

1. 5G technology

Topic: Science and Technology

Where 5G technology can be applied

- Healthcare**
 - Reduce pharmaceutical R&D costs
 - Video/3D video appointments for non-life-threatening ailments
 - Development of robotics in surgery
 - More efficient health and fitness monitors
- Smart cities and homes**
 - 3D video calls and holograms
 - Innovative augmented and virtual reality applications
 - Improved public safety with more efficient trackers
 - Remote device control
- Transport**

Connected vehicles which allow data collection from traffic signals and road-side sensors will lead to

 - Reduced congestion
 - Intelligent fleet and logistics management

Autonomous cars with little or no help from humans can

 - Improve road safety
 - Increase mobility



In News: The Prime Minister Narendra Modi has launched 5G services recently.

More on the Topic:

- The launch of 5G services follows years of intense preparation. Recently, 5G spectrum auctions were conducted successfully and 51,236 MHz was allocated to telecom service providers with a gross revenue of ₹1,50,173 crore.
- It is expected that 5G services will be available across the country over the next couple of years.

About 5G Technology:

- The fifth-generation mobile network is popularly known as 5G.
- The 5G network will operate in the **millimetre-wave spectrum (30-300 GHz)** which can send large amounts of data at very high speeds as the frequency is very high, and it experiences little interference from surrounding signals.



- 5G is the latest upgrade in **the long-term evolution (LTE) mobile broadband networks**.
- In the high-band spectrum of 5G, **internet speeds have been tested to be as high as 20 Gbps (gigabits per second)**.

Significance of 5G:

- 5G has the potential to create a **cumulative economic impact of \$1 trillion in India by 2035**, according to a report by a government-appointed panel.
- 5G is would form the backbone of emerging technologies such as **the Internet of Things (IoT) and machine to machine communications**.
- It is expected to be supporting a much larger range of applications and services, including driverless vehicles, tele-surgery and real time data analytics.
- One of the primary applications of 5G will be **implementation of sensor-embedded network that will allow real time relay of information across fields** such as manufacturing, consumer durables and agriculture.
- 5G can also help make **transport infrastructure more efficient** by making it smart.

Challenges for 5G Rollout in India:

- There is a need to **upgrade fibre connectivity across India**, which at present connects only 30% of India's telecom towers. It should be at least double.
- The **ban on certain foreign telecom OEMs** (original equipment manufacturer) upon which most of the 5G technology development depends, presents a hurdle in itself.
- In India, the telecom sector is **facing capital augmentation issues** which need to be resolved. Non-availability of funds for investment: Many of the Indian operators are also weighed down by debt.
- Way Ahead:
- There is need to **bridge rural urban divide** in the telecom technologies including 5G.
- The country needs to encourage and boost its **local 5G hardware manufacturing** at an unprecedented rate if it needs to realise the 5G India dream.
- Appropriate test-beds and technology platforms needed to enable and help Indian technical ecosystem to have an edge in 5G.

Source: Indian Express

2. Stockholm Convention

Topic: Environment and Ecology



In News: The 18th meeting of the Persistent Organic Pollutants (POP) Review Committee (POPRC-18) to the Stockholm Convention has concluded recently.

More on the Topic:

- The meeting included five more chemicals in its agenda.
- It recommended listing of **Dechlorane Plus (flame retardant)** and **UV-328 (stabiliser) under Annex A of the Stockholm Convention.**
- On **medium chain chlorinated paraffins (flame retardant)** and **Long-Chain Perfluorocarboxylic Acids (PFCAs)**, risk management evaluations will be prepared for consideration at the next Committee meeting.
- **On chlorpyrifos (Pesticide)**, committee decided to defer its consideration of the draft risk profile

About Stockholm Convention:

- Stockholm Convention is an **international environmental treaty that aims to eliminate or restrict the production and use of POPs** or the substances that persist in the environment and pose risk to our health.
- It was Signed in 2001 and effective from May 2004 (Ninety days after the ratification by at least 50 signatory states).
- It is legally binding.
- **India ratified the Stockholm Convention in 2006.** Ministry of Environment had notified the '**Regulation of POP Rules**' in 2018, under the **Environment (Protection) Act, 1986.**

Characteristics of POPs:

- POPs are **lipophilic, which means that they accumulate in the fatty tissue** of living animals and human beings.
- **In fatty tissue, the concentrations can become magnified by up to 70,000 times higher than the background levels.**

- As you **move up the food chain**, concentrations of POPs tend to increase so that animals at the top of the food chain such as fish, predatory birds, mammals, and humans tend to have the greatest concentrations of these chemicals.
- They adversely affect human health/ environment.

Source: Indian Express

3.RBI hikes Repo Rates

Topic: Indian Economy



In News: Reserve Bank of India has hiked repo rate by 50 basis points.

More on the Topic:

- Home, auto and other loans are set to become costlier as the Reserve Bank of India (RBI) raised the benchmark lending rate 50 basis points to 5.90 per cent, the highest since April, 2019.
- The move is intended to control inflation.
- This is the fourth time since May the monetary policy committee (MPC) of the RBI has raised the repo rate, with the total increase at 190 basis points.

