UPSC Daily Current Affairs | Prelim Bits 26-11-2020

Desalination Plant

- A desalination plant turns salt water into water that is fit to drink.
- Desalination is the process of removing salts from water to produce water that meets the quality (salinity) requirements of different human uses.
- Most commonly used technology for the process is reverse osmosis.
- An external pressure is applied to push solvents from an area of high-solute concentration to an area of low-solute concentration through a semi-permeable membrane.
- The microscopic pores in the membranes allow water molecules through but leave salt and most other impurities behind, releasing clean water from the other side.
- These plants are mostly set up in areas that have access to sea water.
- Recently, Maharashtra announced the setting up of a desalination plant in Mumbai.
- The plant will process 200 million litres of water daily (MLD), and will help in overcoming the water shortage faced by Mumbai in the months of May and June.
- Maharashtra will be the fourth state to experiment with Desalination Plants.
- It can extend water supplies beyond what is available from the hydrological cycle, providing an "unlimited", climate-independent and steady supply of high-quality water.
- It can provide drinking water in areas where no natural supply of potable water exists.

Chang'e-5 Mission

- China has launched an unmanned spacecraft to bring back lunar rocks, the first attempt by any nation to retrieve samples from the Moon in four decades.
- Recently China has launched the Long March-5 Y5 rocket, carrying the Chang'e-5 spacecraft from Wenchang Space Launch Center (China).
- The Chang'e-5 mission, named after the ancient Chinese goddess of the moon, will seek to collect lunar material to help scientists understand

more about the moon’s origins and formation.

- The Mission will drill 2 meters beneath the moon’s surface and scoop up about 2 kilograms of rocks and other debris to be brought back to Earth.
- There will be an attempt to collect 2 kg of samples in a previously unvisited area in a massive lava plain known as Oceanus Procellarum, or “Ocean of Storms”.
- If this is successful, the samples will be transferred to a return capsule that will return them to Earth, with a landing in China's Inner Mongolia region.
- The entire mission is scheduled to take around 23 days.
- The sample collected would help scientists learn about the following

1. Moon’s origins,
2. Volcanic activity on its surface and its interior, and
3. When its magnetic field, key to protecting any form of life from the sun’s radiation dissipated.

- If the mission is completed as planned, it would make China only the third country to have retrieved lunar samples, joining the United States and the Soviet Union.

Other missions that had collected lunar samples

- The other two missions that had brought back the lunar samples from the moon surface were the following

1. **USA’s Apollo programme** (which first put men on the moon) – brought 382 kg of rocks and soil.
2. USSR’s Luna had deployed three successful robotic sample return missions in the 1970s, samples were collected from Mare Crisium, or “Sea of Crises” - a lunar basin.

M Dwarf Stars

- M dwarfs, also known as Red Dwarfs, are the tiniest of the stars that have masses ranging from about 8 percent to about 50 percent of the Sun’s mass.
- The planets circling an M dwarf must be in a close orbit to the star to be warm enough for life, like campers huddling around a small fire.
- The term "red dwarf" does not refer to a single kind of star.
- It is frequently applied to the coolest objects including K and M dwarfs which are true stars and brown dwarfs, often referred to as "failed stars" because they do not sustain hydrogen fusion in their cores.

- Characteristic features of M Dwarf Stars are

1. The red dwarf stars have relatively low pressures, a low fusion rate, and a low temperature.
2. The low temperature of red dwarfs implies that they are far dimmer than stars like the sun.
3. The low temperature also means that they burn through their supply of hydrogen less rapidly.
4. The red dwarf stars live for so long that not one of them has reached an advanced stage of evolution since the universe was created.

- Recently total of 53 M dwarfs were studied using the TIFR Near-Infrared (NIR) Spectrometer and Imager (TIRSPEC) instrument on the 2-m Himalayan Chandra Telescope (HCT) at Hanle, India.
- Using effective temperature (Teff), radius, and luminosity of nearby bright calibrator stars, the team has created new empirical relationships among those fundamental parameters and spectral indices of M dwarfs that could identify them as potentially habitable.

Sahakar Pragya

- Recently, the Union Minister of Agriculture & Farmers Welfare has unveiled 'Sahakar Pragya' training module.
- It is part of a series of initiatives taken up by NCDC to strengthen India's cooperative societies.
- It is an innovative capacity building initiative for the farmers associated with such entities in the country.
- The 45 new training modules will impart training to primary cooperative societies in rural areas of the country.
- It embodies enhancing NCDC's training capacity through an elaborate network of 18 Regional Training Centres across the country.

Other Sahakar Initiatives

- **Sahkar Mitra SIP -** The "Scheme on Internship Program" (SIP) is an arrangement where NCDC will provide short term opportunity to young professionals acquire learning experience by applying skills and knowledge.
- **Yuva Sahakar -** Its objective is to motivate and promote the entrepreneurs of India in the Cooperative Enterprise and those individuals working for the business.
- **Ayushman Sahakar -** It is a unique scheme to assist cooperatives play an

important role in creation of healthcare infrastructure in the country.

- Recently, the World Health Organisation (WHO) has suspended Remdesivir from the official list of medicines.
- **Sahakar Cooptube NCDC Channel -** It is an initiative towards One Nation One Market with the objective for India to become food factory of the world.
- **SAHAKAR-22 -** It aims to develop cooperatives in Focus 222 districts, including aspirational districts, for doubling the farmers' income through providing new employment opportunities generated through cooperatives.

Environmental Appraisal

- Recently Ministry of Environment and Forests (MoEF) issued fresh guidelines to accelerate environment appraisal of industrial projects.
- Environmental appraisals, as per norms, are conducted by independent panels of experts that have representatives from the government as well as from outside, trained in matters of ecology, wildlife and habitat preservation.
- The Expert Appraisal Committees (EACs) opine on whether a proposed project beyond a certain size ought to be commissioned and recommend ways to mitigate the potential environmental impact.
- Their advice is critical to the MoEF’s eventual decision to either clear or red flag a project.
- There are separate EAC committees for industrial projects, coal mining, non-coal mining, river and hydroelectric projects, each with its own independent chairperson and committee members.
- However, several members have full-time jobs independent of their commitments to EAC meetings.

Suspension of Remdesivir

- Remdesivir is a drug with anti-viral properties that was manufactured by US-based Biotechnology Company in 2014, to treat Ebola cases.
- Recently WHO has dropped Remdesivir from the prequalification list which is an official list of medicine for Covid-19.
- The suspension is a signal to countries that WHO, in compliance with the treatment guidelines, does not recommend countries procure the drug for Covid-19.
- WHO concluded that Remdesivir had no meaningful effect on mortality or on other important outcomes for patients, such as the need for mechanical ventilation or time to clinical improvement.

Source: PIB, Indian Express, the Hindu