic material present in the nucleus of almost all cells in living organisms.

2. It carries information that determines the internal organization, physical characteristics, and physiological functions of the body.

3. DNA is made up of four nucleotide bases: Adenine (A), Guanine (G), Thymine (T), and Cytosine (C), arranged in a double-helix structure.

About DNA Profiling

1. DNA profiling is a method used to identify individuals based on their unique DNA sequences.

2. Although 99.9% of human DNA is identical, the remaining 0.1% contains variations that can be used to create a DNA profile.

3. Specific locations in this 0.1% are examined, focusing on Short Tandem Repeats (STRs), which are repetitive sequences of DNA that vary from person to person.

About Process of DNA Profiling

Source: Researchgate

Process	Description
Sample Collection	1. DNA can be collected from various biological materials like blood, saliva, semen, hair, or skin cells. 2. The process of collecting, storing, and transporting DNA samples is crucial to avoid contamination and ensure the accuracy of the results.
Laboratory Analysis	1. DNA profiling involves several steps: isolating DNA from the sample, amplifying specific genetic markers, and analyzing these markers to create a DNA profile. 2. The key steps are isolation, purification, amplification, visualization, genotyping, and statistical analysis.

How reliabile is DNA Profiling

1. DNA profiling is a powerful tool in forensic science, but it is not infallible. The process is based on probability, and various factors like sample contamination, degradation, or mishandling can affect the results.

2. The reliability of DNA evidence also depends on the quality of the sample and the expertise of the laboratory performing the analysis.

DNA Profiling in Criminal Cases

1. Role in Establishing Guilt or Innocence: DNA evidence can be critical in criminal investigations, helping to identify or exclude suspects. However, DNA evidence alone may not be conclusive.

2. Courts often require additional evidence to corroborate DNA findings before reaching a verdict.

3. In legal cases, the probative value of DNA evidence can vary. Courts may treat DNA evidence as strong, but not absolute, and it must be weighed alongside other evidence.

4. The absence of DNA evidence does not automatically imply innocence or guilt; other evidence may still be critical to the case.

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INS Arighat

Why in News?

India is on the verge of commissioning its second nuclear-powered submarine, INS Arighat, equipped with nuclear missiles for strategic deterrence.

About INS Arighat

Source:TOI

Aspects	Description
About	1. INS Arighat was commissioned into the Indian Navy on March 10, 2023. 2. INS Arighat is India's second indigenously built nuclear-powered ballistic missile submarine (SSBN). 3. The development of INS Arighat, along with its predecessor INS Arihant, is a part of India's effort to establish a credible nuclear triad, which includes land-based, air-based, and sea-based nuclear delivery systems.
Constructed by	The submarine was constructed at the Indian Navy's Ship Building Centre (SBC) in Visakhapatnam.
Significance	INS Arighat plays a crucial role in enhancing the nation's capability to launch nuclear missiles from land, air, and sea.
Features	1. INS Arighat has a submerged displacement of around 6,000 tons. The submarine is approximately 111 meters (364 feet) long and 11 meters (36 feet) wide. **2. Propulsion:** It is powered by a nuclear reactor which provides it with virtually unlimited range and endurance, allowing it to remain submerged for extended periods. **3. Armament:** INS Arighat is equipped with ballistic missiles capable of carrying nuclear warheads. The specific missiles include the K-15 Sagarika and potentially the K-4 missile, both designed to enhance the submarine's strategic strike capabilities. 4. The submarine features advanced stealth technology to reduce its detectability by enemy sonar systems. Its design incorporates lessons learned from INS Arihant,

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	improving its operational effectiveness and survivability.
Strategic Significance	**1. Nuclear Deterrence:** INS Arighat plays a crucial role in India's nuclear triad which ensures a credible second-strike capability. This enhances India's ability to retaliate in the event of a nuclear attack, thereby maintaining a strong and secure deterrent posture. **2. Patrols and Deployment**: It operates primarily in the Indian Ocean ensuring India's nuclear deterrent is always at sea. Its deployment enhances regional security and contributes to India's strategic influence.

EOS-08- Earth Observation Satellite

Why in News?

ISRO has successfully launched the EOS-08 Earth Observation Satellite through the Small Satellite Launch Vehicle (SSLV-D3) from the Satish Dhawan Space Centre (SDSC) in Sriharikota.

About EOS-08 Earth Observation Satellite

Source: ISRO

Aspects	Description
About the satellite	The EOS-08 is an Earth Observation Satellite built on ISRO's Microsat/IMS-1 bus platform. It is designed to operate in a circular Low Earth Orbit (LEO) at an altitude of 475 km and has a mission life of one year.
Technological Advancements	1. The EOS-08 satellite includes an Integrated Avionics System that combines communication, baseband, storage, and positioning (CBSP) functions. 2. It also has a structural panel with an embedded printed circuit board (PCB) and battery.
Mission Significance	1. The successful launch of SSLV-D3 and the precise orbit placement of the EOS-08

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satellite are major milestones for ISRO.
2. This mission enhances India's Earth observation abilities and showcases new advancements in satellite technology.

About the key payloads

The EOS-08 satellite carries three key payloads:

1. Electro Optical Infrared Payload (EOIR): The EOIR captures images in the Mid-Wave Infrared (MIR) and Long-Wave Infrared (LWIR) bands. It operates day and night, supporting applications like satellite-based surveillance, disaster and environmental monitoring, fire detection, volcanic activity tracking, and industrial disaster monitoring.

2. Global Navigation Satellite System — Reflectometry (GNSS-R) Payload: The GNSS-R payload demonstrates remote sensing using GNSS-R for applications like measuring ocean surface winds, detecting soil moisture, monitoring the Himalayan cryosphere, and identifying floods and inland water bodies.

3. SiC UV Dosimeter: The SiC UV dosimeter measures UV radiation.

First findings from ISRO's Chandrayaan-3 APXS Payload

Why in News?

Recently, scientists in India have released the findings of studies carried out by the Alpha Particle X-ray Spectrometer (APXS) payload, which was part of the Chandrayaan-3 mission. The findings reveal the first analysis of the composition of the topsoil in the Moon's southern latitudes.

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HOW DOES APXS WORK?

APXS IS a mobile chemical lab used to detect elemental compositions. It is small and lightweight; ideal for space missions to study the composition of rocks and soils of celestial bodies.

IT BOMBARDS a sample with alpha particles (helium nuclei stripped of electrons), and the energy briefly 'excites' atoms of the sample. The atoms return to stable state by emitting x-rays.

X-RAYS emitted from the sample carry a specific amount of energy that is unique to the element it originated from. APXS reads these characteristic emission signatures to determine the composition of the sample.

EMISSION RATE of x-rays provides clues about the concentration of a particular element in the sample. Computers on APXS process the data from the sample (which most often contains multiple elements) to identify the elements present and to quantify their concentration.

Silicon Drift Detector

Cm-244 Source Assembly

(Top) Chandrayaan lander as seen by rover; the APXS instrument. *ISRO*

Source- Indian Express

What are the three Key Findings by the Chandrayaan 3 APXS payload?

Finding 1	The terrain around Chandrayaan 3's landing site is fairly uniform
Finding 2	The Moon's crust was formed layer by layer.

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	(This finding adds further credence to the lunar magma ocean (LMO) hypothesis. Lunar magma ocean (LMO) hypothesis, states that lunar surface in the immediate aftermath of the Moon's formation was covered by a sea of molten material.)
Finding 3	The topsoil around the lunar south pole has a greater-than-expected sprinkling of minerals, as compared to the lower layers of the lunar crust.

Reasons propounded by the scientists for Finding-3 which is a new discovery by APXS

The third finding of the topsoil around the lunar South Pole having greater-than expected sprinkling of minerals when compared to the lower layers of the lunar crust, is a new finding.

Reasons given by scientists- The researchers have proposed that this "mixing" could have been caused by the asteroid impact that led to the formation of the South Pole Aitken (SPA) Basin. The researchers theorise that this asteroid impact resulted in the excavation of magnesium-rich material from deeper layers of the Moon, out to the surface of the surrounding areas as ejecta. Since the Chandrayaan-3 landing site was just 350 km from the rim of the SPA basin, it could have been the reason for greater mixing.

