

[Question 1-1] There are four criteria a technology must meet to be a GPT, what are these criteria?

1. Are **pervasive** – spreading to most sectors
2. **Continually improve** in usefulness and lower cost
3. Spawn **innovation in other areas** – making it easier to invent and produce new products or processes
4. Fundamentally **disruptive** and **foundational**

[Question 1-2] Why GPTs are important?

General Purpose Technology (GPT) refers to a category of revolutionary technologies that have the potential to impact economic growth significantly. Examples of GPTs include electricity, automobiles, and computers. These technologies have the power to challenge existing methods of production and invention, replacing them with more efficient and cost-effective alternatives. Consequently, they **bring about substantial improvements to people's lifestyles and economic systems**.

The **pervasiveness of GPTs enables them to benefit multiple aspects**, leading to **increased productivity**. They can also drive down costs and **promote innovation**, providing competitive advantages and improving productivity for businesses. GPTs have the potential to revolutionize our lives, making them easier and more convenient, and contributing to remarkable advancements in society.

[Question 2-1] Can 5G connection be pervasively used in different industries? Explain with a few reasons.

Yes, 5G technology can be widely utilized in different industries. **It has the potential to enhance communication, improve efficiency, reduce costs, and enable remote services.** Industries that can benefit from 5G include healthcare, manufacturing, transportation, entertainment, agriculture, education, and automotive. 5G can support a large number of simultaneous connections while improving speed, latency, reliability, and power consumption for cell phones and Internet of Things (IoT) devices, making areas such as driverless cars, pilotless aircraft, and remote surgery more reliable and secure. Overall, 5G technology has the potential to revolutionize various industries and improve the quality of services provided. Example uses of a 5G connection would be:

- industry*
- Example*
1. **Healthcare:** 5G can enable real-time remote patient monitoring, telemedicine, and surgical procedures that can be performed remotely with the help of augmented reality and virtual reality technologies.
 2. **Manufacturing:** 5G can enable the use of advanced robotics and automation technologies to optimize production processes and reduce human error.
 3. **Transportation:** 5G can be used to improve traffic management systems, enhance vehicle-to-vehicle communication, and support the development of autonomous vehicles.
 4. **Entertainment:** 5G can support the development of high-quality streaming services and augmented reality and virtual reality applications for gaming, sports, and other forms of entertainment.
 5. **Agriculture:** 5G can enable precision farming by providing real-time data on crop health, soil conditions, and weather patterns.

[Question 2-2] Is 5G connection continuously improving and lowering in cost? Give examples of improvement if your answer is yes.

*How
+
Example*

Yes, the 5G connection is continuously improving and becoming more cost-effective as the technology matures and becomes more widely adopted. Ongoing research and development in 5G technology are leading to new advancements in areas such as network architecture, which are improving the performance of 5G networks. The widespread installation of 5G base stations has expanded the coverage area, making 5G more accessible and convenient to users. Furthermore, the growing number of 5G network users has led to an increase in economic benefits, which, in turn, has resulted in further progress and development, including cost reduction.

The 5G module market is expected to steadily evolve with declining prices, and total revenue for 5G IoT modules in the B2B sphere is projected to increase significantly. Although 5G construction and operating costs are initially high, they are expected to decline over time as the technology matures. The ability to upgrade 5G networks through software updates and the reduction of equipment and maintenance costs are further lowering the overall cost of 5G technology.

In summary, the improvement and cost reduction of 5G technology are ongoing and expected to continue in the coming years, making 5G more accessible and convenient for users and businesses.

[Question 2-3] Can 5G connection spawn innovation in other areas by making it easier to invent and produce new products or processes? Explain with a few reasons. *How? Example*

5G connection can spawn innovation in other areas by making it easier to invent and produce new products or processes. The fast internet speeds, stability, and enhanced user experience provided by 5G technology can lead to the development and use of advanced technologies such as augmented reality, virtual reality, and artificial intelligence. This, in turn, can create new applications and services that improve productivity and enhance the customer experience. Additionally, the ability of 5G networks to support a larger number of devices with faster data transfer speeds and lower latency makes it easier to collect and analyse large amounts of data from various sources, enabling businesses to make data-driven decisions and develop new products or services that meet customer needs. 5G technology also offers low latency, faster connectivity, and greater device connectivity, which can enhance the efficiency and productivity of industries such as manufacturing, supply chain management, and the Internet of Things.



[Question 2-4] Is 5G wireless technology fundamentally disruptive and foundational?

Yes and No.

For no, 5G doesn't offer anything that 4G can't already do.

For yes, it has the potential to transform industries, establish new infrastructure, and enable emerging technologies. It replaces old technology and has benefits such as fast speeds and low latency that can transform industries. While 5G may not be essential for daily activities, it has improved people's online experience and has the potential to revolutionize industries such as healthcare.