**Syllabus subtopic:** Science and Technology- developments and their applications and effects in everyday life Achievements of Indians in science & technology; indigenization of technology and developing new technology.

**Prelims and Mains focus:** about the concerns raised by the operators and the vendors; 5G technology; its advantages and challenges for the govt. in its rollout

**News:** The build-up to introducing 5G services in India is likely to be marred by more acrimony as operators and vendors claimed that onerous conditions laid out by the government will make 5G trials a costly affair even as commercial uses for the new technology have not been established.

**What are the requirements set by the govt.?**

- The key requirement for 5G trials is that it has to be stand-alone, which means all the equipment has to be dedicated for 5G only and none of the existing 4G network and IT infrastructure can be integrated and used for trials.
- This means equipment vendors, who are bearing the entire cost of the trials, will have to import stand-alone gear, which will come into the market only later this year. The cost of a single trial could go up to Rs.80 crore.

**Background**

- In June, DoT had approved a one-year 5G trial period and a one-time fee of Rs. 5,000 for entities seeking experimental spectrum to conduct trials.

- The government also announced its intention to focus on three big social sectors for deployment of 5G—education, agriculture, waste management and healthcare.

- Department of Telecommunications (DoT) initiated the process for deploying 5G in the country on 31 December by meeting major operators and vendors to discuss the broad road map for the trials, which are expected to happen in January-March.
The government will allocate the trial spectrum to its licensees, which are telecom service providers that can then choose to partner with vendors such as Nokia, Huawei, Ericsson and Samsung. Operators have to team up with vendors and submit trial proposals by 15 January.

**Challenges for operators and vendors**

- The biggest worry for vendors is that operators in India are not keen to buy 5G spectrum this year.

- Plus, globally, 5G use-cases are emerging for industrial applications and **not for consumer-centric solutions**. Why will an Indian consumer pay more to download a movie in three seconds with 5G when he can do it in one or two minutes with cheaper 4G service?

- **No ready use-cases are available for rural areas**, which the government is pressing for in trials.

- Earlier this month, DoT approved prices for the next spectrum auction that will happen by April. Of the 8,300 megahertz (MHz) of airwaves the government plans to offer, 6,050MHz have been allocated for 5G. The 3,300-3,600MHz band allocated for 5G has been priced at Rs.492 crore per megahertz. The **Cellular Operators Association of India (COAI)**, which represents operators Bharti Airtel, Reliance Jio and Vodafone Idea, believes that these airwaves are too expensive.

- Moreover, each operator and each vendor has to look at three scenarios for 5G trials—rural, semi-urban and urban use-cases. They want DoT to allows more flexibility on this requirement.

**India’s 5G ambition vis-a-vis other countries**

- To be sure, India’s 5G trials and commercial rollout **are already far behind those of global peers**, which have even deployed commercial networks.

- **South Korea** was the first to commercially start 5G services in April.
China’s state-run telecom operators China Mobile, China Unicom and China Telecom rolled out 5G services in November to consumers in 50 Chinese cities, including Beijing and Shanghai.

- The US’s Verizon Communications kick-started 5G services in October 2018 in Houston, Indianapolis, Los Angeles and Sacramento, using non-standard gear.

**About 5G technology**

5G is the next generation of wireless technology and will boost data speeds and propel the Internet of Things, with the potential to bring radical changes in agriculture, manufacturing, healthcare and education.

**Note:** to read about India’s 5G rollout in detail, click on the link below:

https://www.thehindu.com/business/how-will-a-5g-network-power-the-future/article27698653.ece