# 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: BS(SE) 8th Semester "A"**

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

**Ans): 1:Energy Management**
**2:Security**
**3: Deployment consideration**
**4:Routing and Multicasting**

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

**Ans: In ad hoc networks the nodes keep the information of near nodes and they update their table according to that when they received a new message all nodes pass the message(RREQ) to their neighbor nodes at the end the messages is passed when the message is passed the final node find a shortest route and then communicate by that shortest route(RREP) that's how nodes in ad hoc know about changing network technology.**

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

**Ans: Its important to minimize flooding because we can send a duplicate messages to a node again and again it well reduce the response time. MPR achieves the minimization by selecting selected neighbor node. Multipoint relay minimizes the flooding of broadcast packets in the network by reducing 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 is the combination of the cloud and mobile computing to bring a rich experience to mobile device for the better performance. Cloud computing is standalone term for achieving cloud tasks easily for example storage, application development and in simple mobile computing we uses the mobile and its hardware component for our tasks it does not involve cloud.**

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

**Ans: Mobile Backend as a Service, or MBaaS, is a development model that's based on cloud technology. It allows you to outsource all of the behind-the-scenes components of your web or mobile application. In MBaas the user only work on the front end of the application and for the rest the MBaas platform is responsible.**

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

**Ans: LBS(Location based services) can provide many services if someone move to a new city LBS can provide useful and needed information to a person which is new to a city for example Near Restaurants, Near Hospitals, Schools, Near parks etc.**

**Q7: Use your imagination as to how the following context can be used by a context aware application in mobile computing environment? (8)**

**Ans:**

**Date/Time:**
**Context aware application can provide time standard according to the area of the user and that's how a context aware application can use date and time information.**

**Environment: Environment can be utilize by a context aware application by adjusting the brightness of a device with the help of Ambient Light sensor if the user is in the dark environment the brightness will be according to that environment and vice versa.**

**Emotional state: the application can utilize emotional state of a user to choose color themes brightness.**

**Focus of attention: This information can be utilize by a context aware application by what user wanted more or the attention of the user for example avoid unnecessary interruption between a phone call.**

**Orientation: Orientation can be utilize by a context aware system in auto rotate with the help of a sensor accelerometer the mobile can tilt a screen according to mobile position.**

**User preferences: Context aware system provide the user device to adjust the screen in every change color density themes etc.**

**Calendar (events): The context system focuses on the system time zone and global dates and this way the user can personalized the calendar and events.**

**Browsing history: Context aware system can uses the browsing history to recommend in the favour of the user.**

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

**Ans: The reasons for requiring the more energy efficiency in wireless various but some are given below,**
**Worrying about design problem , the policy of green technology , saving business cost and user satisfaction.**

**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 for the identification of ourselves to enter the campus we use it for the attendance and we uses on the I WIZ machine to see our results and other academic activities. We use passive tag.**

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

**Ans: Wearable technology is the next step in gaming we can employed many wearable technologies in gaming for example we can use VR for the immerse experience in gaming environment virtually there are many gaming jackets with sensors which we use for real time bullet effects on humans there are other many technologies that companies are working on to better the experience for gaming.**

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

**Ans: For making a smart home the internet service a internal local LAN connection must be present to connect every device to the a person mobile phone or other controllable devices. Facilities that can make a simple home a smart home is doors that can be control by a mobile phone application, control of thermostat by mobile phone application, security cameras, fingerprint doors and lockers and lights and fans that can be switched on off with the help of a mobile application.**