UPSC Daily Current Affairs| Prelim Bits 14-03-2025

Unified Pension Scheme

Why in News?

The central government is bringing UPS (Unified Pension Scheme) instead of NPS (National Pension System) for employees.

- **Aim** – UPS is a fund-based payout system that ensures government employees receive an ***assured payout*** after retirement.
- It relies on the regular and timely accumulation of contributions from both the employee and the Central Government, which are invested to provide a monthly payout to the retiree.
- **To be implemented from -** April 1, 2025.
- **Eligibility -** It is available to those ***central government employees*** who are already enrolled in the NPS and have opted for this new scheme.
- **Contributions**

Old Pension Scheme	National Pension System	Unified Pension Scheme
It offered a defined benefit pension of 50% of the last drawn salary, *fully funded by the government* without requiring contributions from employees.	Employees contribute 10% of their basic pay and DA, and the government contributes 14%.	Employees will now contribute ***10% of their salary to their pension***, just like the NPS, with the government contributing 18.5%.

- **Features –** The following are the features of UPS,
- **Guaranteed pension -** Pensioners will receive 50% of their average basic pay (from the last 12 months before retirement) as a pension, provided they have completed at least 25 years of service.
- Those with a shorter service period (minimum 10 years) will receive a proportionate pension.
- **Family pension -** In case of the employee's death, the surviving spouse will receive 60% of the pension amount that the employee was receiving before death.
- **Minimum pension guarantee -** The UPS guarantees a minimum pension of Rs 10,000 to those who retire after serving at least 10 years.
- **Inflation protection -** The pension amount will be adjusted for inflation, just like Dearness Relief (DR) for serving employees, based on the All India Consumer Price Index for Industrial Workers (AICPIN-IW).
- **Lump sum payment at retirement -** Upon retirement, employees will receive a one-time lump sum in addition to their gratuity.
- This amount will be 1/10th of their last drawn monthly salary (Basic Pay + DA) for every six months of completed service. This benefit will not impact the assured pension

amount.
- The state governments ***can also adopt*** and implement the UPS scheme for state government employees. ***Maharashtra*** is the first state to implement UPS.

National Pension System will also remain available for those who do not want to switch to the UPS.

References

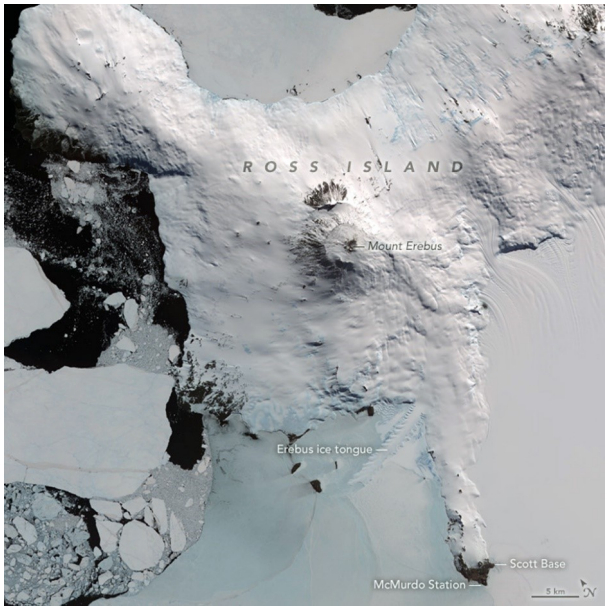
1. India Today | Unified Pension Scheme (UPS)
2. Times Bull | Unified Pension Scheme

Mount Erebus

Why in News?

Scientists discovered that Mount Erebus is the only known volcano to release metallic gold in solid form.

