

1. Tiger Sharks

Context:

- Recently, the Indian Air Force (IAF) has inducted its first squadron of Sukhoi-30 MKI Aircraft carrying the BrahMos missiles at its Thanjavur base in Tamil Nadu.

About Tiger Sharks:

- It is the newly reinstated 222-squadron, also known as the Tiger Sharks, would serve as a lethal weapons platform capable of carrying both aerial and maritime roles in the Indian Ocean Region.
- Its base at Thanjavur, strategically located in the southern peninsula. It can dominate the seas and provide very close and integrated support to the Indian Navy. It can also provide support to the land forces.
- The Sukhoi-30 MKI aircraft integrated with the supersonic cruise missiles BrahMos is the strongest maritime combination that India has, in terms of weapon capability.

About BrahMos:

- It is a medium-range ramjet supersonic cruise missile that can be launched from submarines, ships, aircraft or land.
- It is a joint venture between the Russian Federation's NPO Mashinostroyeniya and India's Defence Research and Development Organisation (DRDO).
- The name BrahMos is a portmanteau formed from the names of two rivers, Brahmaputra and Moskva of Russia. It is the world's Fastest Anti-Ship cruise missile in Operation.

2. XENOBOT

Context:

- Recently, Scientists in the United States have created the world's first "living machines" — tiny robots built from the cells of the African clawed frog that can move around on their own.

About:

- They have named the millimetre-wide robots "xenobots" after the species of aquatic frog found across sub-Saharan Africa from Nigeria and Sudan to South Africa, *Xenopus laevis*.
- They can walk and swim, survive for weeks without food, and work together in groups.
- It can move toward a target, perhaps pick up a payload (like a medicine that needs to be carried to a specific place inside a patient) and heal themselves after being cut.

- Being non-toxic and having a lifespan of about a week, these could be a Novel Vehicle for Intelligent Drug Delivery.
- They could also be modified to digest toxic waste products, aiding clearing of arterial blockages, and even identify cancers that current medical technology is unable to do.
- The “novel living machines” were “neither a traditional robot nor a known species of animal”, but “a new class of artifact: a living, Programmable Organism”.

3. Pulse Polio Programme

Why in News?

- The beginning of this year’s Pulse Polio Programme was inaugurated from the Rashtrapati Bhavan itself. To prevent the virus from coming to India, the government has since March 2014 made the Oral Polio Vaccination (OPV) mandatory for those travelling between India and polio-affected countries.

Highlights:

- India launched the Pulse Polio immunisation programme in 1995, after a resolution for a global initiative of polio eradication was adopted by the World Health Assembly (WHA) in 1988.
- Children in the age group of 0-5 years are administered polio drops during national and sub-national immunisation rounds (in high-risk areas) every year.

India is Polio-Free:

- According to the Ministry of Health, the last polio case in the country was reported from Howrah district of West Bengal in January 2011.
- The WHO on February 24, 2012, removed India from the list of countries with active endemic wild polio virus transmission.
- Two years later, the South-East Asia Region of the WHO, of which India is a part, was certified as polio-free.

Polio:

- The WHO defines polio or poliomyelitis as a highly infectious viral disease, which mainly affects young children.
- The virus is transmitted by person-to-person, spread mainly through the faecal-oral route or, less frequently, by a common vehicle (e.g. contaminated water or food) and multiplies in the intestine, from where it can invade the nervous system and can cause paralysis.

- Initial symptoms of polio include Fever, Fatigue, Headache, Vomiting, Stiffness in the Neck, and Pain in the Limbs. In a small proportion of cases, the disease causes paralysis, which is Often Permanent.
- There is no cure for polio, it can only be prevented by Immunization.

4. IVF helping White Rhino Population to Increase

Why in News?

- Researchers said that they have created another embryo of the nearly extinct northern white rhino, a remarkable success in an ongoing global mission to keep the species from Going Extinct.

Highlights:

- The Kenyan conservancy looking after the last male northern white rhino was forced to euthanise it in March 2018.
- The death of Sudan, who was earlier at the Dvur Kralove Zoo in the Czech Republic, left the world with only two northern white rhinos.
- The northern white is one of the two subspecies of the white (or square-lipped) rhinoceros, which once roamed several African countries south of the Sahara.
- The other subspecies, the southern white is, by contrast, the most numerous subspecies of rhino, and is found primarily in South Africa.
- Scientists created a test-tube embryo by fertilising the egg of a southern white female with the frozen sperm of a northern white male.
- The embryos have been preserved in liquid nitrogen, and will be transferred to a southern white surrogate.
- Since the gestation period for a rhino could be 18 months, the first northern white calf is expected to arrive in the world in 2022.
- The ultimate goal, scientists say, is to create a herd of perhaps five northern white rhinos that could be returned to the wild.

Indian Rhinoceros:

- The Indian rhinoceros, also called the greater one-horned rhinoceros and great Indian rhinoceros, is a rhinoceros species native to the Indian subcontinent.
- It is listed as Vulnerable on the IUCN Red List.
- **They can be found in:**

1. Kaziranga National Park
2. Jaldapara National Park
3. Pobitora Wildlife Sanctuary
4. Orang National Park
5. Gorumara Dudhwa National Park
6. Manas National Park
7. Katarniaghat Wildlife Sanctuary

5. Drone Census

Tag: Governance

Why in News?

- India's first drone census has seen only 2,500 Ownership Acknowledgment Numbers (OANs) being issued by the Ministry of Civil Aviation (MoCA) since five days of beginning.

Drone Census:

- The MoCA had issued a notice providing a one-time opportunity for voluntary disclosure of all drones and operators starting from January 14.
- The DGCA issued the Civil Aviation Requirements (CAR), Section 3 – Air Transport Series X, Part I, Issue I, dated August 27, 2018 regulates use of drones.
- It provides the process for obtaining Unique Identification Number, Unmanned Aircraft Operator Permit (UAOP) and other operational requirements; there are drones that do not comply with the CAR. If a drone is not enlisted by 5 p.m. on January 31, then it will most definitely be confiscated.
- After January 31, only authorised retailers will be allowed to sell them after uploading buyers' Know your Customer (KYC) and sale invoice, similar to the sale of mobile phones and cars.

Significance:

- The exercise will give the government a picture of who owns what kind of drone in which part of the country.
- It will help in making policy decisions that should ideally become the base for understanding the scale of operations.