5G Trials

Why in news?

Recently, Department of Telecommunications has allowed state-run and private telecoms to start trials for 5G technology.

What is 5G technology?

- 5G or fifth generation is the latest upgrade in the long-term evolution mobile broadband networks.
- It offers exponentially faster download and upload speeds, delivers multi-Gbps (giga bits per second) peak rates and has ultra-low latency.
- It mainly works in 3 bands, namely low, mid and high-frequency spectrum — all of which have their uses and limitations.

What are the various bands in the Spectrum?

- **Low band:** This spectrum has shown great promise in terms of coverage and speed of internet and data exchange and the maximum speed of this band is limited to 100 Mbps (Megabits per second).
- This means that telecoms can use and install it for commercial cell phone users who do not have specific demands for very high speed internet.
- **Mid-band:** This spectrum offers higher speeds compared to the low band but it has limitations in terms of coverage area and penetration of signals.
- Telecoms, which have taken the lead on 5G, have indicated that this band may be used by industries and specialised factory units.
- This is used to the build captive networks that can be moulded according to the needs of that particular industry.
- **High-band:** This spectrum offers the highest speed of all the three bands but it has extremely limited coverage and signal penetration strength.
- The internet speeds is tested to be as high as 20 Gbps, while, in most cases, the maximum internet data speed in 4G is recorded at 1 Gbps.

How are telecoms functioning in the market?

- Currently, the telecom market in India is left with only three private telecoms.
- Rest of the companies have surrendered due to the low returns on

investments over the years.
- Apart from the private telecoms, two state-run companies, MTNL and Bharat Sanchar Nigam Limited (BSNL) have survived but they are too making losses.
- Earlier standing committee of Lok Sabha on Information Technology censured the government for certain reasons.
- This includes delays in approvals, inadequate availability of spectrum, high spectrum prices, poor development of use cases and low status of fiberisation among others.
- For this reason, the panel said that India could miss the 5G bus.

Why are the trials for 5G technology important?

- By conducting trials in a variety of circumstances (semi-urban and rural areas), telecoms will offer the new 5G technology as soon as possible.
- This will increase their average revenue per user and provides an opportunity to expand to the untapped market.
- Also, it is important for the government to roll out the new technology as soon as possible.

How 5G trials will be conducted?

- In the initial phase, the trials will be for 6 months, including a 2 month period for procurement and setting up of the equipment.
- In these 6 months, telecoms will be required to test their set up in urban areas, semi-urban areas as well as rural areas.
- During this period, they will be provided with experimental spectrum in various bands- mid-band of 3.2 GHz to 3.67 GHz, millimeter wave band of 24.25 GHz to 28.5 GHz, and others.

Source: The Indian Express

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