

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

Blue Ghost Mission 1

Why in News?

Firefly Aerospace, U.S. Company successfully landed its spacecraft on the Moon recently.

- It is the **second private mission** to make a soft lunar landing.
- It is Nicknamed '**Ghost Riders in the Sky**'.
- **Aim** - To land for a site near **Mons Latreille**, a volcanic feature in Mare Crisium on the Moon's northeastern near side.

Mare Crisium, once an ancient asteroid impact site, formed around 3 billion years ago when volcanic eruptions filled the basin with basaltic lava.

- **Launch Vehicle** - SpaceX Falcon 9 rocket.
- **Size** - 2 metres tall and 3.5 meters wide.
- **Instruments** - It carries 10 instruments, including
 - A lunar soil analyzer,
 - A radiation-tolerant computer and
 - An experiment testing the feasibility of using the existing global satellite navigation system to navigate the moon.
- It is engineered for stability with shock-absorbing feet, a low centre of mass, and a broad footprint. It incorporated flight-proven technologies.
- Its Reaction Control System (RCS) thrusters fired as needed, ensuring a controlled and smooth landing.
- **Functions** - It will operate its payloads for a full lunar day (14 Earth days).
- On March 14, it will capture high-definition images of a total eclipse, where Earth blocked sunlight from reaching the Moon.
- On March 16, it will record the lunar sunset, gathering data on how solar activity causes lunar dust to levitate, a phenomenon first observed by **Apollo 17 astronaut Eugene Cernan**.
- As part of **NASA's Commercial Lunar Payload Services (CLPS)** initiative, Blue Ghost Mission 1 delivered 10 scientific and technological instruments to the lunar surface.
- **Scientific contributions** - Blue Ghost's payloads will contribute to lunar research through groundbreaking experiments, including
 - Testing regolith collection,
 - Global navigation satellite system capabilities,
 - Radiation-resistant computing, and
 - Lunar dust mitigation.

Commercial Lunar Payload Services (CLPS) program

- It is a collaboration with commercial companies to deliver science and technology to the Moon.
- **Agency** - National Aeronautics and Space Administration (NASA).
- The program is intended to support NASA's Artemis lunar program.
- **Functions** - NASA contracts with companies to deliver payloads to the Moon.
- Companies bid on the services, including launching, landing, and payload integration.
- The contracts are indefinite delivery, indefinite quantity contracts.

References

1. [The Hindu | Blue Ghost Mission 1](#)
2. [Hindustan Times | 'Ghost Riders in the Sky'](#)

Chairman of Securities and Exchange Board of India (SEBI)

Why in News?

Union government has recently appointed Finance and Revenue Secretary Tuhin Kanta Pandey as the new chairman of the Securities and Exchange Board of India (SEBI) for 3 years.

- **Appointed by** - The government via notification from the Appointments Committee of the Cabinet (ACC).
- **Age limit** - 65 Years.
- **Term** - The Chairman shall hold office for **5 years**, as many be specified in the order of his appointment.
- **Appointed under** - Securities and Exchange Board of India (Terms and Conditions of Service of Chairman and Members) Rules, 1992.
- **Appointments committee** - Financial Sector Regulatory Appointments Search Committee consists
 - Cabinet Secretary - Chairman
 - Additional Principal Secretary to the Prime Minister - Member
 - Secretary, Department of Economic Affairs - Member
 - Three outside experts of repute in the fields of Finance, Economics, Law, Public Administration, Financial Markets and related subjects maintained by it - Member.
- **Pay** - Chairman shall have the option to receive pay as admissible to a Secretary to the Government of India.
- **Entitlement to PF** - The Chairman or a whole-time Member shall be entitled to subscribe to the General Provident Fund.
- The Chairman shall **not accept** any employment before the expiry of a period of 1 year from the date of demitting the office in SEBI, except with the previous sanction of the Central Government.
- The Central Government **shall have power** to relax the provisions of any of these rules with respect to any class or category of persons.

Securities and Exchange Board of India (SEBI)

- It is a **statutory body** and a market regulator, which controls the securities market in India.
- **Aim** - To protect the interests of investors in securities and to promote and regulate the securities market.
- **Board** - SEBI is run by its board of members.
- The board consists of
 - A Chairman and
 - 2 members from the finance ministry,
 - 1 member from Reserve Bank of India and
 - 5 other members are also nominated by the Centre.
- **Headquarters** - Mumbai.
- **Regional offices** - Ahmedabad, Kolkata, Chennai and Delhi.

References

1. [Business Standard | New SEBI chairman](#)
2. [The Hindu | SEBI Chairman](#)

Geological Survey of India

Why in News?