SPA basin has a diameter of approximately 2,500 km. It is believed to have been formed 4.2-4.3 billion years ago, when the asteroid hit near the lunar south pole.

What is the Significance of these Findings?

1. First measurements near the Moon's poles- Chandrayaan-3 is the first space mission the first to carry out in situ experiments of any kind at the poles. It is also the first time that soil measurements on lunar highlands (light coloured, elevated basins on the Moon standing above dark-coloured basins known as maria) have been taken with such high frequency.

2. Remote sensing and planning future missions- The finding of uniform surface near the lunar pole, implies that the region can be used as a calibration point for remote sensing operations, and can thus be used for planning future missions.

3. Source-crater pairing of lunar meteorites- Future missions near the south pole can also evaluate for source-crater pairing of lunar meteorites.

Lunar Meteorites- Lunar meteorites are meteors that originate from the Moon, and are ejected upon impact from an asteroid or comet. These are caught in the Earth's gravitational field, and eventually end up on Earth.

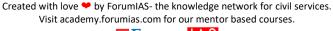# UPSC Syllabus: Defence

ICGS Sujay

Why in News?

Recently, ICGS Sujay made a port call in Jakarta, Indonesia.

About ICGS Sujay

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Source: PIB

Aspects	Description
About	1. It is an Offshore Patrol Vessel (OPV) of the Indian Coast Guard (ICG). 2. It is stationed at Paradip, Odisha. 3. It operates under the command of the Commander of Coast Guard Region (North-East) and is frequently deployed for various missions.
Features	1. It is equipped with a 30mm CRN 91 gun and features advanced navigational and communication systems, sensors, and machinery. 2. It is a 105-meter vessel, crewed by 12 officers and 94 men. Two women ICG officers also participated in bilateral cooperative engagements, representing "Women in Maritime Security and Safety." 3. The ship is designed for extended deployment in various maritime zones, carrying out diverse missions such as surveillance, search and rescue, and law enforcement.
Professional Interactions & Engagements	1. The crew of ICGS Sujay took part in professional exchanges focused on Marine Pollution Response (MPR), Maritime Search and Rescue (M-SAR), and Maritime Law Enforcement. 2. The 10 National Cadet Corps (NCC) cadets on board ICGS Sujay will join local youth organizations in an Environmental Protection Walkathon focused on combating marine plastic pollution.
Significance of the Deployment	**1. MoU with BAKAMLA:** The deployment follows the Memorandum of Understanding signed between the Indian Coast Guard and BAKAMLA on July 06, 2020, to enhance maritime cooperation. **2. Reinforcing Bilateral Relationships:** The deployment strengthens ties with key maritime agencies, emphasizing safety, security, and environmental sustainability in the region. **3. Addressing Maritime Challenges:** It aims to tackle contemporary maritime challenges through collaborative efforts.

UPSC Syllabus- Defence Exercises

Tarang Shakti Air Exercise

Why in News?

India's air exercise 'Tarang Shakti' will be the first and largest international air exercise ever conducted in India. Invitations have been extended to 51 countries for this exercise.

Source- IAF

About Tarang Shakti

Tarang Shakti	It is the first and largest international air exercise ever conducted in India.
Aim	This exercise aims to strengthen strategic relations with the international community.
Phases of the Exercise	The Exercise will be conducted in two phases- **Phase one-** It will be conducted at Sulur in Tamil Nadu from August 6 to August 14. Four countries including France, Germany, Spain and the United Kingdom will participate with their assets. **Phase two-** It will be held at Jodhpur in Rajasthan from September 1 to 14. It will see participation from Australia, Bangladesh, Greece, Singapore, UAE and the USA with their assets.
Assets Participation	1. Assets like F-18, A-18, C-130 aircraft, F-16 aircraft, A-10, KC-130 aircraft, KC-135 aircraft along with all the assets of the Indian Air Force. 2. Eurofighter Typhoon and Rafale from other countries. 3. Indian Navy with MiG-29K aircraft

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Other Objectives	1. Showcasing the booming indigenous defence ecosystem in India. 2. Supporting the country's vision of Atmanirbhar Bharat (self-reliant India). 3. Defence industrial expo that will showcase top Indian defence companies and innovative startups.

DRIPS Portal

Why in News?

Recently, the DRIPS (Disaster Resilient Infrastructure for Power Sector) portal was launched by Ministry of Power and Ministry for Housing and Urban Affairs.

About DRIPS (Disaster Resilient Infrastructure for Power Sector) portal

Source: PIB

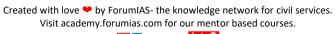| Aspects	Description
About	The DRIPS portal is a comprehensive Disaster Response Platform for swiftly identifying and deploying essential resources during disaster situations.
Launched by	Ministry of Power and Ministery for Housing and Urban Affairs
Purpose	To enhance disaster preparedness and response in India's power sector by providing a

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	centralized platform for rapid identification and deployment of resources during emergencies.
Aim	The portal aims to address the vulnerabilities exposed by recent natural disasters, such as cyclones and floods, particularly in coastal states and Union Territories.
Features	**1. Enhanced Coordination and Effectiveness:** It aims to reduce human error and improve the coordination among power sector entities, leading to a more effective emergency response. **2. Rapid Service Restoration:** The system benefits power generators, distributors, and consumers by ensuring the swift restoration of power services during emergencies. **3. Centralized Point of Contact:** DRIPS serves as a single contact point for all designated nodal officers from various departments within the power sector and other relevant agencies in affected districts and states. **4. Inventory Management:** The portal manages an inventory of critical power system equipment and supplies, essential for emergency response efforts. **5. National Power Portal Integration:** The Central Electricity Authority (CEA) is responsible for developing and hosting inventory on the National Power Portal.
Benefits of DRIPS	**1. Transparent and Coordinated Response:** The portal promotes transparency and coordination in the power sector during emergencies, reducing human error. **2. Utility for Generators, Distributors, and Consumers:** It benefits not only power generators and distributors but also consumers by ensuring faster restoration of services.

Jupiter Icy Moons Explorer (JUICE) Mission

Why in News?

The European Space Agency's Jupiter Icy Moons Explorer (JUICE) is returning towards Earth on August 19-20. It will perform a lunar-earth double fly-by manoeuvre, and then continue its journey to Jupiter.

About the JUICE Mission

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1. **About:** Jupiter Icy Moons Explorer (JUICE) mission is to explore Jupiter and its three large moons: Callisto, Europa, and Ganymede. These moons are of particular interest because they may harbour conditions that could support life.

2. **Initiated by:** This mission has been initiated by the European Space Agency (ESA).

3. **Launch duration:** The JUICE mission was launched in 2023. It will reach Jupiter and its moons by 2031, after an eight-year journey.

4. **Significance:** This mission is the first-ever lunar-Earth flyby combined with the first-ever double gravity assist manoeuvre.

Double gravity assist manoeuvre as part of the mission
Initially, JUICE will use the Moon's gravity to set the correct path toward Earth (First Gravity assist manoeuvre). Then, it will use Earth's gravity to slow down, and take a shortcut towards Venus. (Second assist manoeuvre)
After this double flyby, JUICE will continue its journey to Jupiter with additional gravity assists from Venus in 2025 and Earth again in 2026 and 2029. These assists are crucial for steering JUICE without needing a large rocket.

About gravity assist technique

1. **About:** Gravity assist is a method to change a spacecraft's speed and direction by flying close to a planet or moon. This allows the spacecraft to use the gravitational pull to speed up, slow down, or change its course without using much fuel.

2. **Significance of the technique:** The gravity assist method is a proven way to navigate the solar system efficiently. **For ex-** By taking advantage of the Moon's and Earth's positions, JUICE can reach Jupiter with a smaller rocket and less fuel, making the mission more feasible.

3. **Challenges:** The double flyby is complex and risky. Any mistake could throw the spacecraft off course, requiring more fuel to correct, which could endanger the mission.

