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EnVision

- EnVision is a European Space Agency (ESA) led mission. Its orbiter will visit Venus in the 2030s.
- Once launched on an Ariane 6 rocket, the spacecraft will reach Venus in 15 months and will take 16 more months to achieve orbit circularisation.
- The spacecraft will study the planet's atmosphere and surface, monitor trace gases in the atmosphere and analyse its surface composition.
- Radar provided by NASA will help to image and map the surface.
- At the core of the ESA's mission is the question of how Earth and Venus evolved so differently from each other considering that they are roughly of the same size and composition.
- EnVision will follow another ESA-led mission 'Venus Express' (2005-2014) that focussed on atmospheric research and pointed to volcanic hotspots on the planet's surface.

Other Missions to Venus

- The first spacecraft that visited the planet was the Soviet Union's Venera series, followed by NASA's Magellan Mission (1990-1994).
- Japan's Akatsuki spacecraft has been studying Venus' atmosphere since 2015. Recently, NASA selected two missions to Venus.

Aerosol Nucleation

- Scientists from the University of Hyderabad have found frequent formation of sub-3 nanometres aerosol particles in the atmosphere.
- They measured particle size distribution of neutral sub-3nm (1 to 3 nm) particles using AIRMODUS nano Condensation Nucleus Counter (nCNC) at an urban location in India.
- **Terminologies** - The formation of small molecular clusters of sub-3nm size is technically called aerosol nucleation.
- The subsequent growth of these newly formed clusters to the large sizes is called atmospheric new particle formation (NPF).
- NPF occurs everywhere in the terrestrial troposphere, and therefore it is a large source of aerosol numbers to the atmosphere.
- This has critical importance as a major fraction of these newly formed

particles can reach to sizes of cloud condensation nuclei where they have climatic impacts.

- **Findings of the Study** - The speed with which this pool of sub-3nm particles form clusters grow depends on various factors.
- Only half of these events newly formed molecular clusters grow past 10 nm sizes. Thus particle size distributions display a conventional banana-shaped aerosol growth, which is indicative of regional NPF event.
- The team found a strong positive correlation between sub-3nm particle concentrations and sulphuric acid concentrations.
- NPF often starts with sulphuric acid in the atmosphere. Other vapours such as ammonia, amines and organics also play a crucial role in the growth of newly formed particles.

Operation Pangea XIV

- International Criminal Police Organization-led (Interpol-led) Operation Pangea XIV targeted the sale of fake medicines and products online.
- More than 1.10 lakh web links have been taken down in an operation involving the police, customs and health regulatory authorities of 92 countries against the sale of fake medicines and medical products.
- This is the largest since the first “Operation Pangea” conducted in 2008.
- Indian agencies also participated in the operation. The Central Bureau of Investigation (CBI) that is the nodal body for the Interpol in the country.

Group of 7

- The Group of 7 (G7) is an informal group of seven countries - the United States, Canada, France, Germany, Italy, Japan and the United Kingdom.
- **Origin** - The G7 draws its roots from a meeting between the current G7 members, excluding Canada that took place in 1975.
- Russia participated in the G8 from 1998 to 2014 until its invasion of Ukraine’s Crimea caused the group to eject it.
- **G7 summit** - The heads of these countries hold an annual G7 summit with European Union and other invitees.
    - India has been invited to the 2021 G7 summit as a special guest. It will be particularly interested in the talks related to global vaccine delivery as both a major manufacturer and consumer.
- The presidency of G7 meetings is held by each of the seven countries in turn, each year. The country holding the presidency is responsible for organising and hosting the meeting.
- The UK holds the G7 presidency for 2021 in Cornwall.
- **Nature** - Together the member countries represent 40% of global GDP and 10% of the world’s population.

- Unlike other bodies such as NATO, the G7 has no legal existence, permanent secretariat or official members.
- It has no binding impact on policy, and all decisions and commitments made at G7 meetings need to be ratified independently by governing bodies of member states.

