UPSC Daily Current Affairs | Prelim Bits 06-06-2020

Asteroids

- Asteroids are made up of metals and rocks and orbit the Sun and are small bodies in the solar system.
- They tend to have shorter and elliptical orbits.
- They do not produce a coma or tail atmosphere.
- The asteroid belt is a torus-shaped region in the Solar System, located roughly between the orbits of the planets Jupiter and Mars.

Comet

- Comets are made up of ice and hydrocarbons also orbit the Sun and are relatively small bodies of the solar system.
- Comets have an eccentric orbit.
- When comets approach the sun, some part of their ice melts and the other materials vaporize due to the heat of the sun.
- This results in a glowing halo that extends outwards through space, therefore a thin atmospheric tail is formed when close to the Sun.

Near-Earth Objects (NEOs)

- NEOs are comets and asteroids pushed by the gravitational attraction of nearby planets into orbits which allow them to enter the Earth's neighborhood.
- These objects are composed mostly of water ice with embedded dust particles.
- NEOs occasionally approach close to the Earth as they orbit the Sun.
- NASA's Center for Near-Earth Object Study (CNEOS) determines the times and distances of these objects, when their approach to the Earth is close, through the Asteroid Watch Widget.

Potentially Hazardous Asteroid (PHA)

- Potentially Hazardous Asteroid means that an asteroid has the potential to make threatening close approaches to the Earth.
- Specifically, all asteroids with a Minimum Orbit Intersection Distance (MOID) of 0.05 AU (which is about 7,480,000 Km) or less and an Absolute

Magnitude (H) of 22.0 (about 150 mt in diameter) or less are considered PHAs.

- Minimum Orbit Intersection Distance is a method for calculating the minimum distance between two almost overlapping elliptical orbits.
- The Astronomical Unit (AU) is the distance between the Earth and the Sun and is roughly 150 million km.
- The absolute magnitude is a measure of the star's luminosity i.e. the total amount of energy radiated by the star every second.
- NASA's Near-Earth Object Observations Program finds, tracks and characterizes over 90% of the predicted number of NEOs that are 140 meter or larger in size.
- However, no asteroid larger than 140 meter has a "significant" chance of hitting the Earth for the next 100 years.

163348 (2002 NN4)

- 163348 (2002 NN4), was discovered in July 2002 and is expected to approach the earth in June 2020.
- The asteroid is estimated to be between 250-570 meters in diameter.
- The asteroid is a Near-Earth Object and classified as a Potentially Hazardous Asteroid (PHA).
- Recently, the National Aeronautics and Space Administration (NASA) has announced that a giant asteroid called as 163348 (2002 NN4), is expected to pass Earth on 6th June 2020.
- However, it is approaching the Earth within the safe limit of distance.

LiDAR

- LiDAR (Light Detection and Ranging) is a remote sensing method that uses light in the form of a pulsed laser to measure ranges & variable distances.
- These light pulses—combined with other data recorded by the airborne system— generate precise, three-dimensional information about the shape of the Earth and its surface characteristics.
- A LiDAR instrument principally consists of a laser, a scanner, and a specialized GPS receiver.
- Airplanes and helicopters are the most commonly used platforms for acquiring LiDAR data over broad areas.
- LiDAR is used for agriculture, hydrology,water management systems, geology-related applications, and also used in archaeology.
- Recently a U.K.-based team of archeologists has continued its research

over the Tamar Valley through LiDAR (Light Detection and Ranging) despite lockdown due to Covid-19 in the country.

Tamar Valley

- Tamar valley is located in the south of England and is a rich archaeological landscape with many sites belonging to the Iron Age and Roman era.
- The area is a World Heritage Site due to its historic mining activities.
- A World Heritage Site is a place that is listed by the United Nations Educational, Scientific and Cultural Organization (UNESCO) for its special cultural or physical significance.
- The list of World Heritage Sites is maintained by the international 'World Heritage Programme', administered by the UNESCO World Heritage Committee.

Nagar Van Scheme

- Union government has announced implementation of the Nagar Van Scheme on the occasion of the World Environment Day (5th June).
- The Nagar Van (Urban Forests) aims to develop 200 Urban Forests across the country in the next five years.
- Warje Urban Forest in Pune (Maharashtra) will be considered as a role model for the Scheme.
- The Scheme enforces people's participation and collaboration between the Forest Department, Municipal bodies, NGOs, Corporates and local citizens.
- These urban forests will primarily be on the existing forest land in the City or any other vacant land offered by local urban local bodies.
- The finances for the scheme will be paid for by the CAMPA (Compensatory Afforestation Fund (CAF) Act, 2016) funds.

CAMPA – Compensatory Afforestation Fund (CAF) Act

- Compensatory afforestation means that every time forest land is diverted for non-forest purposes such as mining or industry, the user agency pays for planting forests over an equal area of non-forest land, or when such land is not available, twice the area of degraded forest land.
- The CAF Act was enacted to manage the funds collected for compensatory afforestation which till then was managed by ad hoc Compensatory Afforestation Fund Management and Planning Authority (CAMPA).
- As per the rules, 90% of the CAF money is to be given to the states while

10% is to be retained by the Centre.

