Prelim Bits 01-10-2022 | UPSC Daily Current Affairs

Global Innovation Index 2022

The 15th edition of the Global Innovation Index 2022 was released by the World Intellectual Property Organization (WIPO).

- The Global Innovation Index (GII) was published by WIPO, in partnership with the Portulans Institute.
- It reveals the most innovative economies in the world.
- It ranks the innovation performance of 132 economies while highlighting innovation strengths and weaknesses.
- It ranks the countries based on their innovation capabilities, including roughly 80 indicators, grouped into **innovation inputs and innovation outputs**.
    1. Innovation inputs capture the efforts made by the country to boost innovation.
    2. Innovation outputs measure the results of these efforts in terms of scientific publications, patents, trademarks, production, exports and other outputs.
- The 2022 edition of the GII tracks the global innovation trends against the background of an ongoing COVID-19 pandemic, slowing productivity growth and other evolving challenges.
- **Findings** - As per GII 2022, Switzerland is the most innovative economy in the world in 2022 - for the 12th year in a row - followed by the US, Sweden, the UK and the Netherlands.
- China is nearing the top 10, and has been ranked at 11.
- India has climbed 6 spots and has been ranked 40th in the GII 2022 (46th rank in GII 2021).
- India is the innovation leader in the lower middle-income group. It continues to lead the world in ICT services exports.
- **Similar Links** - India Innovation Index Report 2020

Reference

1. https://pib.gov.in/PressReleasePage.aspx?PRID=1863536
2. https://www.wipo.int/global_innovation_index/en/2022/
3. https://economictimes.indiatimes.com/news/economy/indicators/india-breaks-into-top-40-innovative-nations-ranking/articleshow/94540108.cms
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Hurricane Storm Surge

- Storm surge is an **abnormal rise of water generated by a storm**, over and above the predicted astronomical tides.
- As a hurricane reaches the coast, it pushes a huge volume of ocean water ashore. This is called storm surge.
- This surge appears as a gradual rise in the water level as the storm approaches.
- Water level heights during a hurricane can reach 20 feet or more above normal sea level.
- With powerful waves on top of it, a hurricane's storm surge can cause catastrophic damage.

Storm surge should not be confused with storm tide, which is defined as the water level rise due to the combination of storm surge and the astronomical tide.

- **Factors determining the height of storm surge** - Storm surge begins over the open ocean.
- The strong winds of a hurricane push the ocean waters around and cause water to pile up under the storm.
- The low air pressure of the storm also plays a small role in lifting the water level.
- The height and extent of this pile of water depend on the strength and size of the hurricane.
- As this pile of water moves toward the coast, other factors can change its height and extent.
- The **depth of the sea floor** is a factor. If a coastal area has a sea floor that gently slopes away from the coastline, it's more likely to see a higher storm surge than an area with a steeper drop-off.
- The **shape of the coastline** can also shape the surge. When storm surge enters a bay or river, the geography of the land can act as a funnel, sending the water even higher.
- **Ocean tides** can also strengthen or weaken the impact of storm surge.
- **Impacts** - At high tide, the water is already at an elevated height. If landfall happens at high tide, the storm surge will cause even higher water levels and bring more water further inland.
- Sea level rise is another growing concern that influences storm surge.
- When a hurricane arrives, the higher ocean means storm surge can bring water further inland, to a more dangerous and widespread effect.

Reference

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2. https://www.nhc.noaa.gov/surge/
3. https://graphics.reuters.com/STORM-IAN/gkvlgrxldpb/

National Informatics Centre

The Government of India has issued Request for Proposal (RfP) for NIC's organizational restructuring.

The proposal is to develop restructuring plan and implement roadmap to fulfil its vision to make India a $1 trillion digital economy by 2024-25.

- The National Informatics Centre (NIC) was established in 1976 and is located in New Delhi.
- It comes under the Ministry of Electronics and Information Technology (MeitY).
- Its main objective is to provide **technology-driven solutions to the Central and State Governments**.
- It has developed digital governance platforms including MyGov, PM-Kisan, National Power Portal, and e-Shram.
- It offers free services to state government entities and funded by the Central budget.
- Its main work is to shift the **operating expenditure (OpEx) model** from **current capital expenditure (CapEx).**
- It also maintains National Data Centres in different states and 37 small Data Centres across the country.

Reference

1. https://www.thehindu.com/news/national/centre-looks-to-revamp-national-informatics-centre-its-tech-arm/article6595491ece
2. https://www.business-standard.com/article/economy-policy/meity-to-revamp-46-yr-old-national-informatics-centre-make-future-ready-122093001162_1.html

Black Cocaine

In mid-1980 a secret black cocaine laboratory was built by a dictator's army which could not be detected by law enforcement agencies.

- It is a rare drug, which is a mixture of regular cocaine and other chemicals. This turns it in to turn black in colour.
- It is used by drug peddlers coming to India from South American countries.
- Mixture of cocaine hydrochloride with pigments can make drug sniffing dogs undetectable.
- It neutralises the smell of cocaine so that it can pass through checkpoints easily.
- Pure cocaine base can be recovered from the mixture by extraction of methylene chloride or acetone.
- Mumbai is one of the landing points from where it is distributed especially to other metro cities and Goa.

Reference

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Enceladus Ocean

Recently. scientists discovered evidence for life in one of the moons of Saturn.

- Enceladus is one of the moons of Saturn.
- It is discovered that beneath its icy surface are oceans.
- It is rich in dissolved phosphorus, an essential ingredient for life.
- The space craft **Cassini,** which orbited Saturn for nearly 13 years, discovered Enceladus's subsurface liquid water.
- From the cracks of moon's icy surface, plumes of ice grains and water vapour erupted into space.
- The plume contains almost all the basic requirements of life.

  Phosphorus is used for the creation of DNA and RNA, energy-carrying molecules, cell membranes, bones and teeth in people and animals, and even the sea's microbiome of plankton.

- Phosphorus in the form of phosphates is also vital for all life on Earth.
- But, phosphorus is yet to be identified as its availability in the ocean beneath the moon's icy crust.
- By Cassini, scientists predicted that phosphate minerals would be unusually soluble there.
- **Related Links** - Saturn Moon

Reference

1. https://www.thehindu.com/sci-tech/science/where-is-the-enceladus-ocean/article65945164.ece

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