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**Question1: Explain why wired networks have higher bandwidth in comparison to mobile networks. (2)**

**Ans :** As we know "wired" is the term refers to any physical medium consisting of cables. The cables can be copper wire or fiber optic. Wired network is used to carry different forms of electrical signals from one end to the other. But the Wireless network uses radio frequency waves for data or voice communication that's why wired networks have higher bandwidth in comparison to mobile networks.

**Question2: Explain the relation between miniaturization and portability. (3)**

**Ans:** In portability we can minimize size of the chipdet to a specific limit so it can be carry

By hand and In miniuaturization there are no specific limits to reduce the size of chipset we can reduce as we can.

**Question3: Differentiate between convergence and divergence. (3)**

**Ans: Convergence:**

Integrating emerging types of digital mobile devices into hybrid devices.

Example : Personal Digital Assistants, mobile phones, cameras, games etc.

**Divergence:**

Opposite approach to interaction design by promoting information appliances with specialized functionality rather than generalized ones.

**Example:**

TV remote.

**Question4: Suppose you are given the task of designing an app for mobile devices which has the capabilities of text chat, recorded audio message, and live video**

conferencing. Explain which protocol out of UDP and TCP would you use for each type of service and why? (4)

**Ans:** We are using app and for this we would use IP (internet protocol) and here we are not following UDP and TCP protocol because we have to deliver or receive text, Audio and video in packets with the help of OSI model.

**Question5:** Suppose you have the choice of using 2G, 3G, 4G, 5G, Wi-Fi and Satellite networks. Which of these technologies will you use in the following scenarios and why. (18)

- a) A city wide network with voice, SMS services and Internet services good enough for ultra-high definition streaming and video conferencing.

**Ans:** In this scenario we will use the 4G network because 4G network provide simultaneously communication throughout the city. It is best for streaming because it can handle server peoples at a time.

- b) A city wide network with only voice and SMS services.

**Ans:** In this scenario 2G network is suitable because we are not using any online streaming and other internet services.

- c) A city wide network with voice, SMS services and Internet services good enough for normal definition streaming and video conferencing.

**Ans:** In this scenario 3G network will be suitable because we are using normal definition streaming And 3G is the best for normal streaming.

- d) A global scale network with voice, SMS and Internet services.

**Ans :** In this scenario Satellite networks will be suitable because 2G, 3G and 4G are not supported for global scale communication or global internet services. In global scale people are connected through all the world.

- e) A campus size network for information and resource sharing between 200 end devices.

**Ans:** In this scenario wifi would be suitable because we are sharing resources and information within a institution and a campus with a limited range.

- f) A city wide network with voice, SMS and basic Internet services.

**Ans:** In this scenario 5G would be the best network for basic sharing data and internet services.