Warje Urban Forest

- Warje Urban Forest or Smriti Van is an initiative that began in 2015-16 in Pune under the leadership of Union Environment Minister Prakash Javadekar.
- Before becoming a pioneering urban forest, Warje Hill was a barren land under the Maharashtra Forest Department.
- Four years ago, under a unique experiment the Maharashtra Forest Department joined hands with TERRE Policy, a city based NGO, Tata Motors and Persistent Foundation to turn the barren hill into a green forest.
- To ensure that this project remained sustainable, peoples' participation was encouraged, People adopted trees in memory of their loved ones.
- Smriti Van today boasts of more than 6,500 grown up trees, some have become 25-30 feet tall.

iCommit Initiative

- Recently, the iCommit initiative was launched on the occasion of the World Environment day (5th June).
- The initiative is driven by Energy Efficiency Services Limited (EESL), under the administration of the Ministry of Power, Government of India.
- iCommit initiative is centred around the idea of building an energy resilient future.
- It is a clarion call to all stakeholders and individuals to continue moving towards energy efficiency, renewable energy, and sustainability to create a robust and resilient energy system in the future.
- The prerequisite for this goal is to create a flexible and agile power system.
- A healthy power sector can help the nation in meeting the objective of energy access and security for all.
- It seeks to bring together a diverse spectrum of government and private players to build a new energy future for India.
- The initiative will also celebrate and promote key undertakings of Government of India such as:

1. National Electric Mobility Mission 2020,
2. FAME 1 and 2,
3. Deendayal Upadhyaya Gram Jyoti Yojana,
4. Saubhagya Scheme,

5. Ujwal DISCOM Assurance Yojna (UDAY),
6. Atal Distribution system Improvement Yojna (AJAY),
7. Smart Meter National Programme,
8. PM - Kisan Urja Suraksha evam Utthan Maha abhiyan (KUSUM),
9. Solar Parks, Grid Connected Rooftop,
10. UnnatJyoti by Affordable LED for All (UJALA), amongst others.

Payments Infrastructure Development Fund (PIDF)

- Recently, the Reserve Bank of India (RBI) has announced the creation of a Rs. 500-crore Payments Infrastructure Development Fund (PIDF).
- PIDF has been created to encourage deployment of Point of Sale (PoS) infrastructure, both physical and digital, in tier-3 to tier-6 centres and north eastern states.
- The setting of PIDF is in line with the measures proposed by the vision document on payment and settlement systems in India 2019-2021.
- It is also in line with the RBI's proposal to set up an Acceptance Development Fund which will be used to develop card acceptance infrastructure across small towns and cities.
- It has a corpus of Rs. 500 crore in which the RBI has made an initial contribution of Rs. 250 crore.
- The remaining will come from the card-issuing banks and card networks operating in the country.
- The PIDF will also receive recurring contributions to cover operational expenses from card-issuing banks and card networks. RBI will also contribute to yearly shortfalls, if necessary.
- The fund will be governed through an advisory council but will be managed and administered by the RBI.

Healthy and Energy Efficient Buildings

- The Energy Efficiency Services Limited (EESL), in partnership with the U.S. Agency for International Development's (USAID) MAITREE program, launched the "Healthy and Energy Efficient Buildings" initiative that will pioneer ways to make workplaces healthier and greener.
- The initiative was launched on the occasion of the World Environment day (5th June).
- This initiative is to address the challenges of retrofitting existing buildings and air conditioning systems so that they are both healthy and energy efficient.
- The initiative, implemented by the EESL in its office, will pave the way for

other buildings to take appropriate steps to be healthy and energy efficient.
- This will help in developing specifications for future use in other buildings throughout the country, as well as aid in evaluating the effectiveness and cost benefits of various technologies and their short and long-term impacts on air quality, comfort, and energy use.

Energy Efficiency Services Limited

- Energy Efficiency Services Limited (EESL) is under the administration of the Ministry of Power, Government of India.
- It is working towards mainstreaming energy efficiency and is implementing the world's largest energy efficiency portfolio in the country.
- It aims to create market access for efficient and future-ready transformative solutions that create a win-win situation for every stakeholder.
- It helps in implementing programmes such as UnnatJyoti by Affordable LED for All (UJALA), Smart Meters, etc.

U.S. Agency for International Development

- USAID is the world's premier international development agency and a catalytic actor driving development results.
- The Market Integration and Transformation Program for Energy Efficiency (MAITREE), is a part of the US-India bilateral Partnership between the Ministry of Power and USAID and is aimed at accelerating the adoption of cost-effective energy efficiency as a standard practice within buildings, and specifically focuses on cooling.

Source: PIB, the Hindu, Indian Express

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