**Q1 A: Advantages of Wireless Communication**

Mobility and portability

. **Mobility** means changing point of attachment to the network online

. **Portability** means changing point of attachment to the network offline

. **a wireless communication** network is a solution in areas where cables are impossible to install (e.g. hazardous areas, long distances

. **Less cost** for cabling infrastructure and device

. **Increased Scalability**: Wireless systems can be [specifically configured](https://blog.wei.com/the-importance-of-having-a-digital-ready-network) to meet the needs of specific applications. These can be easily changed and scaled depending on your organization’s needs

. **More Flexibility**: Should your network change in the future, you can easily update the wireless network to meet new configurations

**Q1 B: Disadvantages of Wireless Communication**

. Has security vulnerabilities

. unlike wired communication, wireless communication is influenced by physical obstructions, climatic conditions, interference from other wireless devices

. Bandwidth

. Power

. An unauthorized person can easily capture the wireless signals which spread through the air.

. Wireless connections can be obstructed by everyday household items and structures such as walls, ceilings, and furniture

**Q1 C:**  **applications of wireless communication**

Vehicles

Transmission of music, news, road conditions, weather reports, and other **broadcast information** are received via digital audio broadcasting (DAB) with 1.5Mbit/s.

In ad-hoc network, car can comprise personal digital assistants (PDA), laptops, or mobile phones connected with each other using the Bluetooth technology.

Emergency

**Video communication:** Responders often need to share vital information. The transmission of rea Business

Travelling Salesman

Directly access to customer files stored in a central location.

Consistent databases for all agents

In Office

**Wi-Fi** wireless technology saves businesses or companies a considerable amount of money on installations costs.

**Bluetooth** is also a wireless technology especially used for short range that acts as a complement to Wi-Fi. It is used to transfer data between computers or cellphones.

Transportation Industries

In transportation industries, GPS technology is used to find efficient routes and tracking vehicles.

**Q2:**A

IEEE 802.11 refers to the set of standards that define communication for wireless LANs (wireless local area networks, or WLANs). The technology behind 802.11 is branded to consumers as Wi-Fi.

**Q2 B**: Goals

To deliver services in wired networks

To achieve high throughput

To achieve highly reliable data delivery

To achieve continuous network connection.

Q3:

**: IEEE 802.15.1**

Task group one is based on [Bluetooth](https://en.wikipedia.org/wiki/Bluetooth) technology. It defines physical layer (PHY) and [Media Access Control](https://en.wikipedia.org/wiki/Media_Access_Control) (MAC) specification for wireless connectivity with fixed, portable and moving devices within or entering personal operating space

802.15.1, more commonly known as Bluetooth, is a low-data-rate, low-power wireless networking standard aimed at replacing cables between lightweight devices [IEEE802.15.1

**IEEE 802.11**

802.11 refers to a family of specifications developed by the [IEEE](https://www.webopedia.com/TERM/I/IEEE.html) for wireless LAN ([WLAN](https://www.webopedia.com/TERM/W/WLAN.html)) technology. 802.11 specifies an over-the-air interface between a wireless client and a base station or between two wireless clients. The IEEE accepted the specification in 1997.

EEE 802.11 is part of the [IEEE 802](https://en.wikipedia.org/wiki/IEEE_802) set of LAN protocols, and specifies the set of [media access control](https://en.wikipedia.org/wiki/Medium_access_control) (MAC) and [physical layer](https://en.wikipedia.org/wiki/Physical_layer) (PHY) protocols for implementing [wireless local area network](https://en.wikipedia.org/wiki/Wireless_LAN) (WLAN) [Wi-Fi](https://en.wikipedia.org/wiki/Wi-Fi) computer communication in various frequencies, including but not limited to 2.4 GHz, 5 GHz, and 60 GHz frequency bands.

**Q 4:**