Heritage Trees

- The Maharashtra government will make amendments to the Maharashtra (Urban Areas) Protection and Preservation of Trees Act of 1975, to introduce provisions for the protection of 'heritage trees'.
- **Heritage trees** - Under the proposed amendment, a tree with an estimated age of 50 years or more shall be defined as a heritage tree. It may belong to specific species, which will be notified from time to time.
- The environment department, in consultation with the forest department, will issue guidelines to determine the age of the tree.
- **Protection** - According to the current Compensatory Plantation in the state, one sapling has to be planted for each tree that is cut.
- Under the proposed amendment, anyone cutting a heritage tree must plant compensatory trees in the same numbers as the cut tree's age.
- **Maintenance** - The organization planting these trees will have to ensure the survival of the plantation for 7 years and geo-tag the trees.
- Such plantations can be carried out either in the same plot or a common amenity plot.
- The amendment also has the fine for illegal felling of trees from a maximum of Rs 5,000 to Rs 1 lakh per tree.

Maharashtra Tree Authority

- Maharashtra will form the Tree Authority in local civic bodies and councils which will take all decisions regarding the protection of trees.
- Tree Authority (TA) is tasked with increasing the tree cover in urban areas and protecting the existing ones.
- The knowledge of the experts, who are part of the local TA, will form the basis of decisions taken up by the authority.
- A proposal to cut more than 200 trees of age 5 years or more, will be referred to the state tree authority.
- The local TA will have to ensure that the project is not sub-divided into smaller parts to keep the number of trees below the defined threshold.
- Ensure preparation of a tree plan and should aspire over the years to have 33% green belt in their area.
- The local Tree Authority will have to ensure tree census to be carried out every five years along with counting of heritage trees.

Determining a Tree's Age

- The most common method of determining the age of the tree is Dendrochronology – or tree-ring dating also called growth rings.
- Each year, roughly a tree adds to its girth, the new growth is called a tree ring. By counting the rings of a tree, the age can be determined.
- To analyse the rings, core samples are extracted using a borer that's screwed into the tree and pulled out, bringing with it a straw-size sample of wood. The hole in the tree is then sealed to prevent disease.

YUVA Scheme

- Prime Minister announced the 'Young, Upcoming and Versatile Authors' (YUVA) scheme, a mentorship programme to train young authors.
- The scheme is aimed at training 75 aspiring writers below 30 years, who are ready to project India and its culture and literature globally.
- A consolidated scholarship of Rs 50,000 per month for a period of six months per author will be paid under the mentorship scheme.
- Through this scheme, the government aims to bring reading and authorship as a preferred profession at par with other job options.

- **Selection** - Authors will be selected through an All India Contest at MyGov by a Committee to be constituted by NBT.
- They will be asked to submit a manuscript of 5,000 words to judge its suitability to develop as a proper book under the Mentorship Scheme.
- The Education Ministry's National Book Trust (NBT) will ensure phase-wise execution of the Scheme.

- **Phase I** - In the phase I training (3 months), the young authors will be trained by two eminent authors/mentors (from NBT's panel of authors and writers) in a two weeks' writers' online program organised by NBT.
- After the completion of the programme, the authors will be trained for two weeks at various online/on-site national camps organised by NBT.
- **Phase II** - In the next 3 months training, the selected candidates will get to expand their understanding and hone their skills through interaction at various international events.
- A book or a series of books written by these young authors will be published by NBT and a royalty of 10% will be paid to the authors.
- Their published books will also be translated into other Indian languages to ensure the exchange of culture and literature between different states.

Saral Jeevan Bima

- It is a standard term life insurance plan that was launched in 2020 by

Insurance Regulatory and Development Authority of India (IRDAI).

- It offers basic protection to people who are self-employed or belong to a lower income category - earning about 5 lakhs a year.
- It can be purchased by people in the age group of 18 to 65 years and will have a policy term of 5 to 40 years.
- It is a term cover that pays the entire cover amount to the dependents in case of the death of the policyholder within the policy term. There are no exclusions, other than suicides.
- The plan is available for a minimum cover amount of Rs 50,000, up to a maximum of Rs 25 Lakh.

Source: PIB, The Hindu, The Indian Express