Difference between Gravity Assist Manoeuvre and Double Gravity Assist Manoeuvre

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Gravity Assist Manoeuvre	Double Gravity Assist Manoeuvre
1. In a gravity assist, the spacecraft flies close to a single planet or moon. 2. The gravity of that body pulls on the spacecraft, altering its speed and direction. 3. This can either speed up or slow down the spacecraft without using additional fuel.	1. In a double gravity assist, the spacecraft performs gravity assists with two different celestial bodies. 2. The first gravity assist changes the spacecraft's trajectory and speed, preparing it for the second assist, which further refines its path.
Example: A spacecraft passing close to Jupiter to gain speed and head towards Saturn.	**Example**: A spacecraft using a gravity assist from Venus to gain speed, followed by another assist from Earth to adjust its course towards Mars

Read more: JUICE Mission

Maritime Rescue Coordination Centre

Why in News?

Raksha Mantri Shri Rajnath Singh recently inaugurated the new Indian Coast Guard (ICG) Maritime Rescue Coordination Centre in Chennai, Tamil Nadu. He also virtually launched the Regional Marine Pollution Response Centre in Chennai and the Coast Guard Air Enclave in Puducherry.
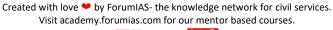
About Maritime Rescue Coordination Centre (MRCC)

1. Purpose: The MRCC aims to improve the coordination and effectiveness of maritime rescue operations, especially for mariners and fishermen in distress.

2. Technology: The Centre is equipped with the latest distress monitoring systems, including terrestrial and satellite systems, and advanced communication tools for real-time alert management.

3. Personnel: It involves highly trained ICG personnel, specialized in Search and Rescue operations who manage the Centre to ensure quick responses during emergencies.

About Regional Marine Pollution Response Centre (RMPRC)

1. About: The RMPRC is India's first facility dedicated to coordinating responses to marine pollution, especially oil and chemical spills in the Indian Ocean Region. It is located at Chennai Port.

2. Background: The Centre was first announced by Shri Rajnath Singh during the Indo-ASEAN meeting in Cambodia on November 22, 2022.

3. Emergency Response: The Centre operates 24/7, monitoring marine oil pollution incidents and coordinating responses.

4. Training: The Centre also serves as a training hub for pollution response techniques, offering practical training to various organizations and personnel from friendly countries.

About Coast Guard Air Enclave (CGAE)

1. The Air Enclave strengthens maritime security along the Puducherry and South Tamil Nadu coast.

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2. It houses Chetak and Advanced Light Helicopter Squadrons, both are indigenously built. They are to support maritime patrol, Search and Rescue, and other missions from land and sea.

UPSC Syllabus: International relations

India-Malaysia Comprehensive Strategic Partnership

Why in News?

Recently, Prime Minister Narendra Modi and Malaysian Prime Minister Anwar Ibrahim upgraded the bilateral relationship to a 'Comprehensive Strategic Partnership'. This step builds on the Strategic Partnership of 2010 and the Enhanced Strategic Partnership of 2015.

Key Takeaways

1. **Key Agreements:** Multiple agreements were signed covering critical areas such as worker mobility, digital technology, culture, tourism, sports, and education.

2. **BRICS Membership Support:** India has agreed to support Malaysia's interest in joining BRICS.

3. **Geopolitical Considerations:** Discussions also covered geopolitical challenges in the Indo-Pacific region, highlighting India's role in regional stability and its commitment to international law.

4. **Cultural and Strategic Cooperation**: The leaders emphasized the shared multicultural and multi-ethnic fabric of both nations. They further discussed expanding cooperation in digital technology, trade, agriculture, education, and defense.

6. **Strategic Rice Export Agreement:** India agreed to a one-time export of 2,00,000 metric tonnes of white rice.

7. **Discussion on Extradition and Counter-Extremism:** Both leaders also emphasized the need to tackle extremism and radicalism.

What are the differences between normal and comprehensive strategic partnership?

Point of differences	Normal Partnership	Comprehensive strategic partnership
Definition	It involves two entities (countries) working together on specific goals or challenges.	It involves two or more entities (countries) working across broad domain and objectives.
Scope	It usually focused on particular projects, joint ventures, or sharing resources.	It usually focuses on economic, technological, cultural, and political cooperation. It often includes both bilateral and multilateral cooperation.
Level of commitment	Moderate	High
Duration	Might be short-term or long-term,	Usually long-term along with regular high-level

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	depending on the agreement.	dialogues and joint planning.
Formalities	Formalized through agreements or memorandums of understanding (MOUs)	Formalized through detailed agreements or treaties, often involving state visits, high-level meetings, and joint statements. They may include defense pacts, economic agreements, and cultural exchanges.

Read More: BRICS-Plus

Axis of Resistance

Why in News?

Hamas leader Ismail Haniyeh was assassinated in an air strike in Tehran. Experts believe Iran could increase attacks against Israel through its allies in the "Axis of Resistance".

About Axis of Resistance

Source: WION

Aspects	Description
About	The "axis of resistance" is an informal, loose-knit alliance that includes both Sunni and Shia Muslim groups and governments in Yemen, Syria, Lebanon, Gaza and Iraq, with differences and varying levels of proximity to one another and to Tehran.
Origin	The coalition's name is inspired by former US President George W. Bush's term "axis of evil", which referred to Iran, Iraq, and North Korea.
History	1. The roots of the Axis of Resistance trace back to the Iranian Revolution of 1979, which allowed radical Shia Muslim clerics to come to power. 2. To expand its influence in a predominantly Sunni region, Iran's new regime began supporting non-state actors. 3. To deter threats from Israel and the US- Iran views Israel's creation in 1948 as a means for the US and the West to influence the region for strategic interests.
Group Members	i) Hezbollah: A Shiite militant organization. ii) Hamas: A Palestinian Sunni militant group based in Gaza. iii) Palestinian Islamic Jihad (PIJ): A Sunni Islamist militant group in Palestine. iv) Houthis: A Zaydi Shia militant group in Yemen.

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UPSC Syllabus: Indian Economy

Purandar Fig

Why in News?

The Agricultural and Processed Food Products Export Development Authority (APEDA) facilitated the export of India's first ready-to-drink fig juice, made from GI-tagged Purandar figs to Poland. This move aims to bring India's unique agro-products to the global stage.

About Purandar Figs

Source: IE

Aspects	Description
About	1) Purandar figs are grown in the fertile lands of Purandar taluka in Pune district, Maharashtra.
Favorable condition	1) The dry weather, hilly terrain, and well-drained soil in the region make it perfect for fig farming. 2) The unique qualities of Purandar figs come from the area's specific climate, red-black soil, and salt-free well irrigation.
Features	1. Purandar figs are famous for their unique taste, smooth texture, and high pulp content. 2. They are rich in vitamins and minerals, with a deliciously sweet flavor and an appealing violet color. 3. These figs have a sweet, lingering taste, low acidity, and high Total Soluble Sugar (TSS), making them a favorite among fruit lovers. 4. Their bell shape and larger size make them stand out both in appearance and flavor. 5. A key feature of Purandar figs is that over 80% of the fruit is edible, consisting of

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	juicy, sweet pulp.
Recognition	1) The GI tag for Purandar figs emphasizes their uniqueness, connecting their quality and reputation to their geographic origin. 2) Fig juice made from these GI-tagged figs has already gained international recognition, winning an award at the Macfrut 2024 event highlighting its potential in global markets.

Seaplane Operations Guidelines

Why in the news?

The Union Minister for Civil Aviation has introduced new guidelines for seaplane operations in India, aiming to improve connectivity, boost tourism, and drive economic growth by linking remote areas.
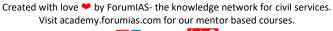
New Guidelines for Seaplane operation

1) New regulations for seaplane operations permit non-scheduled operators (NSOPs) to offer these services.

Note-Seaplanes are amphibian aircraft that can take off and land on the sea.

