

1. Archaea

Why in News?

- Recently, scientists of National Centre for Microbial Resource – National Centre for Cell Science (NCMR-NCCS) in Pune have reported a new archaeon, which is discovered in Sambhar Salt Lake in Rajasthan.

About Archaea (Singular Archaeon):

- It is a primitive group of microorganisms that thrive in extreme habitats such as hot springs, cold deserts and hyper saline lakes.
- It is a slow-growing organisms, which is present in the human gut, and have a potential Relationship with Human Health.
- They are known for producing antimicrobial molecules, and for anti-oxidant activity with applications in eco-friendly waste-water treatment.
- The Researchers found that the organism has potential gene clusters that helps maintain the Metabolism of the archaea to survive in Extreme Harsh Conditions.

2. National Data and Analytics Platform (NDAP)

Why in News?

- NITI Aayog released its vision for the National Data and Analytics Platform (NDAP).

National Data and Analytics Platform (NDAP):

- The platform aims to democratize access to publicly available government data.
- It will host the latest datasets from various government websites, present them coherently, and provide tools for analytics and visualization.
- NDAP will follow a user-centric approach and will enable data access in a simple and intuitive portal tailored to the needs of a variety of stakeholders.
- NDAP will spearhead the standardization of formats in which data is presented across sectors and will cater to a wide audience of policymakers, researchers, innovators, data scientists, journalists and citizens.
- An Inter-Ministerial committee will oversee the progress of the development of the platform and a group of leading experts have been inducted into an advisory group to provide technical guidance for the development of the platform.
- The Development of NDAP will take place over a period of one year. The first version of the platform is expected to be launched in 2021.

3. India phases out Ozone Depleting HCFC-141b

Why in News?

- Issue India has successfully completed the phasing out of Hydro chloro fluoro carbon (HCFC)-141b, used by foam manufacturing companies and one of the most potent ozone-depleting chemicals.

Highlights:

- Ozone occurs naturally in small amounts in the upper atmosphere of the earth. It protects life on earth from the sun's ultraviolet (UV) radiation. But its presence on ground creates many health problems.
- HCFC-141b is not produced in India and all the domestic requirements are met through imports. With the notification prohibiting the import of HCFC-141b, India has completely phased out the important ozone depleting chemical.
- Simultaneously, the use of HCFC-141b by foam manufacturing industry has also been closed as on January 1 under the Ozone Depleting Substances (Regulation and Control) Amendment Rules, 2014. The phase out of HCFC-141b from the country has twin environmental benefits, one is assisting the healing of the stratospheric ozone layer and the second is climate change mitigation due to transition of foam manufacturing enterprises at large scale to low global warming potential alternative technologies.
- Most of the companies that are manufacturing foam in India are micro, small and medium enterprises (MSMEs) and belong to informal sector.

HCFC-141b:

- Hydrochlorofluorocarbon-141b, or 1,1-dichloro-1-fluoroethane (HCFC141b), has been developed as a replacement for fully halogenated chlorofluorocarbons because its residence time in the atmosphere is shorter, and its ozone depleting potential is lower than that of presently used chlorofluorocarbons.
- HCFC-141b is used in the production of rigid polyurethane and polyisocyanurate or phenolic insulation foams for residential and commercial buildings. It may also be used as a solvent in electronic and other precision Cleaning Applications.
- HCFCs are ozone-depleting substances and are to be phased out under the Montreal Protocol by 2020 in the developed world and 2040 elsewhere.

4. Web Portal 'GATI'

Why in News?

- Union Minister for Road Transport & Highways launched web portal 'GATI'.

GATI:

- The portal has been created by NHAI taking inspiration from the PRAGATI Portal used by PMO.
- It can be accessed from the NHAI Website and contractors/concessionaires can raise any project related issues on the Portal.
- The issue will immediately come to the notice of every official of NHAI including top management, and immediate action will be taken by the concerned officer, duly updating on the Portal.
- The issues raised in the GATI will be daily monitored by a team of officers in NHAI and will be constantly reviewed by the senior officers of NHAI and the Ministry of Road Transport & Highways.
- This will bring transparency and speed up the decision making giving real GATI (pace) to highway construction.

