

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

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Student Name: Mobeen Liaqat

Student ID#:13278

Class and Section: BSSE 8 Sec A

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

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

Question3: Differentiate between convergence and divergence. (3)

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)

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.

Ans1: Wired Networks have higher bandwidth as compared to wireless networks because in wired networks a separate wire is used to connect every network device to the network with separate wire sending data at the same speed. The wired network is never broke down by any unexpected or heavy traffic.

Ans2: Miniaturization is the development of new, powerful and smaller in size chips to make a hardware device to perform it's task more accurately and quickly. The Miniaturization is the advancement of new powerful chips which combine together to form an accurate and reliable device.

Portability is a technique of reducing the size of the device. In portability the size of the device is reduced while the performance and reliability of the system is increased. The systems can also be moved from one place to another which can be portable.

Ans3: Convergence is a method of combining similar objects and making a class of that similar objects. While Divergence is the opposite of convergence in which a class is broken into two or more than two objects which separately form a class.

Ans4: For Text Chat we will use TCP (Transmission Control Protocol) because it is reliable and the data in it isn't lost. If we send a message so the message will delivered completely.

Recorded Audio Message we will use TCP (Transmission Control Protocol) because it is reliable and the audio message will be delivered completely without any missing part.

Live Video Conferencing we will use UDP (User Datagram Protocol) because it is used for a faster way of communication. In UDP some of the data may be missed but it a fast way of data transferring.

Ans5: (a) We will use 5G because it has lass response time (Low Latency) and high in speed.

(b) We will use 2G because it can fulfill our voice and SMS services citywide.

(c) We will use 3G because it has high security and it has the facility of international roaming.

(d) We will use Satellite Network because it can cover wide area (Globe).

(e) We will use Wi-Fi LAN which can be used with in an organization.

(f) We will use 2G because it can fulfill our requirements of Voice, SMS and basic internet Services.