

## **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.**

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

**Deadline: - Mentioned on SIC**

**Marks: - 30**

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

**Dated: 13 April 2020**

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**Class and Section: BS SE - B**

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

**Answer1:** Wired network is very faster as consider to wireless networks. Because there is a separate cable used to connect with each devices to the network with each cable transmitting data at the same speed.

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

**Answer2:**

- 1) Miniaturization is to create new and significantly smaller mobile form factors that allowed the use of the personal mobile devices while on the move.
- 2) Portability reduce the size of hardware to enable the creation of computers that could be physically move around relatively easily.

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

**Answer3:**

- 1) Convergence is the integrating emerging types of digital mobile devices. Namely are Personal Digital Assistants (PDAs) and mobile phones , music player , cameras , games.
- 2) Divergence is the 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)**

**Answer4:** The protocol out of UDP and TCP you use for each type of service are; Session initiation protocol (SIP). This protocol let us and internet telephony features to our application this protocol integrated call management services that set up outgoing and the

**incoming calls video conferencing and instant messaging is example of an application which use (SIP) protocols. We use this protocol because it transmit real time session like video call, text chat and audio message between to end point..**

**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.**
- b) A city wide network with only voice and SMS services.**
- c) A city wide network with voice, SMS services and Internet services good enough for normal definition streaming and video conferencing.**
- d) A global scale network with voice, SMS and Internet services.**
- e) A campus size network for information and resource sharing between 200 end devices.**
- f) A city wide network with voice, SMS and basic Internet services.**

**Answer5:**

- a) We will use 5g in this case and the frequency of this network is 24 to 86GHz and data rate is 1gbps to unlimited which is best for the mentioned services.
- b) In this case we will use 2g. frequency of this network is approximately 1.8 GHZ which is able for voice and SMS service.
- c) 4g will be use in this case and Frequency of this network is 2 to 8GHz and data rate is 100mbps to 1gbps which is able for mentioned service.
- d) In this case we will use satellite because Through which we can access remote and may be global users.
- e) We will use Wi-Fi in this case where each device is connected through wire.
- f) 3g will be use in this case and Frequency of this network is 1.6 to 2.0 GHz and data rate 144kps to 2mbps which is able for SMS voice and internet services.