Prelim Bits 17-10-2019

Livestock Census

- The 20th livestock census has been released by the Ministry of Fisheries, Animal Husbandry and Dairying.
- The Livestock Census has been conducted in the country periodically since 1919-20.
- It covers all domesticated animals and its headcounts in both rural and urban areas.
- It has been conducted in participation with State Governments and UT Administrations.
- It considers the following animals/poultry birds possessed by the households, household enterprises/non-household enterprises and institutions,
- Animals - Cattle, Buffalo, Mithun, Yak, Sheep, Goat, Pig, Horse, Pony, Mule, Donkey Camel, Dog, Rabbit and Elephant
- Poultry birds - Fowl, Duck, Emu, Turkeys, Quail and other poultry birds
- The three key highlights of the 2019 census are,

i. The total Livestock populationis **535.78** million, an increase of **4.6%** over the previous census 2012,
ii. Total Bovine population (Cattle, Buffalo, Mithun and Yak) is **302.79 Million**, an increase of about **1%** over the previous census,
iii. The total number of cattle is **192.49 million**, an increase of **0.8 %** over previous Census.

- The major thrust given to 20th Livestock Census is the collection of data through tablets computers, coordinated by National Informatics Centre.

Food Safety Mitra

- Ministry of Health and Family Welfare launched Food Safety Mitra Scheme on the occasion of World Food Day,2019.
- It is to strengthen food safety administration and scale up the 'Eat Right India' movement.
- The scheme will support small and medium scale food businesses to comply with the food safety laws and facilitate licensing and registration, hygiene ratings and training.
- The Food Safety Mitras would undergo training and certification by FSSAI

and get paid by food businesses for their services.
- It would also create new employment opportunities for youth, particularly with food and nutrition background.

GOAL

- Going Online as Leaders (GOAL) is a Facebook program launched for underprivileged young tribal women.
- It aimed at inspiring, guiding and encouraging tribal girls from across India to become village-level digital young leaders for their communities.
- It connects tribal women with senior expert mentors in the areas of business, fashion and arts to learn digital and life skills.
- Ministry of Tribal Affairs associated with Facebook have recently launched the 2^{nd} phase of this program.
- In the second phase of the program, will digitally mentor 5000 young women in India's tribal dominated districts.
- It will give provide the tools and guidance they need to succeed, using technology they may otherwise have not had access to.

Exoplanets and Dark Matter

- Nobel Prize in Physics was awarded to Michel Mayor and Didier Queloz of the University of Geneva, for discovering for the first time a planet outside our solar system orbiting a Sun-like star.
- The other half of the prize is to James Peebles, Princeton University, for his contribution to physical cosmology.
- **Exoplanets** - It is an extrasolar planet i.e a planet outside our solar system.
- 51 Pegasi b was the first exoplanet to be discovered by Mayor and Queloz in December, 1995.
- The constellation Pegasus has a star 51 Pegasi which is some 50 light years away from earth.
- According to the NASA exoplanet archive, as of October 10, 2019, there are 4,073 confirmed exoplanets.
- **Cosmic Microwave Background (CMB) –**40,000 years after the Big Bang, the universe expanded and cooled to a few 1000^{0}C.
- This causes it to become transparent, allowing light to pass through it and the observation of the remnants of this ancient glow is known as CMB.
- It was detected first in 1964, winning for its discoverers a Nobel Prize in 1978.
- It consists of light in the microwave range because the expansion of the universe stretched the light so much. Microwave radiation is invisible light.
- By studying the microwave, it could reveal how much energy and matter does the universe contain.

- **Dark Energy -** In 1998, it was discovered that the universe is expanding, and that this expansion was gaining speed or accelerating.
- There had to be an “invisible” energy that was driving this.
- Calculations showed that this dark energy did not interact with the observed mass and makes up about 70% of the universe.

Microbial Fuel Cells

- Microbial fuel cells are devices that use bacteria as the catalysts to oxidise organic and inorganic matter and generate current.
- The electrons produced by the bacteria are transferred to the negative terminal and flow to the positive terminal.
- Plants naturally deposit biomatter as they grow, which in turn feeds the natural bacteria present in the soil, creating energy that can be harnessed by fuel cells.
- It is used to power a wide range of vital conservation tools remotely, including sensors, monitoring platforms and camera traps.
- Among conventional power sources, batteries must be replaced while solar panels rely on a source of sunlight.
- On the other hand, plants can survive in the shade, naturally moving into position to maximise the potential of absorbing sunlight.
- Zoological Survey of London has deployed microbial fuel cells in fern to power camera traps and sensors in the wild.

Source: PIB, The Hindu, The Indian Express

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