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- News: Tantalum
- Recently, Tantalum has been discovered in the sands of the Sutlej River in Punjab by a team of researchers from the Indian Institute of Technology (IIT), Ropar.

Tantalum

- Tantalum is a rare metal with the atomic number 73. It was first discovered in 1802 by Swedish chemist Anders Gustaf Ekenberg.
- It is grey, heavy, and highly corrosion-resistant, forming an oxide layer when exposed to air.
- Pure tantalum is ductile, allowing it to be stretched into thin wires without breaking.
- Extremely resistant to chemical attack at temperatures below 150°C, it is affected only by hydrofluoric acid, acidic solutions with fluoride ions, and free sulphur trioxide.
- Tantalum also has an extremely high melting point.

Uses of Tantalum

Electronic Sector

- Capacitors made from tantalum are vital for storing more electricity in smaller sizes, ideal for portable electronic devices.
- A committee of experts within the Ministry of Mines has recognized a collection of 30 critical minerals for India, with Tantalum being among them.
- It is also used to make components for chemical plants, nuclear power plants, aeroplanes, and missiles.

Substitute for Platinum

- It has a high melting point, and is frequently used as a substitute for platinum, which is more expensive.

Medical Applications

- Tantalum does not react with bodily fluids and is used to make surgical equipment and implants, like artificial joints, according to the US Department of Energy.

Cutting-Edge Material

- Composite with tantalum carbide (TaC) and graphite is one of the hardest materials, used in high-speed machine tool cutting edges.

Significance of the Discovery of Tantalum in Sutlej

- The discovery of tantalum in the Sutlej River sand indicates that there may be a potential source of tantalum in India, which could reduce the dependence on imports and increase the domestic supply.
- India imports most of its Tantalum metal from the United States, United Kingdom, and Germany.
- The discovery of tantalum can help in enhancing India's electronics and semiconductor Industry.