- It is Antarctica's southernmost active volcano located on ***Ross Island***, towering 12,448 feet above the icy landscape.
- **Nomenclature** - Mount Erebus was named after the Greek god Erebus, the deity of darkness, by Sir James Clark Ross, a British explorer who discovered the volcano during his Antarctic expedition in 1841.
- It is the ***2nd tallest*** volcano in Antarctica, after Mount Sidley.
- **Type -** It is a glaciated intraplate stratovolcano, part of the ***Pacific Ring of Fire.***
- The inner crater of the volcano holds the lava lake.
- The lake has been continuously active since at least 1972, releasing gases and steam.
- Sometimes the lake produces explosions, called ***Strombolian eruptions***, that eject magma and pyroclastic rocks.
- The volcano also possesses an inactive side crater.
- **Last eruption –** 2025
- **Gold Emission –** It emits micro-crystals of gold. These particles, as small as 20 micrometers, are carried by volcanic gas and have been detected over 600 miles away.
- Daily emissions amount to around 80 grams, valued at $6,000 (roughly Rs 5 lakh), produces about 64 pounds of gold annually, valued at around $2 million.
- **Crystallization in Extreme Cold -** When the magma reaches the surface, the freezing temperatures of Antarctica cause the gold to solidify instead of remaining in gas or liquid form.
- Mining this gold is *too dangerous* due to the volcano's unpredictable eruptions.
- It is home to a colony of approximately 500,000 *Adelie penguins*.
- It lies within the sight of the ***McMurdo Station***, a research station of United States.
- Because of the remote location, activity is primarily monitored by satellites.



Adelie Penguins
• **Scientific name-** Pygoscelis adeliae. • **Discovered in -** 1840 by scientists on the French Antarctic expedition led by explorer Jules Dumont d'Urville. • **Size -** They are medium sized penguins, weighing 3 to 6 kg and standing 70 cm tall. • **Appearance -** They are distinguished by the white ring surrounding the eye. Males and females are of similar size and difficult to tell apart. • **Breeding** - Adélies are excellent swimmers. They breed around the entire Antarctic coast and small islands in places where there is exposed rock. • **Diet -** Local meals (those within 20 km of the colony) consist mostly of fish, amphipods and 'crystal krill' (Euphausia crystallorophias), - While offshore meals consist of mainly 'Antarctic krill' (Euphausia superba). • Some Adélie penguins are capable of diving to depths of ***up to 175 m*** but usually feed within the upper 70 m of the water column.

Reference

Economic Times | Volcano of Riches

Related News - Britanicca | Mount-Erebus

Cancer and its Government Initiatives

Why in news?

Indian Council of Medical Research (ICMR)'s recent study found that people living near river drains face high cancer risk, with hazard quotients like Lead, iron, and aluminium exceeding Central Pollution Control Board's safe limits.

- Cancer is a disease in which some of the ***body's cells grow uncontrollably*** and spread to other parts of the body.

- **Types of Cancer**
  - **Carcinoma**- Most common cancer, forms in epithelial cells (e.g., Lung Cancer).
  - **Sarcoma**- Cancer in bone & soft tissues (e.g., Ewing's Sarcoma).
  - **Leukemia**- Cancer in blood-forming tissue, excess abnormal WBCs (Acute Myeloid Leukemia).
  - **Lymphoma**- Cancer in lymphocytes (immune cells) (Burkitt's Lymphoma).
  - **Multiple Myeloma**-Cancer in plasma cells, forming bone tumors (Smoldering Myeloma).
  - **Melanoma**-Cancer in melanocytes, affects skin & eyes (Cutaneous Melanoma).
- **Common cancers -** Breast cancer, prostate cancer, lung cancer, colorectal cancer, and skin cancer.
- **Staging**
  - **Stage I-III** -Cancer that has grown into nearby tissue or lymph nodes
  - **Stage IV** - Cancer that has spread to distant parts of the body

Steps taken for the treatment of cancer

1. **Tertiary Care Cancer facilities scheme**

- Significant effort to boost cancer care infrastructure in India.
- **Launched in -** 2013-14
- It is launched under the National Programme for Prevention and Control of Cancer, Diabetes, CVD and Stroke (NPCDCS).
- **Nodal Ministry** – Ministry of Health and Family Welfare
- **Funding** – Centrally sponsored scheme.
- The scheme provides financial assistance to set up State Cancer Institutes (SCIs) and Tertiary Care Cancer Centres (TCCCs).
- The maximum permissible assistance for SCI is Rs. 120 crores and for TCCC is Rs. 45 crores, which includes State share of 40%, except for North-Eastern and Himalayan States where the State share is 10%
- **Objectives**
  - To improve access to high-quality cancer care.
  - To strengthen the network of tertiary cancer care facilities.
  - To reduce the financial burden on patients.

