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.**

Sessional Assignment, Course: - Mobile Computing

Deadline: - Mentioned on SIC **Marks: - 20**

Program: - BS (CS), BS-SE **Dated: 11 April 2020**

Related Course: Lecture 7 and 8.

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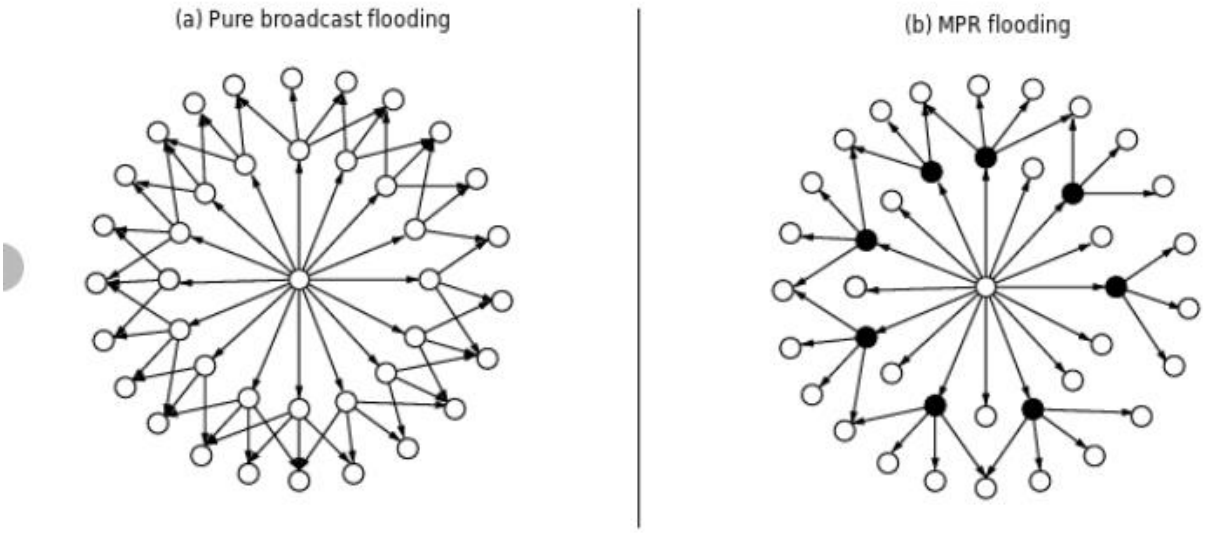
Class and Section:BS(SE),section B, semester 8

Q1: In what aspects is an Adhoc network different from infrastructure networks? (3)

The biggest different of them is **infrastructure networks** consist of access point and nodes, meanwhile the **ad hoc networks** are independent from access point. In the infrastructure version, a terminal can't communicate directly with other terminals in the same cell and other cell.

Q2: What is the difference between reactive and proactive routing protocols in MANETS?
In **proactive routing protocol**, every node maintains one or more tables representing the entire topology of the network.
Reactive Routing Protocol is a bandwidth efficient on- demand **routing protocol** for Mobile Ad-Hoc Networks
Proactive protocols send updates frequently by sending broadcast messages whereas **reactive protocols** update the routing table on-demand.

Q3: Differentiate between regular and MPR flooding? (2)



Multi-Point Relays (MPR) flooding vs. pure broadcast flooding.

Q4: On which path is the route reply message sent in DSR? (3)

Dynamic Source Routing (**DSR**) is a routing protocol for wireless mesh networks. It is similar to AODV in that it forms a route on-demand when a transmitting node requests one. However, it uses source routing instead of relying on the routing table at each intermediate device.
This protocol uses a reactive approach which eliminates the need to periodically flood the network with table update messages which are required in a table-driven approach

Q5: What is source routing? (2)

In computer networking, **source routing**, also called **path addressing**, allows a sender of a packet to partially or completely specify the route the packet takes through the network In contrast, in conventional routing, routers in the network determine the path incrementally based on the packet's destination. Another routing alternative, label switching, is used in connection-oriented networks such as X.25, Frame Relay, Asynchronous Transfer Mode and Multiprotocol Label Switching.

Q6: If AODV does not store route information in the packet then how does the routing works? (4)

The Ad hoc On-Demand Distance Vector (AODV) routing protocol is intended for use by mobile nodes in an ad hoc network. It offers quick adaptation to dynamic link conditions, low processing and memory overhead, low network utilization, and determines unicast routes to destinations within the ad hoc network. It uses destination sequence numbers to ensure loop freedom at all times (even in the face of anomalous delivery of routing control messages), avoiding problems (such as "counting to infinity") associated with classical distance vector protocols.

Q7. What are the functions of sequence numbers in AODV? (3)

AODV differs from other on-demand routing protocols in that is uses **sequence numbers** to determine an up-to-date path to a destination. Every entry in the routing table is associated with

a **sequence number**. The **sequence number** act as a route timestamp, ensuring freshness of the route.