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.**

Final Exam, Course: - Mobile Computing

Deadline: - Mentioned on SIC **Marks: - 50**

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

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Class and Section: 8th semester section A

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

Ans: Infrastructure less design:

Adds difficult in fault detection and management

Dynamic topology:

Result and route change and packet loss

Scalability:

Is still unsolved challenge include addressing routing configuration management interoperability etc

Varied link / node capability

Cause variable processing capabilities

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

Ans: Every node maintain routing table containing info about network topology Routing table are updated periodically whenever the network topology change . these protocols maintain different number of routing tables varying from protocols to protocols.

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

Ans : Node advertise information only about link with neighbor who are in its multipoint relay sector set reduce number of control packet by reducing duplicate transmission reduce flooding by using only multipoint relay node to send info in the network and MPR minimize the flooding of broadcast packet in the network by reducing the duplicate retransmission in the same region

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

Ans: **Mobile cloud computing move the computing power and data storage away from the mobile devices and into powerful and centralized computing platforms located in the cloud which are then accessed over the wireless connection based on a thin native client**

Mobile computing is a human interaction in which a computer is expected to be transported during normal usage which allow for transmission of data

Cloud computing is a model for enabling avalible convincent on demand network access to a shared pool of configurable computing resources eg network server storage application services this is a user centric view and highlight

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

Ans: **MBaas stand for mobile backend as a service in simple word it is made that provide web app and mobile app developers a way to link their app to the backend cloud storage it is also provide some amazing feature like user management push notification .**

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

Ans: **I use IOS and in iOs I use Map kit framework for accessing and manipulating maps (street view satellite view etc)**

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

Ans: Date and time

According to context aware system the date and time for the user should be provided by the system on his current location and provide user a option to change date and time

according to his current area it should be display on the screen by design made of user centric approach

Environment: **The environment is a key factor in the context aware system the system should focus how the system react at the environment change for example in the noisy area night time so that the option in phone to adjust brightness screen density warm or cold etc**

Emotional state : **According to context aware system emotional state of user can effect mobile computing environment for example a loud alert is not ideal for all situation**

Focus on attention : **The system should give importance to the attention of user through context aware system they can provide some services like in the phone call avoid unnecessary interruption and which a message arrive on the phone a notification every 30 sec eventually the user ignore it .**

Orientation: **Orientation means the context aware system have capability to provide user device to adjust the screen in every change for example auto rotate mode in smartphone to adjust the screen orientation of the device.**

User preference: **The context aware system maintain the user preference by providing the user with certain option such as the mobile phone color density control light or dark mode in so many option.**

Calendar: **The context aware system focus on the time zone and global date and this way the user has personalize calendar and keep track of the event which can occur different user according to his area.**

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

Ans: **Traditional Bluetooth is connection oriented when a device is connected a link is maintained even if there is no data flowing sniff mode allow devices to sleep reducing power consumption to give month of battery life eg wake of every 100ms peak transmit current is typically 25mA even though it is independently shown to be lower power than other radio standard it is still not enough for coin cells and energy harvesting application .**

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)**

Ans: **We use RFID technology in INU on a daily basis first of all we use aur card to enter in the university and we swife the card that we allow the uni because in aur uni card**

have a micro chip and second is the attendance it's a RFID technology and we use a active tag because its limited sensor capability .

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

Ans: A wearable computer also know as a wearable or body borne computer it is a small computing device its wom by body the definition of wearable computer may b narrow or broad extended to smartphones or even ordinary wristwatches like thermometer heart rate monitor

And wearable gaming would mean the new technology in which you would wear bands west helmet with small sensor on your hand leg forehead chest so that the character that you wearable computing can employed in computer gaming

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

Ans We want that kind of facilities that we called aur home at smart home that the home main gate is open in our voice or some type of password and sesor floor and sensor toilet and that kind of device that has manage aur home temperature and so many thing