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**

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Class and Section: 8th semester "A"

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

Answer: Wired network have higher bandwidth because wired network have dedicated line to a system in which signal loss is very less as compared to mobile network.

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

Answer: Relation between miniaturization and portability is we require Miniaturization to maximize portability for example in early days Of computing people have computer that can be fit in a large room And now we have computers in our pockets (portability) that all became possible because of miniaturization.

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

Answer: Convergence is to unite different devices functionality into one hybrid device like in smart phone we have the functionality of camera, calling, radio, etc.

Divergence is specialized functionality devices for example PDA devices camera with these devices we can only perform one functionality.

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 the text chat and recorded audio message we will use TCP protocol because we cannot bare data packet loss in text message and in recorded audio message because TCP makes sure the complete message delivery from sender to receiver (Handshake).

For video conferencing we will use UDP because it is faster than TCP and UDP require less bandwidth so for the users at low network speed there will be no problem in connectivity and if loss happens between call the user can confirm it later in the video call.

<u>Question5:</u> 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.**

Answer: a) We have two option here 4G and 5G and we will use 5G because for ultra hd calling we require higher bandwidth and as for the other services.

b) In this scenario 2G is the best option because this scenario only require calling and message services not internet or high speed data transformation and 2G is available everywhere.

c) 4G is the best option for this scenario because the requirements are normal and can be supported by 4G very easily.

d)For the global scale network we will use satellite networks because of the coverage limitations of the other networks on the global scale.

e) For the campus size network we will use Wi-Fi because of its ease of maintenance and sharing information wireless with 200 end devices.

f) For this scenario we will use 3G network because its requires basic internet services and other basic features calling which can be cover by 3G network very easily.