2) Under the relaxed norms of the Directorate General of Civil Aviation (DGCA), a waterdrome licence is no longer required, and compliance requirements have been eased.

3) New Commercial Pilot Licence (CPL) holders can now directly get seaplane ratings to fly seaplanes.

What is the significance of new guidelines?

1) These guidelines will integrate seaplanes in the aviation sector to improve transportation, create jobs, and boost economic growth.

2) India's long coastline, rivers, and lakes provide a great chance for seaplane development. New guidelines will extend Viability Gap Funding (VGF) to support these operations.

3) The guidelines will help in building water aerodromes. India had brief seaplane services in Andaman & Nicobar and Gujarat. The government now aims to establish water aerodromes at 18 sites across different states.

4) The guidelines foster a supportive policy environment, promote research on electric seaplanes, and aim to develop Multimodal Transport Hubs for better connectivity.

5) These guidelines focus on safety and security, clearly outline responsibilities of all stakeholders, and effective seaplane operations nationwide.

NOTE– Waterdromes- They are designated areas on water bodies where seaplanes can safely land and take off. They are essentially like airports but situated on water, such as lakes, rivers, or coastal areas.

Read More-Viability Gap Funding

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UPSC Syllabus-Schemes & Programmes.

Unique Land Parcel Identification Number (ULPIN) and land related reform

Why in News?

The Centre has allocated ₹10,000 crore in incentives to states for implementing land-related reforms in both rural and urban areas for the financial year 2024-25.

About land related reform in Rural and Urban Areas:

1. Rural Areas: States are required to implement reforms such as the assignment of a Unique Land Parcel Identification Number (ULPIN or Bhu-Aadhaar) for all lands, digitization of cadastral maps, surveys of map sub-divisions according to current ownership, and the establishment of a land registry.

2. Urban Areas: Fiscal incentives will be provided for the digitization of land records using GIS mapping and the creation of an IT-based system for property record administration, updating, and tax management.

3. Farmers' Registry: An additional ₹5,000 crore will be allocated for creating a Farmers' Registry, which will include details of six crore farmers and their lands.

About Unique Land Parcel Identification Number (ULPIN)

1. The Unique Land Parcel Identification Number (ULPIN) is also referred to as **Bhu-Aadhaar.** It is a unique identifier assigned to every land parcel in India.

This initiative is part of a broader set of land reforms aimed at improving land management and governance.

2. The purpose of ULPIN is to ensure a standardized system for the identification of land parcels across the country.

3. Key aspects of ULPIN include:

i) Unique Identification: Each land parcel will have a unique 14-digit number that can be used to access land records and other relevant data.

ii) Digitization of Land Records: ULPIN is part of the digitization drive that aims to make land records easily accessible and more transparent.

iii) GIS Mapping: The implementation of ULPIN involves the use of Geographic Information System (GIS) technology for accurate mapping and updating of land records.

iv) Integration with Land Registry: ULPIN will be integrated with existing land registries to ensure that all land parcels are accurately recorded and that ownership details are up-to-date.

Bhavishya Software

Why in News?

Recently, the DOPPW has introduced an innovative centralized pension processing software called 'Bhavishya' for all central government Ministries/Departments.

About Bhavishya

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1. About: Bhavishya is a centralized pension processing software introduced by Department of Pension & Pensioners' Welfare (DOPPW). Bhavishya became mandatory for all central civil Ministries and Departments starting January 1, 2017.

2. Purpose: It is to address the challenges of delays, clerical errors, financial loss, and harassment faced by pensioners during pension processing.

Key Features of Bhavishya

1. Auto Registration of Retirees: Integrated with payroll systems, Bhavishya automatically registers retiring employees and provides essential Management Information System (MIS) data to various departments, highlighting the number of employees set to retire in the next 15 months.

2. Self-Registration for Stakeholders: All stakeholders, including DDOs, Heads of Offices (HOO), and Pay and Accounts Officers (PAO), can self-register on Bhavishya. Retirees can fill out their pension forms themselves, streamlining the process and reducing errors.

3. Strict Timelines: The pension processing begins 15 months before retirement, with strict deadlines for each stage to ensure timely completion. The software sends automatic reminders to both the pensioner and stakeholders to adhere to these deadlines.

4. Transparency and Accountability: Bhavishya provides complete transparency in the pension process, making it easy to identify and address any delays, ensuring accountability at every stage.

5. Automatic Calculation of Retirement Benefits: The software ensures accurate calculation of all retirement benefits by removing manual interventions, reducing the likelihood of grievances.

6. Real-Time Updates: Pensioners receive real-time updates via email and SMS for every action related to their pension processing, from initiation to the first credit in their bank account.

7. e-PPO (Electronic Pension Payment Order): Bhavishya is integrated with the Public Financial Management System (PFMS) module, enabling the issuance of electronic PPOs (e-PPOs), which are sent directly to the Central Pension Accounting Office (CPAO) and the paying bank branch.

UPSC Syllabus: Government initiative

Green Tug Transition Program (GTTP)

Why in News?

Recently, the Union Minister of Port Shipping and Waterways officially launched the SOP for Green Tug Transition Program (GTTP).

Note- A Tug is a marine vessel that manoeuvres other vessels by pushing or pulling them. These boats typically tug ships in circumstances where they cannot move under their own power.

About Green Tug Transition Program (GTTP)

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Source: PIB

Aspects	Description
About	The Green Tug Transition Program (GTTP) is an initiative launched by the Indian government to replace diesel-powered harbour tugs with zero-emission green tugs in Indian Major Ports.
Objectives of GTTP	**1. Environmental Sustainability:** The program aims to reduce carbon emissions and promote the use of cleaner, sustainable fuels in maritime operations. **2. Decarbonizing Ports:** GTTP is a crucial step in decarbonizing the operations of Indian ports by phasing out conventional fuel-based tugs.
Implementation Phases	1. The first phase of the program will run from October 1, 2024, to December 31, 2027. 2. **Four Major Ports:** Jawaharlal Nehru Port Authority, Deendayal Port Authority, Paradip Port Authority, and V.O. Chidambaranar Port Authority will each procure or charter at least two green tugs during this phase.
Technology Used	The initial green tugs will be battery-electric, with the potential to incorporate hybrid, methanol, and green hydrogen technologies.
Benefits	**1. Boost to Domestic Industry:** All green tugs under this program will be constructed in Indian shipyards, promoting the 'Make in India' initiative. **2. Job Creation:** The program is expected to generate significant employment opportunities in shipbuilding and ship design.
Long-Term Vision	1. By 2040, all tugs operating in Indian Major Ports are expected to be green tugs. 2. From 2033 onwards, any new tug built in India for use in Indian ports must meet the standards for green technologies.
Alignment with Broader Maritime Goals	**1. Maritime India Vision 2030:** The GTTP aligns with the Maritime India Vision 2030, which includes goals such as sourcing 60% of power demand from renewable energy at major ports and reducing carbon emissions by 30% per ton of cargo by 2030. **2. Maritime Amrit Kaal Vision 2047:** This vision extends the goals, focusing on reducing greenhouse gas emissions from port vessels by 30% by 2030.

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Nandini Sahakar Scheme

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Why in News?

The National Cooperative Development Corporation has recently launched the Nandini Sahakar Scheme to support women entrepreneurs.

About Nandini Sahakar Scheme

Aspects	Description
About	The Nandini Sahakar Yojana is a women-focused initiative by the National Cooperative Development Corporation (NCDC).
Focus	Women-focused framework for financial assistance, project formulation, hand-holding, and capacity development.
Aim	i) The scheme aims to improve socio-economic status of women and supports entrepreneurial dynamism of women through women cooperatives. ii) It will converge critical inputs of women's enterprise, business plan formulation, capacity development, credit and subsidy and/ or interest subvention of other schemes.
Objective	i) Align with the principles of Atmanirbhar Bharat as outlined by the Hon'ble Prime Minister. ii) Improve the socio-economic status of women. iii) Support entrepreneurial dynamism through women cooperatives.
Features	1. **Financial Assistance**: The scheme provides financial assistance to women cooperatives for business model-based activities. There is no minimum or maximum limit on financial aid for projects. 2. **Project Formulation**: It assists women cooperatives in project formulation, ensuring their business plans are well-structured. 3. **Capacity Development**: The scheme focuses on building the capacity of women cooperatives to effectively manage their enterprises. 4. **Convergence**: It brings together critical inputs such as credit, subsidies, and interest subvention from other schemes to support women's enterprise.

