

## **Important Instructions:**

- 1) Open this MS-Word document and start writing answers below each respective question given on page 2.**
- 2) Answers the question in the same sequence in which they appear.**
- 3) Provide to the point and concrete answers.**
- 4) First read the questions and understand what is required of you before writing the answer.**
- 5) Attempt the paper yourself and do not copy from your friends or the Internet. Students with exactly similar answers or copy paste from the Internet will not get any marks for their assignment.**
- 6) You can contact me for help if you have any doubt in the above instructions or the assignment questions.**
- 7) All questions must be attempted.**
- 8) Do not forget to write your name, university ID, class and section information.**
- 9) Rename you answer file with your university ID# before uploading to SIC.**
- 10) When you are finished with writing your answers and are ready to submit your answer, convert it to PDF and upload it to SIC unzipped, before the deadline mentioned on SIC.**

---

**Mid Semester Assignment, Course: - Mobile Computing**

**Deadline: - Mentioned on SIC**

**Marks: - 30**

**Program: - BS (CS), BS-SE**

**Dated: 13 April 2020**

---

**Student Name: M Mehran Khan Student ID#:12934**

**Class and Section: (A)**

---

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

**Answer:**

As we know that wired networks have high bandwidth as compared to the mobile networks because wired networks use wires for connectivity and the speed of wired networks can arrive to 5 gigabit per second but the mobile networks reach to 1 gigabit per second. That why wired networks have high bandwidth as compared to mobile networks.

Electricity is faster than radio waves that's why wired networks are higher bandwidth.

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

**Answer:**

Miniaturization and portability relation are of that kind that if we want to reduce the size of the hardware it must be portable that is easily move from one place to another and it is also miniaturized that work like the big one.

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

**Answer:**

**Convergence**

Developing devices and applications that allowed users to be online and communicate via wireless data networks while on the move

**Divergence**

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

**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)**

**Answer:**

For designing an app for mobile devices which has the capabilities of text chat, recorded audio message, and live video conferencing I will use TCP protocol because UDP protocol is not the best choice for sending of text messages because UDP packets are blocked by proxies and it not gives guarantee packets delivery. So TCP is best for that text messages.

UDP is faster than TCP & UDP is commonly used for video and audio calling and also send audio messages.

**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.

**Answer:**

4G and 5G is best for it because 3g and 2g not support HD streaming and as we know Wi-Fi is not available anywhere and satellite system are only used by national and its high level.

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

**Answer:**

2g and 3g is best for it because 4g and 5g is not available everywhere and here is low rate of transferring data so satellite is not best option because satellite is for high level communication only.

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

**Answer:**

3G and 4G both provide streaming with good quality & also video conferencing.

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

**Answer:**

Satellite is best option for it because here we have to transfer large number of data at global scale and no other technology can provide such kind of work.

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

**Answer:**

Wi-Fi is best for it because it is a campus network so Wi-Fi can provide such type of work.

**Example:**

If we are working in office and the IT Dept send some information on portal so for collecting that information we have to connect to Wi-Fi.

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

**Answer:**

2g and 3g can provide us voice SMS services. from 2g and 3g basic internet is achievable to get voice and SMS services and it is available easily in the city.