About Repo Rate:

- Repo rate is defined as **the rate of interest at which the Reserve Bank of India (RBI) lends money to commercial banks.**
- "Repo" stands for **Repurchase Agreement or Repurchasing Option.** Banks avail loans from the central bank (the RBI) by selling eligible securities.
- An agreement between the central bank and the commercial bank will be made to **repurchase the securities at a price that is predetermined.**
- This is done when banks **face a shortage of funds or need to maintain liquidity** in volatile market conditions.
- The RBI uses the repo rate to control inflation rates.

About Inflation:

- The term "inflation" refers to a rise in a broad price index representing the overall price level for goods and services in the economy.

Source: Hindu

4. National Informatics Centre (NIC)

Topic: Governance



In News: The government has issued a Request for Proposal (RFP) for selection of a consultant for NIC's organizational restructuring.

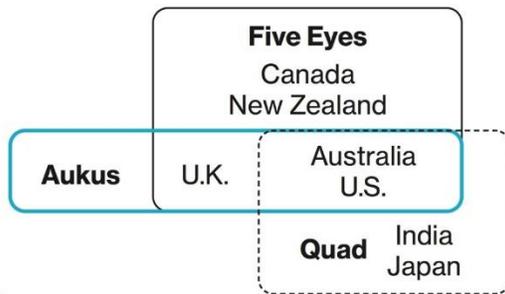
More on the Topic:

- The National Informatics Centre (NIC) is an **Indian government department under the Ministry of Electronics and Information Technology (MeitY)**.
- The NIC provides infrastructure, IT Consultancy, IT Services including but not limited to architecting, design, development and implementation of IT Systems to Central Government Departments and State Governments thus enabling delivery of government services to Citizens and pioneering the initiatives of Digital India.
- SVAMITVA, Bhavishya, PM-KISAN, National Judicial Data Grid etc. are provided by NIC.
- It also provides services such as Command and Control Centre, Domain Registration, National Knowledge Network etc.

Source: PIB

5. The AUKUS alliance

Topic: International Relations



Aukus

Security pact announced Sept. 15 with initial goal of helping Australia acquire nuclear-powered submarines

The Quad

Informal alliance that began with joint relief and rescue efforts following 2004 Indian Ocean tsunami

In News: China has withdrawn anti-AUKUS resolution at IAEA due to lack of support.

More on the Topic:

- India worked closely with many IAEA member states to ensure that the draft resolution, which argued that the AUKUS initiative violated the responsibilities of Australia, the UK and the US under the Nuclear Non-Proliferation Treaty (NPT), did not get majority support.
- AUKUS is a **new three-way strategic defence alliance between Australia, the UK and US.**
- It aims to build a **class of nuclear-propelled submarines, work together in the Indo-Pacific region, where the rise of China is seen as an increasing threat,** and develop wider technologies.
- The alliance has largely been seen as a response by the three countries to the increasingly aggressive and assertive behaviour of China across the Indo-Pacific.

Source: PIB

6. Bharat Skills Forum

Topic: Government Schemes



In News: The Directorate General of Training (DGT) has launched Bharatskills Forum, a digital knowledge-sharing platform for the ITIs' trainees, trainers and industry.

More on the Topic:

- This facility shall act as a **digital warehouse for the skilling community** by allowing sharing of contents in various forms like handwritten trainers' or trainees' notes, PDFs, scanned copies, or recorded videos in any language.
- The Directorate General of Training (DGT) in the Ministry of Skill Development and Entrepreneurship (MSDE) is **the apex organisation for development and coordination at national level for the programmes relating to vocational training.**
- DGT in Oct 2019 had launched an online learning platform called the Bharatskills, a Central Digital Repository for the trainees and trainers of the ITI ecosystem, providing easy access to updated curriculum, e-books, Question Banks, mock/practice papers, learning videos, etc. enabling anytime, anywhere learning outside the classrooms.
- This platform presents **unique access to a centralized, scalable, and thriving support ecosystem through its industrial partners for the students and teachers** who can now learn the new age (Industrial Revolution 4.0) skills to meet the demands of the industry.

Source: PIB

7. International Mobile Equipment Identity (IMEI)

Topic: Science and Technology

International Mobile Equipment Identity (IMEI)

- Mobile station equipment identity
- Purpose of the IMEI is to prevent the theft of mobile stations.
- Burned into the Mobile phone





In News: The Department of Telecommunications (DoT) has made it mandatory for mobile phone manufacturers to register the International Mobile Equipment Identity (IMEI) of all handsets made in India with the government.

More on the Topic:

- Importers, too, will have to register with the government the IMEI number of each phone before importing it.
- The IMEI is a **unique number that is used to identify a device** on a mobile network. It has **15 digits and is like a phone's unique identity**.
- The number is used to verify the identity of a device when a user uses the Internet or places a call through it.
- Phones with a **dual-SIM option have two IMEI numbers**, one for each SIM. The IMEI number can help network providers track down a device in case it gets stolen or is lost.
- Once such loss or theft is reported, the carriers can deny the device access to the cellular network even with a new SIM card.

Source: Hindu