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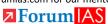## AI-Based National Pest Surveillance System (NPSS)

Why in News?

Recently, an AI-based National Pest Surveillance System (NPSS) was launched by the Union Government of India.

About AI-Based National Pest Surveillance System (NPSS)

Source: Agrio

Aspects	Description
About	1. It was launched on 15th August 2024. 2. This digital initiative was developed by the Department of Agriculture and Farmers' Welfare. 3. It leverages advanced technologies like Artificial Intelligence (AI) and Machine Learning (ML) to provide timely and accurate pest management advisories.
Aim	This AI-based system aims to help farmers connect with agricultural scientists and experts for effective pest management using their mobile phones.
Key Objectives of NPSS	**1. Reducing Dependence on Pesticide Retailers:** NPSS is designed to minimize farmers' reliance on pesticide sellers by providing direct, science-based advice from experts. **2. Promoting a Scientific Approach:** The system encourages farmers to adopt a scientific mindset toward pest control, ensuring that they use pesticides more effectively and safely. **3. Real-Time Pest Analysis:** NPSS uses artificial intelligence (AI) to analyze the latest data on pests. This helps both farmers and experts identify and manage pest issues promptly.
Benefits for Farmers	**1. Increased Yield:** By using NPSS, farmers can address pest problems early, leading to healthier crops and higher productivity. **2. Direct Connection with Experts:** Farmers can take photos of infested crops and insects, upload them on the NPSS platform, and receive expert advice on pest management. **3. Accurate Pesticide Use:** The system guides farmers on the correct type and amount

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	of pesticide to use, reducing the risk of overuse and helping to maintain soil health.
Implementation and Future Plans	**1. No Additional Funding Required:** The system is designed to be a cost-effective solution that doesn't require extra financial resources. **2. State-Level Rollout:** The technology will be provided to states which will use their outreach programs to spread awareness and encourage farmers to adopt NPSS. **3. Proven Success:** Before its national launch, NPSS was tested through successful pilot schemes ensuring its effectiveness in real-world conditions.

Model Solar Village Component of PM Surya Yojana

Why in News?

The Ministry of New and Renewable Energy recently notified the Scheme Guidelines for implementing the 'Model Solar Village' under PM-Surya Ghar: Muft Bijli Yojana.

About Model Solar Village

Aspects	Description
About	It is a key component under the PM-Surya Ghar: Muft Bijli Yojana to promote solar energy adoption across rural India.
Launched by	Ministry of New and Renewable Energy (MNRE)
Implementing Agency	1. The implementation of the 'Model Solar Village' scheme will be carried out by the State/UT Renewable Energy Development Agency. 2. The District Level Committee (DLC) will supervise the process to ensure the selected villages effectively transition to solar-powered communities.
Objective	The initiative aims to establish one Model Solar Village in each district across India. It will enable village communities to become self-reliant in meeting their energy needs through solar power.
Financial outlay	1. A total financial outlay of ₹800 crore has been allocated for the 'Model Solar Village' component. **2. Grant per Village:** Each selected Model Solar Village will receive a central financial assistance grant of ₹1 crore.
Eligibility	**1. Eligibility:** To be eligible, a village must be a revenue village with a population of over 5,000, or 2,000 for special category states. **2. Competitive Mode:** Villages will be selected through a competitive process. In this process, they are checked six months after being declared a potential candidate by the District Level Committee (DLC) that how much overall Distributed Renewable Energy (RE) capacity have they added. **3. Winning Criteria:** The village with the highest RE capacity in each district will be

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	declared the winner and will receive the ₹1 crore grant.

About PM-Surya Ghar: Muft Bijli Yojana

1. PM-Surya Ghar: Muft Bijli Yojana was approved on 29th February 2024.

2. Scheme Objective: The Yojana aims to increase the share of solar rooftop capacity and empower residential households to generate their own electricity.

3. Focus: The scheme focuses on harnessing solar energy by installing solar panels on residential rooftops.

4. This initiative is designed to promote renewable energy use, reduce electricity costs for households, and support environmental sustainability.
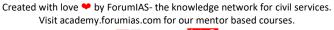
Justice Hema Committee Report

Why in News?

The Kerala government has recently released the Justice Hema Committee report. The report's release was postponed for nearly five years, mainly due to concerns about the sensitive information it contained and the potential breach of privacy for those involved.

About the Justice Hema Committee

Source: IE

1. The Justice Hema Committee was formed by the Kerala government in July 2017.

2. It was formed in response to the abduction and sexual assault of a leading Malayalam actress, which highlighted the broader issue of discrimination against women in the Malayalam film industry.

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3. The committee was tasked with investigating issues of sexual harassment and gender inequality in the industry.

Key Findings of the Justice Hema Committee Report

1. Prevalence of Sexual Harassment: The report reveals a pervasive culture of sexual harassment in the Malayalam film industry, including the existence of the casting couch, vulgar comments, and instances where male co-actors would force themselves into the rooms of female colleagues.

2. Fear of Retribution: Many women in the industry do not report sexual harassment due to fear of retribution. The report notes that this fear is well-founded, with women also facing cyber harassment from fan clubs as a form of intimidation.

3. Influence of a Male-Dominated Mafia: The report highlights the existence of an all-male "mafia" of influential actors and producers who control the industry, wielding their power with impunity and suppressing any opposition.

4. Lack of Basic Facilities for Women: The report points out the inadequate facilities for women on film sets, such as the lack of proper toilets and changing rooms, which exposes women to health risks like urinary tract infections.

5. Gender Pay Disparity: The report attributes the gender pay gap in the industry to the absence of written contracts, which disproportionately affects women.
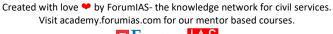
UPSC Syllabus: Reports and indices

Multidimensional Vulnerability Index

Why in News?

Recently, the UN General Assembly officially launched the "Multidimensional Vulnerability Index" (MVI) aimed at providing small island states and developing nations with better access to low-interest financing.

About Multidimensional Vulnerability Index (MVI)

Aspects	Description
About	1) The Multidimensional Vulnerability Index (MVI) is a newly established international quantitative benchmark. 2) It is designed to measure structural vulnerability and the lack of structural resilience across various dimensions of sustainable development at the national level. The United Nations is actively collaborating with SIDS to develop and implement the MVI.
Purpose	1) The MVI is designed to complement traditional development metrics like GDP. 2) It aims to address the specific needs of small island developing states (SIDS) and other developing nations that face unique vulnerabilities but do not qualify for low-interest development financing based on GDP per capita alone.
Key Indicators in the MVI	The MVI incorporates a range of indicators reflecting a state's structural vulnerabilities and lack of resilience, including:

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	i) Import dependency ii) Exposure to extreme weather events and pandemics iii) Impacts of regional violence and refugee crises iv) Demographic pressure v) Availability of water and arable land resources vi) Child mortality under the age of five
Limitations of Traditional Measures	1) Traditional metrics, such as Gross National Income (GNI), often fail to adequately capture the vulnerabilities faced by SIDS. 2) These traditional measures make it difficult for SIDS to access necessary financing for development.
Applications of the MVI	The MVI will play a crucial role in guiding: i) Programmatic support for SIDS ii) Viable debt service payment strategies iii) Financing for sustainable development initiatives tailored to the specific challenges of SIDS.

Project on Microplastic Contamination

Why in News?

The Food Safety and Standards Authority of India (FSSAI) has initiated a project to evaluate microplastic contamination in food products and to develop detection methods.

