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 (no MS Word) and upload it to SIC unzipped, before the deadline mentioned on SIC.

11) Do not make any changes to the format provided.

12) Failure in following the above instructions might result in deduction of marks.

Deadline: - Mentioned on SIC   Marks: - 50

Program: - BS (CS), BS-SE   Dated: 24 June 2020

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Class and Section: B

Q1: **Provide the names of 4 challenges that exist in Adhoc Networks.**   **(4)**

ANS1:
 Scalability
  Dynamic topology,
 Energy Constraints,
 Infrastructure-less Design.

Q2: **How the nodes in the Adhoc Network know about the changing network topology.   (2)**

ANS2: Each node maintains routing table having information about network topology. This routing tables updates periodically when network topology changes.

Q3: **Why is it important to minimize flooding of control packets in Adhoc Networks and how MPR achieves it?**   **(4)**

ANS3: It is important to minimize flooding of control packets in Adhoc Networks because flooding can be costly in terms of wasted bandwidth.while a message may only have one destination it has to be sent to every host.In the case of a ping flood or a denial of service attack, it can be harmful to the reliability of a computer network.Messages can become duplicated in the network. Further increasing the load on the network as well as requring an increase in proessing complexity to desregard duplicate messages.Multipoint relay minimies the flooding of broadcast packets in the network by reducing duplicate retransmission in the same region.

Q4: **Explain briefly how Mobile Cloud Computing is different than simple mobile computing and simple cloud computing?** **(4)**

ANS4: Cloud computing use distributed networks to process data while mobile computing the user can access the internet using browsers and transfer different kinds of data using satellites

Q5: **Explain the term MBaas in your own words?** **(4)**

ANS5: MBaas stands for Mobile Back-end as a Service. it is a model that provides web app and mobile app developers a way to link their app to the back-end cloud storage. cloud storage is a data storage model that stores in digital data as logical pool.On the other hand, an MBaaS also delivers features like user management, push notifications, and social networking service integration. The package of services is offered using SDKs and APIs

Q6: **Imaging you visit a completely new city. What kind of services a modern LBS can provide you at your location automatically?** **(6)**

ANS6: MBaas is also called backend as a services which provides a way to mobile and web developers to link their applications to backend cloud storage and APIs used by backend applications it also providing features such as user management and push notification.

Q7: **Use your imagination as to how the following context can be used by a context aware application in mobile computing environment?**
(8)
  Date/Time
  Environment
  Emotional state
  Focus of attention
  Orientation
  User preferences
  Calendar (events)
  Browsing history

ANS7: Date/Time:-

Context date and time should be use by the user they are automatically update on the bases of GMT where they are located in different countries they have different time.

Environment:-

Environment is dependent on technology for activity logs in mobile computing environment changes without user intervention.

Emotional state:-

Emotions in general can overwhelm the human body, which responds through various signals that are manifested in physical and physiological forms. Physical responses include facial expressions, voice intonation, gestures, and movements, whereas physiological response indicators relate to respiration, pulse rate, skin conductance, body temperature, and blood pressure

Focus of attention:-

This context we should need to provide and renew the old version with latest updated
Version to remove unlike feature or make them more efficient in the applications

Orientation:-

The context focus on the movement of phones like screen rotation.

User preferences:-

This context should be use to save user data to show that data in different activities of mobile application.

Calendar (events):-

This context is used by mobile applications even for events to get notification when that event is happen that is very helpful to remember the coming events or save the recent event for next year.

Browsing history:-

This context is used in mobile as well as desktop to access useful and recent information in less time or even access to bookmarks where we can save the important websites to access them easily.

Q8: **Explain why energy efficiency is important in technologies like Bluetooth and ZigBEE?**
(4)

ANS8: Universal radio interface for wireless connectivity energy efficiency is important because it is use for data transmission over wireless network if that devices is not efficient the result of data transmission will not be accurate. Bluetooth has high speed low energy.

Q9: **Explain briefly how you use RFID technology at INU on a daily basis when present on the campus? Do you use an active or passive tag?** **(4)**

ANS9: We will use RFID for item tracking at INU on daily basis when present on the campus. We will use active RFID fro item tracking because it requires low signal strength and high range passive,

Q10: **Explain how Wearable Computing can be employed in computer gaming?** **(5)**

ANS10: Wearable computers can be use as gaming computers as some of products are available in the market which can be wear and play games. VR headsets are the best example for the wearable gaming computers. These type of technologies use gyroscope and tracking sensors for the better experience of gaming.

Q11: **What kind of facilities and technologies must be present in order to call you own home a Smart Home?** **(5)**

ANS11: Smart floors:-
Fall detections to avoid death rate because of fall floors.
Smart toilet:-determine how many times a person go to bathroom in the night time. Analyze of urinary salt and send result to computer trough LAN. Analyze blood sugar level, body weight, and fat percentage.
ECG chair:-
ECG waveforms can be obtain using electrodes fixed on a chair or in the bed and measurement obtain without direct contact with the skin
Medication reminder:-
Patient with chronic disease do not follow physician medication and lifestyle regimens, 9 out of 10 make mistakes when taking the medicine. We should need to provide a reminder to avoid this mistakes.