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**

Student Name: ___Muhammad Bilal Khan_____ Student ID#:_12945_____

Class and Section:_(_8 semestre)____ Section (A)_____

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

ANSWER : The wired network have higher bandwidth because the wired network have dedicated line system and also the signal lose have very less as compare mobile network. And also the main reason are that separate cables are used to connect each device to the network with each cables transmitte data at the same speed .

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

ANSWER NO 2 ; The relationship between the miniaturization and portability are that the we require that the miniaturization to maximize that the portability .
E. G ; The main example are the computer that is come in first version that are so big and also they can be fit in a large room and now we have computer have our pocket .

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

ANSWER No 3; The main difference between the convergence and divergence are that the convergence are the united different devices functionality into one hybrid device and also integrating emerging type of digital mobile device E.G Mobile phone , camera , games etc .
In divergence the main different are that the is specailized functionality devices E.G camera , music players 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)

ANSWER No 4; For text chat, recorded audio message , we will use to Transmission control protocol Because we cannot bare data packet loss in text message and in recorded audio message because TCP make sure the completen message delivery from sender to receive

User data gram protocol are used because they are faster than TCP the video size are large and we will use UDP because it required low bandwidth and if any loss happens the user can reconfirm from the other user .

<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 NO 5 ;
ANSWER(A)
In these case we will use 4G and 5G .The frequency band of the 4G is 2-8GHz and also bandwidth is 5-20MHz .And Also the 5G frequency band of this network is 24 to 90 GHz and data rate is 1Gbps to unlimited which is best for the mentioned services .

ANSWER No ;(B)

In this case we will use 2G Because Frequency of this network is approximately 1.8 GHz which is able for voice and SMS services .

ANSWER No (C)

We will use 4G in this case because the frequency of this network is 2 to 8GHz and data rate is 100MBps to 1GBps which is able to mentioned services .

ANSWER (D)

We will satellite in this case.Through which we can access remote and may be global users .

ANSWER (E)

We will use WI-FI in this case in which each devices is connected through wire .

ANSWER (F)

We will use 3G in this case because the frequency of this network is 1.6 to 2.0 GHz and data rate is 144Kps to 2mbps which is able for SMS voice and internet services