

## **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: 8 semester "B" \_\_\_\_\_**

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

**Answer1:** Wired networks are generally much faster than mobile networks and this is mainly because a separate cable is used to connect each device to the network with each cable transmitting data at the same speed. A wired network is also faster since it never is weighed down by unexpected or unnecessary traffic. Wired network also have an advantage over mobile networks is that they have much more generous bandwidth caps, mean you can transmit more data without running into data limits that raise your bill or slow the rate at which you can access the web.

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

**Answer2:** The main relation between miniaturization and portability is that to make it easy to carry anywhere we want and to make it possible to build device to fit in your pocket, by reducing the size of hardware in extremely small size in order to keep volume or weight to a minimum through miniaturization and portability enables us to operate it anywhere.

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

**Answer3:** The fact that two or more things, ideas etc become similar or come together like camera phones have selfie option or games etc while in divergence products have speciality like ipod, mp3 player, or tv remote etc.

**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:** I will use TCP for text chat because it provides guaranteed delivery and preserves orders of messages.

- I will use TCP for recorded audio message because it is reliable and provides guaranteed delivery.
- I will use UDP for live video conferencing because it is fast and we don't want screen loss and little bit of blur screen is acceptable.

**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.

**Answer:**

**a:** I would have used 5G but it is still in testing phase and is not yet officially launched, so 4G will be use instead of 5G because it has higher bandwidth, easily access internet, social networks, streaming media, video calling, 4G leads to much faster data transfer speed, extremely high quality voice, low latency, offers a vast area of coverage.

**b:** I will use 2G for only voice and SMS services because 3G network requires towers, and infrastructure and licensing etc so 3G is costly as compared too 2G.

**c:** I will use 3G because it supports all the services and is fast enough to cope up with the requirements.

**d:** I will use satellite network because it is accessible globally from anywhere in the world.

**e:** I will use Wi-Fi network because it is wireless and easily accessible for information and resource sharing within a campus and saves cost of cable and maintenance free.

**f:** Considering cost, i will use 2G network because it provides us with these basic facilities.