
Final Exam, Course: - Mobile Computing

Deadline: - Mentioned on SIC

Marks: - 50

Program: - BS (CS), BS-SE

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Ans No 1:

Challenges in Ad hoc Network:

1. Energy limits:

- limit processing power; ad-hoc networks rely on each node being a “router”

2. Infrastructure-less design:

- Infrastructure Ad hoc network are used to detect faults and adds difficulty in fault and perform its management.

3. Dynamic topology :

- Dynamic topology are used to change the path and also helpful in packet loss.

4. Varied link/node capabilities

- cause variable processing capabilities

Ans No 2 :

- A wireless ad hoc network ad hoc network is a decentralized type of wireless network. The network is ad hoc because it does not rely on a pre-existing infrastructure, such as routers in wired networks or access points in managed (infrastructure) wireless networks. Instead, each node participates in routing by forwarding data for other nodes, so the determination of which nodes forward data is made dynamically on the basis of network connectivity and the routing algorithm in use.

Ans No 3:

Importance:

- **Reduce control packet size:**

- Its gives information about only those links which are neighbors with it and also select multipoint relay selector set.

- If we reduce the duplicate transmission so the number of control packets are also reduce. If we want to reduce flooding we used a few node relay points to send information.

Multipoint Relay minimizes:

- MPR are used to minimize the flooding of broadcast packets in the network by minimizing the number of duplicate retransmission of data in the same location.

Ans No 4:

Mobile Cloud Computing:

- Mobile cloud computing is combination of mobile and cloud computing to make the a lot of computational resources to mobile and laptops users, network operators and also the company which provides computing. The main goals of Mobile cloud computing is to enables execution of rich mobile applications.

Cloud Computing:

- It is used to store and access data through internet instead of storing on computer hard disk. Storage of data in hard drive it is called local computing.

Mobile Computing:

- Mobile computing is a technology which are used for transmission of data, voice, video and audio by using wireless devices like mobile phones, laptops having no coaction with any types of physical links.

Ans No 5:

MBaaS:

- Mobile Backend as a server provide for both web as well as mobile app developer which provide the platform for the developer to store their data and also connect their applications and data to Backend cloud server for processing. MBaaS provide some common functionality like user management, social networking integration, notification, API endpoint, cloud storage.

Ans No 6:

Location based services (LBS):

- if someone visits a new city, then the modern location service gives him "Currently", navigation technology on consumer devices such as mobile phones allows a huge explosion in location-based services, with new commercial opportunities based on the user's ability to identify their relative relative location. for services, facilities and others

Ans No 7:

Date/Time:

- By pushing notification/reminder of a daily used application.

Environment:

- The environment is key factor in the context aware systems the system should focus on the how the system will react at the environment change for example in the noisy area or at night time or at daylight what's will be behaviors in different

conditions for that there is option in phone to adjust brightness , screen density warm or cold.

Emotional state:

- It is to context aware systems emotional state of user can effect mobile computing environment for example A loud alert is not ideal for all situations.

Focus of attention:

- The system should give importance to the attentions of user. Through context aware systems the can provide some services like in the phone call Avoid unnecessary interruption or when the message arrive on the Phone flashes a notification every 30 seconds Eventually the user will ignore it!

Orientation:

- Orientation means the context aware system have capability to provide users device to adjust the screen in every change for example auto rotate mode in Smartphone to adjusts the screen to the orientation of the device ,Apple Watch turns on display if arm lifted/rotated.

User preferences:

- The context aware system maintain the user preferences by providing the user with certain options such as in the mobile phone color density control, light or dark mode in the phone wallpaper or theme change control.

Calendar:

- By showing reminders of an upcoming event.

Ans No 8:

Energy efficiency is important for sensory devices with limited energy sources, which are connected by means of wireless sensor networks. The reason can be the production of unnecessary communication or periodic transmission of data from sensory IoT devices at very short intervals.

Ans No 9:

- It are work on AIDC (Automatic identification and Data Capture) techniques. AIDC method automatically identifies the objects and collect data about them. So in our university this technology is good than cards swap because this method just identify the object and mark its presence.
- In university we used ACTIVE RFID tag because active tag has both microchip and antenna which have more power and capabilities.

Ans No 10:

Computing can be used in computer games by using a VR headset, Knuckle Strap, VR Remote controller, Tactical Gaming Vest and many others. All of this helps you feel the gaming environment at a much better level, some of which even allow you to enter the virtual reality of the gaming world.

Ans No 11:

- Smart TV is connected to the internet to access content through applications, such as videos and music on request. Some smart TVs also include voice or gesture recognition.
- Besides being able to be controlled remotely and adjusted, smart lighting systems, such as Hue from Philips Lighting Holding B.V., can detect when residents are indoors and adjust lighting as needed. Smart light bulbs can also adjust based on daytime availability.
- Using the smart key and garage door opener, users can give or deny access to visitors. Smart locks can also detect when occupants are close and unlock the door for them.
- With smart security cameras, residents can monitor their homes while they are away or on vacation. Smart motion sensors can also identify differences between occupants, visitors, pets, and thieves, and can notify authorities if suspicious behavior is detected.