2. **Pradhan Mantri Jan Arogya Yojana (AB PMJAY)**

- Cancer treatment is also covered under the Ayushman Bharat–Pradhan Mantri Jan Arogya Yojana (AB PMJAY)
- PM-JAY extended health coverage to all senior citizens aged 70 and above, regardless of income.
- It includes packages encompassing procedures related to Medical Oncology, Surgical Oncology, Radiation Oncology, and Palliative Medicine within the National Health Benefit Package (HBP).

3. **Pradhan Mantri Bhartiya Janaushadhi Pariyojana (PMBJP)**

- To further support cancer treatment, PMBJP has been launched to establish dedicated outlets known as Pradhan Mantri Bhartiya Janaushadhi Kendras (PMBJKs).

4. **Affordable Medicines and Reliable Implants for Treatment (AMRIT) initiative**

- **Launched by -** Health Ministry
- **Aim -** To provide affordable medicines for cancer, cardiovascular diseases, and other health conditions.

References

1. The Hindu | Elevated risk of developing cancer

Related News - National Cancer institute| Cancer and its types

Climate Change and Circling Trash

Why in news?

Researchers at the Massachusetts Institute of Technology in a new study finds that Climate change will soon be making a mess in orbit around the planet.

- **Global Warming** – Burning of coal, oil and gas reduce the space available for satellites in the ***Low Earth orbit (LEO).***
- By the end of the century almost *82% of the space* will be reduced because of carbon emissions.
- **Greenhouse Effect** – Along with warming of air near earth's surface it simultaneously *cools the upper parts of the atmosphere*.
- This makes the upper atmosphere *less dense* which reduces the drags of the debris present.
- **Atmospheric Drag** – *Known as Air resistance*, this drag pulls the space junks down to the earth by burning it.
- But having reduced drag effect makes less space cleaning making the atmosphere more crowded with satellites and space debris.
- **Natural cleaner** – Atmosphere is the natural cleaner to clean up the debris as there is no other way as there are million pieces of it.
- **Circling Trash** – According to the Aerospace Corporation, circling earth is home to millions of space debris which travels at the speed of a bullet and has the power of a crashing bus.
- **Satellites Records** - According to the tracking website orbit.ing-now.com, there are *11,905 satellites circling Earth, 7,356* in the LEO.
- **Decreasing Density** - The density at *250 miles (400 kilometers)* above Earth is decreasing by *about 2% a decade* and is likely to get intensify because of the Greenhouse Gas Effect, according to British Antarctic Survey.
- **NASA Records –** Shows that there is measurable reduction of drag, realizing climate change component is really important.

Reference

The Hindu | Climate change and Circling debris

Ariosoma Tamilicum

Why in News?

The National Bureau of Fish Genetic Resources (NBFGR) has identified the 14th eel species from the Indian coast.

- It is a *new species of Congrid eel* discovered off Thoothukudi coast, Tamil Nadu.
- **Genus** – Ariosoma.
- ***Nomenclature*** – It was named tamilicum, with reference to the world's oldest language, Tamil.
- **Uniqueness** - The new species presented with dorsal surface of head with single whitish band across anterior eye margin.
- The ventral portion of lower jaw had tiny dark pigmentation patches, forming a dark line along the isthmus.
- It had long, vomerine teeth patch, reaching half the length of maxillary, and possessed 120-129 total vertebrae.
- **Size -** It grows up to 30 centimetres in length.
- **Divergence** - It is morphologically closely related to *Ariosoma emmae* from the Taiwan waters but exhibits 13.4% genetic divergence in mitochondrial CO1 gene sequences.
- It is *non-toxic* and is commonly used as poultry feed.
- These eels are *benthic dwellers*, living at the bottom of the sea.
- **Consumption** - If the protein level is comparable to other edible fish, it could be suggested that they be commercialized for consumption.



Reference

The Hindu | Tamilicum

Immigration and Foreigners Bill, 2025

Why in news?

Minister of Home Affairs is poised to present the Immigration & Foreigners Bill, 2025 in the upcoming 2nd phase of the Budget session.