5. Tibetan Glaciers Reveal Ancient Virus

Why in News?

- A glacier on the north western Tibetan Plateau of China has hosted an ensemble of frozen viruses, many of them unknown to modern science. Scientists excavated the site, revealing the existence of 28 never-before-seen virus groups.

Highlights:

- Investigating these mysterious viruses could help scientists in understanding which viruses thrived in different climates and environments over time.
- Studying Ancient Glacial Microbes can be challenging. That's because it's extremely easy to contaminate ice core samples with modern-day bacteria.
- The team drilled 50 meters (164 feet) down into the glacier to obtain two ice cores, which then underwent a three-step decontamination protocol.
- After that, the researchers used microbiology techniques to identify microbes in the samples.

- The microbes differed significantly across the two ice cores, presumably representing the very different climate conditions at the time of deposition.
- Climate change now threatens both our ability to exhaustively catalogue those tiny lifeforms as well as our ability to stay safe from dangerous ones.
- In a worst-case scenario, this ice melt [from climate change] could release pathogens into the environment. If this happens, it's best to know as much about these viruses as possible.
- Research into ancient viruses provides a first window into viral genomes and their ecology from glacier ice.

6. Forum of the Election Management Bodies of South Asia (FEMBoSA)

Why in News?

- The Election Commission of India is going to host the 10th annual meeting of the Forum of the Election Management Bodies of South Asia (FEMBoSA) at New Delhi.

FEMBoSA:

- FEMBoSA is a regional establishment to increase mutual cooperation in respect to the common interests of the SAARC's EMBs.
- In 2010, for the first time, the Bangladesh Election Commission organized a regional meeting titled 'Meeting on Cooperation of Election Commissions in the South Asia Region', which was later called Forum of Election Management Bodies of South Asia (FEMBoSA) as an institutionalized form.
- The forum's charter was approved in 2012 when FEMBoSA was established.
- FEMBoSA was established at the 3rd Conference of Heads of Election Management Bodies (EMBs) of the SAARC countries held at New Delhi in 2012.
- The annual FEMBoSA meeting is held by rotation among the members.
- The FEMBoSA represents a very large part of the Democratic World and is an active regional association of the election management bodies of South Asia.

The objectives of the Forum are:

- To promote contact among the EMBs of the SAARC countries.
- To share experiences with a view to learning from each other.
- To cooperate with one another in enhancing the capabilities of the EMBs towards conducting free and fair elections.
- India is the chair of FEMBoSA for 2020.

- In the annual conference, an international conference on the theme 'Strengthening Institutional Capacity' will also be conducted.

7. Indian Ocean Dipole

Why in News?

- Australia is facing raging bushfires across its vast grasslands, which it terms to be an effect of severe drought caused due to alterations in Indian Ocean Dipole (IOD). In this context it is necessary to understand the phenomenon of IOD.

Highlights:

- The Indian Ocean Dipole (IOD), also known as the Indian Niño, is an irregular oscillation of sea surface temperatures in which the western Indian Ocean becomes alternately warmer (positive phase) and then colder (negative phase) than the eastern part of the ocean.
- The IOD involves an aperiodic oscillation of sea-surface temperatures (SST), between "positive", "neutral" and "negative" phases.
- A positive phase sees greater-than-average sea-surface temperatures and greater precipitation in the western Indian Ocean region, with a corresponding cooling of waters in the eastern Indian Ocean, which tends to cause droughts in adjacent land areas of Indonesia and Australia.
- The negative phase of the IOD brings about the opposite conditions, with warmer water and greater precipitation in the eastern Indian Ocean, and cooler and drier conditions in the west.
- The IOD also affects the strength of monsoons over the Indian subcontinent.
- The research shows that when the IOD is in its negative phase, with cool western Indian Ocean water and warm water off northwest Australia (Timor Sea), winds are generated that pick up moisture from the ocean and then sweep down towards southern Australia to deliver higher rainfall.
- In the IOD-positive phase, the pattern of ocean temperatures is reversed, weakening the winds and reducing the amount of moisture picked up and transported across Australia.
- The consequence is that rainfall in the south-east is well below average during periods of a positive IOD.