Source- Discovery

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About the Project on Microplastic Contamination

Aspects	Description
About	The Food Safety and Standards Authority of India (FSSAI) has initiated a project to address the issue of microplastic contamination in food products.
Objectives	1. Develop Detection Methods: Create and validate methods to detect micro and nano-plastics in food. 2. Assess Contamination Levels: Evaluate how widespread microplastics are in food and the exposure levels for consumers in India. 3. Set Analysis Standards: Establish standard procedures for analyzing micro/nano-plastics. 4. Laboratory Testing: Conduct comparisons between different laboratories to ensure consistent results. 5. Gather Data: Collect important data on microplastic exposure in the Indian population.
Collaborating Institutions	The project is being implemented in collaboration with leading research institutions such as CSIR-Indian Institute of Toxicology Research (Lucknow), ICAR-Central Institute of Fisheries Technology (Kochi) and Birla Institute of Technology and Science (Pilani).
Global Context	1. The Food and Agriculture Organization (FAO) has reported finding microplastics in common food items like sugar and salt. 2. While these findings are global, FSSAI emphasizes the need for India-specific data to understand the impact on public health. 3. The results of this project will not only shape regulations in India but also add to the global knowledge on microplastic contamination in food.
Commitment to Public Health	1. FSSAI is focused on ensuring that food in India is safe and healthy. 2. This project will help determine the level of microplastic contamination in Indian food and guide the creation of safety regulations.

About Microplastics

1. Microplastics are tiny plastic particles, smaller than 5 mm in length, even tinier than a grain of rice.

2. Types of Microplastics:

i) Primary Microplastics: These are intentionally manufactured as small particles for commercial purposes. They are commonly found in cosmetics, nurdles (plastic pellets used in industrial manufacturing), and fibers from synthetic textiles like nylon.

2. Secondary Microplastics: They are formed from the degradation of larger plastic items, such as bottles, fishing nets, and plastic bags. Their breakdown occurs due to environmental exposure, including sunlight radiation, wind, and ocean waves.

About Food Safety and Standards Authority of India (FSSAI)

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1. It is a statutory body established under the Food Safety and Standards Act, 2006 (FSS Act).

2. It operates independently under the jurisdiction of the Ministry of Health & Family Welfare.

3. Its primary responsibility is to protects and promotes public health by regulating and supervising food safety standards.

4. Headquarters: New Delhi

UPSC Syllabus: Environment

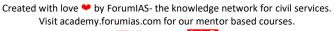## Sloth Bear

Why in News?

Scientists suggest that studying sloth bear behavior during encounters with tigers can help prevent deadly attacks across South Asia.

About Sloth Bear

Source: Smithsonian's National Zoo and Conservation Biology Institute

Aspects	Description
About	1. Sloth bears are one of the eight bear species found globally. 2. These bears have long, shaggy dark brown or black fur and curved claws, which are the longest among bear species. 3. Sloth bears are mostly nocturnal, foraging for food at night and resting in secluded locations during the day.
Habitat	Sloth bears live in a variety of dry and moist forests and tall grasslands, where boulders, scattered shrubs, and trees provide shelter.

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Distribution	They mainly inhabit regions of India, Nepal, Sri Lanka, and presumably Bhutan.
Diet	They are myrmecophagous, meaning they primarily consume bugs and termites.
Conservation effort	Daroji Sloth Bear Sanctuary in Karnataka and the Jessore Sloth Bear Sanctuary in Gujarat are dedicated sanctuary for sloth bears.
Conservation status	1. IUCN: Sloth bears are listed as Vulnerable. 2. Wildlife Protection Act, 1972: They are included in Schedule I. 3. CITES: Sloth bears are listed in Appendix I.

Miombo Forest

Why in News?

The Food and Agriculture Organization (FAO) of the United Nations and the Italian Agency for Development Cooperation (AICS) have recently signed two agreements to initiate projects focused on safeguarding the miombo forest.

About Miombo Forest

Source: Miombo woodland

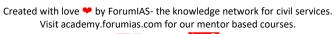| Aspects	Description
About	1. The Miombo is a biome encompassing tropical and subtropical grasslands, bushlands, and savannahs. 2. It is a vast African dryland forest ecosystem covering nearly 2.7 million square kilometres across southern Africa.

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Distribution	They are found in Angola, the Democratic Republic of Congo, Malawi, Mozambique, Tanzania, Zambia, and Zimbabwe.
Flora	The woodlands are characterized by the dominance of Brachystegia species.
Fauna	1. It is home to various mammal species, such as African elephants, lions, leopards, zebras, giraffes, and several species of antelope. 2. It also hosts numerous bird species, including the Miombo rock thrush and the African pitta.
Climate	1. The climate in the Miombo region is typically tropical, with a distinct dry season that can last for several months. 2. Rainfall is seasonal, occurring mainly during the wet season from November to April. 3. Temperatures vary widely between the hot, wet season and the cooler, dry season.
Significance	**1. Ecological:** The Miombo forest encompasses four bioregions. It plays a crucial role in maintaining the Greater Zambezi, which is one of the most important transnational river basins. **2. Economical:** The forest facilitates trade in the border region between Mozambique and Zimbabwe. **3. Social:** The Miombo forest is vital for millions of people in rural areas providing essential resources such as firewood, food, and water.
Threat	1. The Miombo Forest faces significant threats from deforestation and land degradation. 2. Climate change poses additional challenges, with increasing temperatures and changing rainfall patterns potentially altering the ecosystem's dynamics.
Conservation Efforts	1. Efforts to conserve the Miombo Forest include the establishment of protected areas, community-based natural resource management, and sustainable land use practices. 2. International and local organizations work together to promote reforestation, sustainable agriculture, and the protection of wildlife habitats. 3. Community involvement is critical to these conservation strategies.

Read more: Food and Agriculture Organization (FAO)

Ideas4LiFE Portal

Why in the news?

The Union Minister for Environment, Forest and Climate Change has recently launched the Ideas4LiFE portal at IIT Delhi.

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Source- PIB

About Ideas4LiFE Portal

Aim	It encourages and motivates students, faculty, and research scholars to contribute innovative ideas to the global initiative of Mission LiFE. It also seeks to invite ideas related to products and services that promote behavioral changes towards environmentally friendly lifestyles.
Significance	It provides a significant opportunity for inspired minds to participate in a global movement dedicated to environmental sustainability.
Themes Covered	The Ideas4LiFE Ideathon covers seven themes of Mission LiFE– 1. Save Water 2. Save Energy 3. Reduce Waste 4. Reduce E-Waste 5. Say No to Single-Use Plastics 6. Adopt Sustainable Food Systems 7. Adopt Healthy Lifestyles.

About Mission LiFE

About	It is an India led global mass movement to encourage individual and community actions to protect and preserve the environment.
Launch	It was launched at the 26th UN Climate Change Conference of the Parties (COP26) in Glasgow in November 2021.
Goal	It aims to mobilize one billion Indians and people in other countries to adopt sustainable lifestyles. It promotes the P3 model, which stands for Pro Planet People.

Read More- PM launches Mission LiFE in the presence of U.N. Secretary General

Dhangars Community

Why in News?

A large group of Dhangars marched to the subdivisional officer's office in Khamgaon, Buldhana district, Maharashtra. They demanded the establishment of a "grazing corridor" for their sheep and goats.

About Dhangars Community

Figure 1.Source: IE

1. **About:** The Dhangars are a community known for herding sheep and goats. They follow a nomadic lifestyle, moving along specific routes to graze their animals. They are part of Maharashtra's Vimukta Jati and Nomadic Tribes (VJNT) list.

2. **Where They Live:** They are primarily found in Maharashtra. Dhangars also live in Gujarat, Karnataka, and Andhra Pradesh where they are known by different names like Golla and Kuruba.

3. **Population and Economic Dependency:** The Dhangars are estimated to be around 1 crore which makes up about 9% of Maharashtra's population. About 40% of the community relies solely on herding for their livelihood underscoring the importance of their traditional grazing routes.

What Are the Dhangars Demanding?

1. **Grazing Corridors:** They are asking for "grazing corridors" to be allowed to graze their animals on traditional routes without being seen as illegal encroachers. They argue that their grazing practices benefit the land and do not harm the forests. Their traditional grazing routes are vital for their livelihood and are deeply rooted in their cultural heritage.