- **Aim** – To streamline and update India's immigration system by abolishing 4 current laws.
- It simplifies a range of services concerning immigration and foreign nationals, including their arrival, departure, and residency in the nation.
- **Revocation of 4 current statutes –** Regulating immigration & foreign national services such as:
    1. The Passport (Entry into India) Act of 1920
    2. The Foreigners Act of 1946
    3. The Registration of Foreigners Act of 1939
    4. The Immigration (Carriers' Liability) Act of 2000
- **Key provisions of the bill:**

- **Bureau of Immigration** – It will be in charge of *regulating the entry and exit of foreigners* along with any other functions that the Centre prescribes.
- It is headed by a ***chairman*** and is assisted by other officers.
- **Restrictions on Foreigners –** Foreign nationals may be denied entry if considered a risk to national security, sovereignty, public health or international relations.
- Decisions made by ***Immigration Officials*** will be *final and binding*.
- **New Regulatory Powers of central government** – The bill empower the Central government to issue orders on the following:
    - *Specific entry and departure points* for foreigners upon arrival.
    - Prohibit a foreigner from remaining in India.
    - Require the foreigner to stay in a specified area or residence in India.
    - Require the foreigner to present themselves for examination, provide necessary information, submit proof of identity, biometric data and undergo a medical examination.
    - Prohibit association with specified persons, engagement in specified activities and possession or use of specified articles.
- Universities, educational institutions must provide information to the Government when admitting foreigners.
- **Penal provisions** – Punishes foreigners who:
    - **Overstay** – Up to 3 years and or Rs 3 lakh fine.
    - **Enter without valid documents** – Up to 5 years and or Rs 5 lakh fine.
    - **Using forged travel documents** – 2-7 years and or Rs 1-10 lakh fine.

A carrier has been defined as a person or entity engaged in the business of transporting passengers or cargo by air, water or land by aircraft or ship or any other mode of transport.

- **Restrictions on carriers** – Under Section 17, carriers entering or leaving India are required to share information with an *immigration officer or with a District Magistrate/Police Commissioner* when asked.

References

1. The Indian Express | Immigration and Foreigners Bill, 2025
2. Economic Times | Immigration and Foreigners Bill, 2025

Prelim Facts 13-03-2025

Geography

India's Gully Erosion Crisis

• **Widespread Impact -** Plagues 77 Indian districts, primarily in the east and south, aligning with UN goals to combat land degradation by 2030.
• **Findings** - align with the UN agenda to combat land degradation by 2030
• **Defining Gully Erosion:** Soil is removed by surface water runoff, forming deep gullies, severely impacting land productivity and contributing to overall land degradation.
• **Significant Consequences -** Reduces agricultural output, induces water stress and droughts, and forces village migrations, creating badlands hindering farming and causing ecological imbalances.
• **Geographic Concentration -** Eastern India, notably Jharkhand & Chhattisgarh, experiences the highest gully erosion rates, while western India has more badlands.

Polity & Governance

The Assam Healing (Prevention of Evil) Practices Act, 2024 Passed.

• **Legislative Intent -** Seeks to eradicate non-scientific healing methods, protecting citizens from exploitation and promoting public health.
• **Defining "Evil Practices -** The Act broadly defines "evil practices" as exploitative healing methods, encompassing diverse traditional and religious healing forms, including certain aspects of Ayurveda.
• **Potential for Overreach -** The wide definition of "evil practices" raises concerns, as it could potentially criminalize established cultural and traditional healing practices.
• **Impact on Traditional Healing -** The law's broad scope may negatively impact practices integral to various communities, potentially undermining cultural heritage and traditional knowledge.

Maharashtra's Media Monitoring Centre

Recently, Maharashtra establishes a Media Monitoring Centre under Directorate of Information and Public Relations (DIPR) to analyze media reports across print, electronic, and social platforms.
• **Aims** - To monitor media coverage of government policies, categorize reports as positive, neutral, or negative, and track public sentiment to improve citizen communication.
• **Key Functions** - Daily PDF clippings, media trend monitoring, and sentiment tracking are core functions. Data analysis will generate detailed public opinion reports.
• **Data Analysis and Reporting** - The centre will conduct in-depth data analysis to produce comprehensive reports on public sentiment and reactions to government initiatives.

