

Instructions:

Open this MS-Word document and start writing answers below each respective question given on page 2.

Answers the question in the same sequence in which they appear.

Provide to the point and concrete answers.

First read the questions and understand what is required of you before writing the answer.

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.

You can contact me for help if you have any doubt in the above instructions or the assignment questions.

All questions must be attempted.

Do not forget to write your name, university ID, class and section information.

Rename you answer file with your university ID# before uploading to SIC.

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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Class and Section: Sec A

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

Question2: Explain the relation between miniaturization and portability.

Question3: Differentiate between convergence and divergence.

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

A city wide network with only voice and SMS services.

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

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

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

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

Ans1: wired networks have higher frequency range than mobile networks because it consists of a wire which is connected to a device and which sends out the data at the same speed and mobile networks don't work at long distances as compared to wired networks.

Ans2: Miniaturization is the advanced mechanization and making of effective chips which are much smaller in size to make sure that the system works faster and quicker and perfectly. It is the evolution of new effective chips which together makes a good and accurate device. In portability the size of the device is decreased and the execution of a system is increased so does reliability we can place the systems from one place to another means it can be transportable.

Ans3: Convergence is a process in which similar things come together to form a structure and both are living on a same environment e.g. cell phones, cameras. Whereas divergence is a kind of activity in which the object is split into two or more descendant objects. They totally live in different environments.

Ans4: we will use TCP protocol for text chat and recorded audio messages because it won't lose the data if we send a voice note so it won't deduct any word from it it will send it accurately and for live video conferencing we use UDP protocol because it is a fast way of communication though it sometimes misses the data but we can communicate with video calls on it because it's quick enough.

Ans5(a): A city wide network with voice, SMS services and Internet services good enough for ultra-high definition streaming and video conferencing.

Ans: for wide network we will use 5g network because it has extremely high speed and has low discontinuation so 5g is the best technology for the given scenario.

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

Ans: for such scenario we will use 2g GSM technology because we need only sms and voice services and it is good for that.

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

Ans: for such a city we will use 3g network because it has a high security and international roaming and good for voice sms services and internet services and streaming.

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

Ans: For Global scale network we will go with satellite network because it can easily cover large areas without any inconvenience.

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

Ans: for a campus size network we will go with wifi technology because it uses LAN with a network used inside a company or organization.

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

Ans: for such city we will go with 2g network because it is sufficient to fill the requirements like sms, voice and internet services.