



## Mains Practice Question

**Q.** Discuss the challenges and advantages of 5G technology for India. (250 words)

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### Approach

- Briefly highlight the advantages of 5G technology.
- Highlight potential advantages to India in various sectors.
- Highlight challenges that India will face in its adoption.
- Highlight some measures in overcoming such challenges.

### Introduction

5G is fifth-generation wireless communication technology with speed up to 10Gbps, uses optical fibre infrastructure with advantages like faster data speed, ultra-low latency and ability to smoothly run high bandwidth frequency. Such technology will prove beneficial to India in a number of ways.

### Body

#### Advantages of 5G technology

- It will support high-speed data services that have industrial applications like smart grid, smart metering in the energy sector, robotics and precision manufacturing.
- It will support critical infrastructure like health by way of telemedicine, tele-control of surgical robots, financial transactions by integrating secure blockchain technology.
- It will further integrate systems as per 4th Industrial Revolution's needs like Digital economy, Internet of Things, Artificial Intelligence based systems.

All this will propel economic activities with greater productivity, opening newer sectors, development of service-based and knowledge economy leading to greater economic growth, reduction in poverty levels and towards more sustainable development.

However, adoption and integration of 5G technology in India will have to overcome many challenges like:

- The huge investment required from the government for research, manpower and capacity development and by private players in making it a profitable venture. This should be seen in the backdrop of the crisis faced by Telecom companies currently in India.
- It will add to the spectrum cost. Currently, AGR dues have taken a huge toll on Telecom operators in India like Vodafone, Airtel.
- It will require large scale optical fibre connectivity. Currently, such connectivity is limited to metropolitan cities of India while hinterlands surrounding them remain aloof of even good 4G connectivity.
- With a growing digital economy, the threat of cyber attacks will loom large. India already ranks low on the Global Cyber Security index.

To overcome such challenges India has taken the following steps towards smoother and faster adoption of

5G technology:

- BharatNet Project and National Optical Fibre Network towards providing broadband connectivity even in rural areas.
- National Telecom Policy in 2018 provided a roadmap for faster adoption of 5G technology in India.
- Subsidy to Telecom operators in providing wi-fi in rural areas under BharatNet project.
- Discussion underway for spectrum pricing policy for 5G technology.

## Conclusion

Earlier adoption of 5G will help India encash on current programmes like Digital India, Startup India towards becoming a frontrunner in 4th Industrial Revolution driven by enhanced digital connectivity and greater, a diversified market which helps overcome issues like poverty, unemployment, increased presence in the global supply chain.

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