2. **Scheduled Tribe (ST) Status:** The Dhangars want to be classified as a Scheduled Tribe (ST) to receive reserved benefits in education and jobs which they currently do not get under their existing VJNT (Vimukta Jati and Nomadic Tribes) category.

3. **Forest Rights:** They seek rights under the Forest Rights Act, 2006 to access traditional grazing lands which currently mainly benefits those with ST status.

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UPSC Syllabus: Tribes in news

National Treasure at Fort St. George Museum, Chennai

Why in News?

As India prepares to celebrate its 78th Independence Day on August 15th. So, the Fort St. George Museum in Chennai proudly displays India's **national treasure,** which is **one of the first flags** hoisted on August 15, 1947, and the only surviving flag from that momentous day.
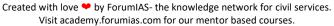
About the Historic Flag at Fort St. George Museum

Figure 2.Source: pib

1. This historic flag measures 12 feet in length and 8 feet in width, which is one of the first flags hoisted on August 15, 1947.

2. This flag serves as a significant symbol of India's struggle for independence and the moment of its victory.

3. It was crafted from pure silk.

4. It was ceremonially hoisted at 5:30 AM on August 15, 1947, at Fort St. George in Chennai.

About Fort St. George Museum

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Source: PIB

1. The Fort St. George Museum is located in Chennai, Tamil Nadu.

2. The city of Chennai originated from the British settlement at Fort St. George, which expanded by merging several native villages and European settlements, eventually forming the city of Madras.

3. The concept of creating a museum to preserve colonial-era relics was proposed in 1946 by Col. D.M. Reid of the Madras Guards.

4. The museum was officially opened to the public on January 31, 1948.

5. The museum features over 3,500 colonial-era artifacts, displayed across nine galleries that showcase the history of the Raj and the fort.

6. The Indian Independence Gallery within the museum highlights the evolution of the Indian flag, narrating the stories and significance behind the Tiranga (Tricolor).

UPSC Syllabus: Art and culture

Bagata Tribe

Why in News?

The Bagata tribal people, who worked on the Lower Sileru Hydro-Electric Project construction, continue to live in darkness as they struggle to obtain electricity.

About Bagata Tribe

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Aspects	Description
About	1. The Bagata tribe resides in the states of Odisha and Andhra Pradesh. 2. The Bagatas trace their community name to devoted warriors (Bhaktas) of the former rulers. 3. The Bagata tribes engage in farming to meet their daily needs.
Alternate Names	They are also known as Bagatha, Bagat, Bagodi, Bogad, or Bhakta.
Dance forms	Dhimsa is a popular dance enjoyed by Bagata tribes of all ages, who participate energetically. Their dances are collectively known as Sankidi Kelbar.
Family	1. Nuclear families are common within their society. 2. Cross-cousin marriage is preferred, and marriage by negotiation is considered ideal.
Language	1. They primarily speak a form of the Oriya language among themselves. 2. Telugu and Adivasi Oriya are their main languages.
Religion	They worship Hindu gods and goddesses alongside their family and tribal deities.

Article 311 of the Indian Constitution

Why in News?

The Jammu and Kashmir Lieutenant-Governor recently invoked Article 311 of the Constitution and terminated the services of six government employees.

About Article 311 of the Indian Constitution

1. Article 311 outlines the procedures and safeguards to be followed before a government employee can be dismissed, removed, or reduced in rank.

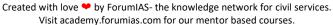2. It acts as a shield against arbitrary actions by the government and upholds the principles of natural justice.

Key Provisions

i) Opportunity to Defend: No government employee can be dismissed, removed, or reduced in rank except after an inquiry in which they have been informed of the charges against them and given a reasonable opportunity to defend themselves.

ii) Authority for Action: A civil servant can only be removed from their services by the authority who appointed them or by someone with the same authority or rank as the appointing authority.

iii) Grounds for Dismissal:

a) An employee's performance or conduct must be found unsatisfactory or detrimental to the efficient functioning of the government.

b) An employee involved in corruption, bribery, fraud, or any other offense involving moral turpitude can be dismissed.

Procedure for Disciplinary Action

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i) The competent authority must clearly state the allegations and grounds for disciplinary action.

ii) The employee must be given a reasonable opportunity to respond to the charges and present their defense.

iii) An impartial inquiry should be conducted by a competent authority, allowing the employee to present their case and cross-examine witnesses or evidence.

iv) A report should be prepared after the inquiry, taking into account all evidence and submissions made during the inquiry.

v) The competent authority should make a reasoned decision based on the inquiry report and communicate it to the employee. The decision must be reasonable, fair, and in accordance with the principles of natural justice.

 Exceptions to Article 311

i) Security of the State: If the employee's activities are deemed prejudicial to the security of the State, the President or the Governor can dispense with the inquiry and take immediate action.

ii) Efficiency in Public Service: If the President or the Governor believes it is in the interest of security or efficiency of public service, they can dispense with the inquiry and take appropriate action.

iii) Probationary Employees: Probationary employees, who have not yet acquired the right to hold a permanent position, can be dismissed or removed without an inquiry.

iv) Judicial Review: Article 311 provides for judicial review of decisions made under its provisions. Remedies may include reinstatement, back wages, or any other relief deemed appropriate by the court.
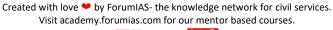
UPSC Syllabus: Polity and nation

National Commission of Minorities(NCM)

Why in News?

The National Commission for Minorities (NCM) has requested a report from State Chief Secretary Sujata Saunik regarding the Vishalgad violence.

About National Commission of Minorities(NCM)

Aspects	Description
About	1. National Commission for Minorities (NCM) is a statutory body set up in 1993 under the National Commission for Minorities(NCM) Act, 1992. 2. Section 2 of the NCM Act stipulates that 'Minority' for the purposes of the Act means a community notified as such by the Central Government. 3. Initially, five religious communities namely Muslims, Christians, Sikhs, Buddhists, and Zoroastrians(Parsis) were notified as minority communities. In 2014, Jains were also notified as another minority community.
Composition	**1. The Commission consists of:** Chairperson, Vice- Chairperson, and five Members. 2. A total of 7 persons are to be nominated by the Central Government from amongst

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	persons of eminence, ability, and integrity. 3. Each member holds office for a period of three years from the date of assumption of office.
Judicial Power	The judicial powers of the National Commission for Scheduled Castes (NCSC) under Article 338 (8) and the National Commission for Scheduled Tribes (NCST) under Article 338A (8) of the Constitution of India (i) Summoning and enforcing the attendance of any person from any part of India and examining him on oath; (ii) Requiring the discovery and production of any documents; (iii) Receiving evidence on affidavits; (iv) Requisitioning any public record or copy thereof from any court or office; (v) Issuing commissions for the examination of witnesses and documents; (vi) Any other matter which the President may by rule determine".

Functions of NCM:

1. Evaluate the progress of the development of minorities under the Union and States and monitor the working of the safeguards provided in the Constitution and in laws enacted by Parliament and the State Legislatures.

2. Make recommendations for the effective implementation of safeguards for the protection of the interests of minorities by the Central Government or the State Governments.

3. Look into specific complaints regarding deprivation of rights and safeguards of the minorities and recommend measures for the removal of problems arising out of any discrimination against minorities.

4. Conduct studies, research, and analysis on the issues relating to the socio-economic and educational development of minorities and suggest appropriate measures in respect of any minority to be undertaken by the Central Government or the State Governments.
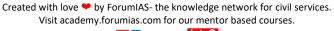

Substantive Equality

Why in News?

The Supreme Court's landmark verdict on sub-classification of the Scheduled Caste (SC) and Scheduled Tribe (ST) quota marked a milestone for equality jurisprudence. Chief Justice of India (CJI) D Y Chandrachud emphasized "substantive equality".

About Substantive Equality

1. Substantive equality is a principle that seeks to achieve genuine equality by recognizing and addressing the different needs, circumstances, and historical disadvantages of various groups in society.

