

Prelims Focus - 16th April 2024

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Geroscience

In News: It has been recently observed that Geroscience helps in addressing age-Related Diseases.

- Dr. Daniel Belsky (an epidemiologist at Columbia University) has coined the time period 'geroscience', which means geriatric, or associated with age.
- He has devised a unique blood take a look at which determines the tempo at which someone is growing older.
- His group has devised a method which studies the formation of methyl companies through an enzyme in the DNA of senior citizens and finds that this methylation is sensitive to getting older.
 - This is often referred to as 'gerozyme'.
- **Studies:** Several organizations are working on pills and different associated methods to modulate the gerozyme, and the way those efforts affect his/her growing older.
 - One group has cautioned that the drug called metformin is a tool to target getting old.
- Another organization has shown that if we inhibit the enzyme TORC1, it'll enhance immunity and reduce contamination in the aged.
- The Columbia Aging Centre has determined that a balanced diet supports mind fitness by lowering inflammation, and promotes proper blood flow by presenting crucial vitamins which aid cognitive function.

Zero FIR

In News: The Banjara Hills police registered a zero FIR case against the former minister for allegedly making objectionable comments against the Telangana Chief Minister.

- When a police station gets a grievance concerning an alleged offense that has been committed in the jurisdiction of another police station, it registers an FIR after which transfers it to the relevant police station for further investigation. This is referred to as a Zero FIR.
- No regular FIR number is given and after receiving the Zero FIR, the applicable police station registers a fresh FIR and starts the research.
- The provision of Zero FIR got here up after the recommendation inside the record of the Justice Verma Committee, constituted after the 2012 Nirbhaya case.
- **Purpose:** The provision is meant to offer rapid redressal to the victim in order that timely motion may be taken after the filing of the FIR.

Cryogenics

In News: The recent study of how to get to low temperatures and of how materials behave when they get there was seen in the news .

- It is the technology of materials at temperatures below negative 153 degrees C.
- The technology with the aid of which materials are cooled as much as this temperature are collected under the term refrigeration.
- Prof. Kamerlingh Onnes of the University of Leiden in the Netherlands first used the phrase in 1894 to explain the artwork and technology of producing low temperature.
 - He used the phrase in connection with the liquefaction of everlasting gas along with oxygen, nitrogen, hydrogen, and helium.
- Cryogenics deals with thermal conditions in which even the substances that we come across in our day by day lives as gas — inclusive of hydrogen, nitrogen and, of course, the air in our environment — are liquid.
 - This subject usually uses helium and nitrogen as the cryogenic fluid, the component that cools a substance.
- **Applications:** Magnetic resonance imaging (MRI) gadgets utilized in clinical diagnostics use cryogenic fluids to chill their magnets.
- ISRO has completed a chief milestone in the human score of its CE20 cryogenic engine that powers the cryogenic level of the human-rated LVM3 launch vehicle for Gaganyaan missions.

Eurasian Otter

Recent News:

A Eurasian otter was recently tagged with a radio transmitter for the first time in India at the Satpura Tiger Reserve in Madhya Pradesh.

Details:

- The Eurasian otter (*Lutra lutra*) is a semiaquatic mammal known for its elusive nature and playful behaviour.
- This species has a varied diet that includes fish, crustaceans, amphibians, reptiles, birds, eggs, insects, and worms.
- It is primarily nocturnal and can be found in freshwater environments, although in some regions like the Scottish Isles, it forages in the sea and then washes off the salt in freshwater pools.
- The Eurasian otter is solitary but can sometimes be seen in family groups consisting of a mother and her offspring.

Operation Meghdoot

Recent News:

The Indian Army recently celebrated the 40th anniversary of 'Operation Meghdoot', a mission that was launched to secure the Siachen Glacier.

Details:

- The operation was a response to what India deemed as Pakistan's "cartographic aggression" in the uncharted territory of Ladakh, specifically north of map reference NJ9842, where the Line of Control (LoC) was agreed upon by both countries.
- The main goal of Operation Meghdoot was to prevent the Pakistan Army from seizing the Sia La and Bilafond La passes.
- Launched on April 13, 1984, this military action was significant as it was the first assault on the world's highest battlefield.
- It showcased exceptional coordination and synergy between the Indian Army and Air Force, resulting in Indian troops gaining control over the entire Siachen Glacier.
- The Siachen Glacier holds immense strategic importance, situated at around 20,000 feet in the Karakoram Mountain range.
- It dominates various key areas such as the Shaksgam Valley in the north, routes from Gilgit Baltistan to Leh in the west, and the ancient Karakoram Pass in the east.
- Additionally, it overlooks a significant portion of Gilgit Baltistan, an Indian territory illegally occupied by Pakistan in 1948.