Geological Survey of India (GSI), one of the nation's oldest and prestigious scientific institutions, hosted a 'Grand Walkathon' themed 'Geoscience for a safe world' recently as part of its 175th anniversary celebrations.

- It is a **repository of geological information** required in various fields in the India.
- It has also attained the status of a geo-scientific organisations of international repute.
- **Founded in** - 1851.
- It was primarily established to explore coal deposits for the railways.
- **Nodal Ministry** - At present, the Geological Survey of India is an attached office of the Ministry of Mines.
- **Headquarters** - Kolkata.
- **Regional offices** - Lucknow, Jaipur, Nagpur, Hyderabad, Shillong and Kolkata and state unit offices in almost all the states of the country.
- **Functions** - Its main functions relate to creating and updating of national geoscientific information and mineral resource assessment.
- Objectives achieved through ground surveys, air-borne and marine surveys, mineral prospecting and investigations, multi-disciplinary geological, geotechnical, geo-environmental, natural hazards studies.
- It is also by glaciology, seismological studies, and fundamental research.
- It provides impartial and up-to-date geological expertise and geoscientific information of all kinds, with a focus on policy making decisions, commercial and socio-economic needs.
- GSI also emphasises on systematic documentation of all geological processes, both surface and subsurface, of India and its offshore areas.

- The organisation carries out this work through geological, geophysical, & geochemical surveys using the latest and most cost-effective techniques and methodologies.
- GSI's core competence in survey and mapping is continuously enhanced through accretion, management, coordination and utilization of spatial databases.
- It functions as a 'Repository' for the purpose and uses the latest computer-based technologies for dissemination of geoscientific information and spatial data.

Reference

[The Hindu | Geological Survey of India \(GSI\)](#)

Maple Syrup Urine Disease (MSUD)

Why in News?

Scientists have created a new gene therapy for a debilitating genetic disorder called maple syrup urine disease (MSUD).

- **Recent Findings** - The treatment can prevent recurrence of deadly symptoms in a cow calf born with the disease.
- It prevented newborn death, normalized growth, restored coordinated expression of the affected genes and stabilized biomarkers in a calf as well as in mice.
- **Maple syrup urine disease (MSUD)** - It is a ***rare genetic disorder*** characterized by deficiency of an enzyme complex (branched-chain alpha-keto acid dehydrogenase).
- Branched-chain alpha-keto acid dehydrogenase is required to break down (metabolize) the 3 branched-chain amino acids (BCAAs) leucine, isoleucine and valine, in the body.
- The result of this metabolic failure is that all 3 BCAAs, along with a number of their toxic byproducts, (specifically their respective organic acids), all accumulate abnormally.
- In the classic, severe form of MSUD, plasma concentrations of the BCAAs begin to rise within a few hours of birth.
- If untreated, symptoms begin to emerge, often within the first 24-48 hours of life.
- **Types** - The classic type, intermediate type, intermittent type and possibly a thiamine-responsive type.
- **Cause** - When a mutated form of the BCKDHA, BCKDHB or DBT gene is inherited from both parents.
- **Symptoms** - Non-specific symptoms of increasing neurological dysfunction and include lethargy, irritability and poor feeding, soon followed by
 - Focal neurological signs such as abnormal movements, increasing spasticity and shortly thereafter, by seizures and deepening coma.
- It is characterized by a ***distinctive sweet odor in the urine***, reminiscent of maple syrup.
- **Risk level** - If untreated, progressive brain damage is inevitable and death occurs usually within weeks or months.
- **Treatment** - The disorder can be successfully managed through a specialized diet in which the three BCAAs are rigorously controlled.
- However, even with treatment, patients of any age with MSUD remain at high risk for

developing acute metabolic decompensation (metabolic crises).

- Often triggered by infection, injury, failure to eat (fasting) or even by psychological stress.

Reference

[The Hindu | Maple syrup urine disease](#)

Hipposideros Srilankaensis

Why in News?

A global research team from Osmania University have identified and described a new species of bat.

- It is a new species of ***leaf-nosed bat species***.
- **Endemic to** - Sri Lanka.
- **Taxonomy**
 - **Scientific Name** - Hipposideros srilankaensis.
 - **Family** - Hipposideridae.
- **Named after** - Its ***endemic nature to Sri Lanka***.
- **Habitat** - Found in *dense forests to caves*.
- **Morphology** - A broad noseleaf, distinct ear shape, and cranial characteristics distinct from the Indian Hipposideros brachyotus.
- **Uniqueness** - Genetic analysis further confirmed its distinctiveness from other closely related species in the region.



Hipposideros brachyotus

- It is a species previously considered a subspecies of ***Hipposideros galeritus***.
- The research confirmed that it is a distinct species ***endemic to India*** and reclassified it as Hipposideros brachyotus.
- **Uniqueness** - Genetic analysis further confirmed its distinctiveness from other known species in the region.
- Echolocation call analysis further supported its classification.