International Relations and Issues

Global Maternal Mortality Crisis: 2020 Statistics

• **Report reveals a devastating reality** - 287,000 women died from preventable pregnancy-related causes, equating to roughly 800 deaths daily, underscoring a critical global health emergency.
• **Primary Drivers of Maternal Death-** Haemorrhage & hypertensive disorders emerge as the leading causes, demanding targeted interventions.
• **Haemorrhage -** Accounting for 27% of maternal deaths, it often occurs during or following childbirth.
• **Hypertensive Disorders -** Contributing 16%, these conditions, including pre-eclampsia.
• **Regional Disparities -** Sub-Saharan Africa and Western Asia exhibit the highest maternal mortality rates.

PM Modi Receives Mauritius' Highest Honour

PM Modi received the Grand Commander of the Order of the Star and Key of the Indian Ocean from Mauritius, marking his 21st accolade.
• **Nature of Award** - Highest civilian honour in Mauritius.
• **Purpose** – PM Modi's contributions to strengthening bilateral relations.
• **Significance** – The Awards is Mauritius' most distinguished recognition.
• Since Mauritius became a Republic, only 5 foreign dignitaries have been awarded the prestigious honor, with Nelson Mandela being one of them.

Alawites

New Syrian regime rise in December 2024 led to violence targets Alawite community, historically aligned with Basar-al- Assad.
• **Alawites**: A Religious Minority in Syria.
• **Constitutes -** 12% of the population.
• **Sect –** Shia Islam.
• **Originated -** In 9th and 10th centuries, influenced by Mohammad ibn Nusayr's teachings.
• **Beliefs** – use of wine and reincarnation belief.

Environment

World Air Quality Report 2024

• **Released by -** Swiss organisation IQAir
• **Key Findings**
• **Global Pollution -** Only 17% of cities in 7 countries meet WHO air quality guidelines.
• **Cleanest 7 Countries** - Are Australia, Bahamas, Barbados, Estonia, Grenada, Iceland & New Zealand they met WHO annual average PM2.5 guideline of 5 µg/m3.
• **91.3% of countries exceed WHO's PM2.5 limit such as**:-
• Chad, Bangladesh, Pakistan, Democratic Republic of the Congo , and India.
• Central & South Asia has the most polluted cities.
• **In India** - Byrnihat, (Assam-Meghalaya border) is the most polluted metropolitan area.
• Delhi remains the most polluted capital city.

Tropic's Engineered Banana: Fighting Food Waste

Recently, the UK-based biotech company Tropic introduced a genetically-engineered banana that resists browning.

• **Innovation Against Spoilage** - Tropic's genetically-engineered banana resists browning, addressing the 50% annual banana waste and its environmental impact.

• **Ripening and Browning Process** - Ethylene, a natural hormone, triggers (Produce Polyphenol Oxidase) PPO production, leading to browning when PPO reacts with oxygen. Bruising accelerates this process.

• **Genetic Modification for Preservation** - Tropic silences the PPO-producing gene, preserving the fruit's appearance without halting ripening, similar to Arctic apples.

• **Environmental Impact of Banana Waste** - The UK discards 1.4 million edible bananas daily, contributing to greenhouse gas emissions. Non-browning bananas could increase consumption of older fruit, reducing waste.

Dr. Jayshree Vencatesan Receives Ramsar Award for 'Wetland Wise Use'

• **Dr. Jayshree Vencatesan** - co-founder of Care Earth Trust,

• **Features of Award** - It recognizing exceptional contributions to sustainable wetland management, was announced on International Women's Day.

• The Ramsar Awards celebrate individuals and organizations dedicated to wetlands' sustainable management.

• Categories include 'wise use of wetlands', 'innovation', and 'influencing policy'.

Security

China's Yunnan Radar

China's deployment of a Large Phased Array Radar (LPAR) in Yunnan, near Myanmar, significantly boosts China's surveillance capabilities.

• **Range** - Exceeding 5,000km.

• **Features** - Its advanced technology allows for rapid scanning and precise tracking of multiple targets, including ballistic missile launches.

• **Objective**- Monitoring the Indian Ocean & Indian Territory, including crucial missile testing sites like Dr APJ Abdul Kalam Island.

• **Challenges for India** - Monitoring of India's missile tests, posing a significant threat to national security & missile development program.

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