2. Unlike formal equality, which treats everyone the same regardless of their background, substantive equality aims to create fair outcomes by considering these differences.

Key Concepts of Substantive Equality

1. Historical Context and Disadvantages: Substantive equality acknowledges that certain groups have faced long-standing disadvantages and discrimination. These historical injustices impact their current opportunities and outcomes.

2. Different Treatment for Fair Outcomes: To achieve fairness, different groups may need to be treated differently. This means implementing measures that specifically address the unique challenges faced by disadvantaged groups.

3. Beyond Formal Equality: Substantive equality ensures that policies and laws do not just provide equal treatment but also result in equal opportunities and outcomes.

4. Addressing Systemic Inequalities: Substantive equality involves identifying and dismantling systemic barriers that perpetuate inequality. This could include legal, social, economic, and cultural structures that disadvantage certain groups.
Policies under substantive equality aim to reform these structures to promote inclusive and equitable development.

Examples of Substantive Equality in Practice

1. **Affirmative action policies**, such as reservations in education and employment, are practical applications of substantive equality. These policies ensure that marginalized groups have a fair chance to succeed and overcome historical disadvantages.

2. **Social programs** that target specific needs of disadvantaged groups, such as scholarships for students from low-income families or healthcare initiatives for rural populations, embody substantive equality.

3. **Legal reforms** that protect the rights of marginalized groups and promote their inclusion in society are crucial for substantive equality. Anti-discrimination laws, labor rights for informal workers, and land rights for indigenous communities are examples of legal measures that promote substantive equality.

The Importance of Substantive Equality

1. Promotes Inclusive Growth: By addressing the specific needs and challenges of disadvantaged groups, substantive equality fosters inclusive growth and development. It ensures that everyone has the opportunity to contribute to and benefit from economic and social progress.

2. Reduces Social Inequities: Substantive equality helps reduce social inequities by creating fair opportunities for all. It combats discrimination and promotes social justice, leading to a more cohesive and equitable society.

3. Strengthens Democracy: A society that values substantive equality is more likely to have strong democratic institutions. When all individuals have equal opportunities and are treated fairly, it enhances their participation in the democratic process and strengthens governance.

QCI Surajya Recognition and Ranking Framework

Why in News?

The Quality Council of India (QCI) has recently launched the QCI Surajya Recognition & Ranking Framework.

About QCI Surajya Recognition & Ranking Framework

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Aspects	Description
About	The Quality Council of India (QCI) Surajya Recognition & Ranking Framework is an initiative aimed at promoting excellence in governance across various domains.
Objective	Drive excellence among states to improve citizens' quality of life for a Viksit Bharat.
Aim	i) It emphasized the collective synergy of states as the driving force behind creating a Viksit Bharat. ii) The Surajya initiative aims to promote high standards and best practices in key sectors of India. iii) It celebrates states' commitment to quality and continuous improvement.
Framework Pillars	Shiksha (Education), Swasthya (Health), Samriddhi (Prosperity), and Sushasan (Governance).

Focus of the Initiative

1. Shiksha (Education):

i) It enhances education quality through robust accreditation and certification.

ii) Uttar Pradesh leads with the highest number of accreditations, assessments, and ratings. Delhi ranks prominently among union territories.
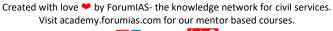
2. Swasthya (Health):

i) Guaranteeing superior healthcare services and maintaining high medical care standards.

ii) States excelling in Ayushman Arogya Yojana (NABH) certifications: Chhattisgarh, Karnataka, Kerala, Rajasthan, Mizoram, and Manipur.

iii) Tamil Nadu and Maharashtra lead in Medical Entry Level Testing Labs (MELT) rankings (NABL).

iv) Chandigarh (100% certification in Ayushman Arogya Yojana) and Jammu & Kashmir (71.43% certification rate) perform well among union territories. Delhi excels in MELT, followed by Jammu & Kashmir.

3. Samriddhi (Prosperity):

i) Driving economic prosperity through quality assurance in manufacturing and industrial practices.

ii) Leading states in ZED certifications: Gujarat, Karnataka, and Rajasthan. Jammu & Kashmir and Delhi achieve significant ZED certifications.

iii) Top performers in the MSME Competitive LEAN Scheme: Maharashtra and Bihar.

4. Sushasan (Governance):

i) It ensures transparent, accountable, and responsive governance.

ii) The Sushasan category to be featured in future editions of the rankings.

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UPSC Syllabus: Governance

Finance Bill 2024

Why in News?

The Finance Bill, 2024, was passed in the Lok Sabha with an amendment relaxing the long-term capital gains (LTCG) tax proposal on real estate. The amendment allows taxpayers to choose between a new lower tax rate or the old regime with an indexation benefit.

About the Amendment:

1. Individuals or Hindu Undivided Families (HUFs) who bought houses before July 23, 2024, can opt for:

i) Paying LTCG tax under the new scheme at 12.5% without indexation,
or
ii) Claiming the indexation benefit and paying 20% tax.

Other Measures taken to aid the Middle class in the Finance Bill 2024

i) Reduction in customs duty on various goods to promote trade, investment, and employment.

ii) Increase in the tax exemption limit on LTCG in listed equities and bonds from ₹1 lakh to ₹1.25 lakh.

iii) Simplification of tax governance and reduction in tax slabs in 2023 and this year.

iv) Increase in the standard deduction for the salaried class.

About LTCG Tax

1. Long-Term Capital Gains (LTCG) tax is a tax levied on the profits earned from the sale of certain assets held for a specified period, which is considered long-term.

2. The nature and rate of LTCG tax vary depending on the type of asset and the jurisdiction in which the asset is located or sold.

3. The definition of long-term assets varies based on the type of asset:

i) Equity Shares/Mutual Funds: Assets held for more than 12 months.

ii) Immovable Property (e.g., land, buildings): Assets held for more than 24 months.

iii) Other Assets: Generally, assets held for more than 36 months.

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UPSC Syllabus: Indian economy

"VIRAASAT" Exhibition

Why in News?

Recently, "VIRAASAT" exhibition was held at Handloom Haat in Janpath on 3rd August, 2024.

About "VIRAASAT" Exhibition

Figure 3.Source: PIB

1. About: "VIRAASAT" is a fortnight-long exhibition dedicated to celebrating the 10th National Handloom Day, began at Handloom Haat in Janpath, New Delhi, on Saturday, 3rd August 2024.

2. Organised by: The event was organized by the National Handloom Development Corporation Ltd (NHDC) under the aegis of the Ministry of Textiles, Government of India, will conclude on 16th August 2024.

3. Purpose and Focus: The exhibition aims to celebrate the rich tradition of handloom and handicrafts in India and to provide a platform for handloom weavers and artisans to connect with buyers.

4. The exhibition features popular handloom varieties such as Banarasi, Jamdani, Baluchari, Madhubani, Kosa, Ikkat, Patola, Tussar Silk, Maheshwari, Moirang Phee, Phulkari, Laheriya, Khandua, and Tangaliya. These products attract customers worldwide with their exclusive weaves, designs, and traditional motifs.

5. Historical Context: The Swadeshi Movement was launched on 7th August 1905, promoted indigenous industries, particularly handloom weaving. Since 2015, the Government of India has commemorated 7th August every year as National Handloom Day to honor this tradition.

6. Significance of National Handloom Day: The first National Handloom Day was celebrated on 7th August 2015 by Prime Minister Narendra Modi in Chennai. This day highlights the socio-economic contribution of the handloom sector and reaffirms the Government's resolve to protect handloom heritage and empower weavers with better opportunities.

Handloom Sector in India

i) The handloom sector directly or indirectly employs 35 lakh people, making it the second-largest employment sector in India after agriculture.

ii) This sector represents India's rich and diverse cultural heritage, with traditional values and unique regional varieties.

iii) Government Initiatives: The Government of India has launched various schemes to brand high-quality handloom products with zero defects and zero environmental impact.

These initiatives ensure the products are genuinely handcrafted and provide a guarantee for buyers.

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