36 species of bats are found in India and that Hyderabad is home to 14 different species of bats.

References

1. [The Hindu| New Bat Species](#)
2. [Zootaxa| Hipposideros Srilankaensis](#)

One Liners 03-03-2025

History, Art and Culture

Dholavira

- It is a *UNESCO World Heritage Site*.
- **Location** - Arid island of Khadir in Kachchh district, *Gujarat*.
- **Features** - Advanced *town planning* skills with:
 - Sophisticated water conservation system,
 - Well-structured reservoirs and
 - Urban settlements and so on.
- **Significance** - It is one of the most well-preserved archaeological sites in the subcontinent, showcasing architectural and engineering brilliance of the *Harappan people*.

Geography

Planetary Parade

- **About** - It is a rare alignment in which all seven other planets in our solar system will line up in the night sky.
- All 7 *planets and Moon* will align on the same side of the Sun.
- **Planets visible to the naked eye** - Mercury, Venus, Mars, Jupiter and Saturn.
- **Planets visible through telescope** - Uranus and Neptune.
- This rare cosmic event *won't happen again until 2040*.

Polity & Governance

Aadhaar Good Governance Portal

- **About** - It is a digital platform to *streamline approval process* for Aadhaar authentication requests.
- **Launched by** - Ministry of Electronics and Information Technology (MeitY).
- **Provision** - Under the Aadhaar Authentication for Good Governance (**S**ocial **W**elfare, **I**nnovation, **K**nowledge) Rules, 2020.
- **SWIK ((Social Welfare, Innovation, Knowledge) Rules** - It were introduced as a facilitating provision to section 4(4) (b)(ii) of the Aadhaar (Targeted Delivery of Financial and Other Subsidies, Benefits and Services) Act, 2016.

Baroda Kisan Pride Scheme

Bank of Baroda will shortly launch Baroda Kisan Pride scheme in Karnataka.

- **Aim & objectives** - To encourage farmers to adopt scientific practices in agriculture.
- To provide adequate and timely cash credit facility to farmers at competitive pricing.
- **Eligibility Criteria:**
 - Corporate/Companies of individual farmers.
 - Farmer's Producer Organizations/ Farmer's Producer Companies.
 - Proprietorship/Partnership firms.
 - Co-operatives of farmers/Joint borrowers
 - Large individuals /Other individual farmers
 - Lease cultivators
- **Loan amount** - Rs.5 lakh to 10 crore.

Sugamya Yatra

- **Aim** - To break myths associated with wheel chair users, promote accessibility and encourage inclusivity in society.
- **Organized on** - International Wheel chair Day, 2025 (March 1st).
- **Organized by:**
 - Department of Empowerment of Persons with Disabilities (DEPwD).
 - Ministry of Social Justice and Empowerment (MSJE).
 - Chief Commissioner for Persons with Disabilities (CCPD).

Economy

M-score Methodology

- **About** - It is a mathematical model that uses financial ratios and 8 variables to identify whether a company has manipulated its earnings.
- **Developed by** - Messod Beneish.
- **Uses** - To uncover financial fraud.

Gender Budget (GB)

- **Union Budget allocation, 2025** - A record of Rs.4, 49,028.68 crore was allocated to the Gender Budget (GB) in Budget 2025-56.
- **Rise in allocation** - 37.3% increase from FY24 and accounting for 8.86% of total Budget.
- **Reason for rise in allocation** - It is primarily due to the inclusion of PM Garib Kalyan Anna Yojana, as it accounts for 24% of General Budget.

Security

Exercise Desert Hunt 2025

- It is an integrated Tri-Service Special Forces exercise.
- **Conducted by** - Indian Air Force.
- **Elite Para (Special Forces)** - Indian Army, Indian Navy and Indian Air Force.
- **Aim** - At enhancing interoperability, coordination and synergy among the 3 Special Forces units.
- To ensure swift and effective response towards emerging security challenges.

Miscellaneous

Tuhin Kanta Pandey

- He was appointed as 11th chairperson of the Securities and Exchange Board of India (SEBI).
- **Appointment approval by** - Appointment Committee of the Cabinet.
- **Tenure** - 3 years.

United Nations World Wildlife Day (WWD)

- **Celebrated on** - *3rd March*, every year.
- **Objective** - To celebrate *wild animals & plants*, recognize their unique roles and contributions of wildlife to people and the planet.
- **Theme, 2025** - Wildlife Conservation Finance: Investing in People and Planet.
- **WWD, 2025** - Will serve as a platform for exchange and exploration of innovative financial solutions for *wildlife conservation*.

