

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

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

Ans: Adhoc network different from infrastructure networks:

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?

Ans: Proactive:

- Every node maintains routing table containing information about network topology
- Routing tables are updated periodically whenever the network topology changes
- These protocols maintain different numbers of routing tables varying from protocol to protocol
- Maintains fresh lists of destinations and their routes by periodically distributing routing tables throughout the network

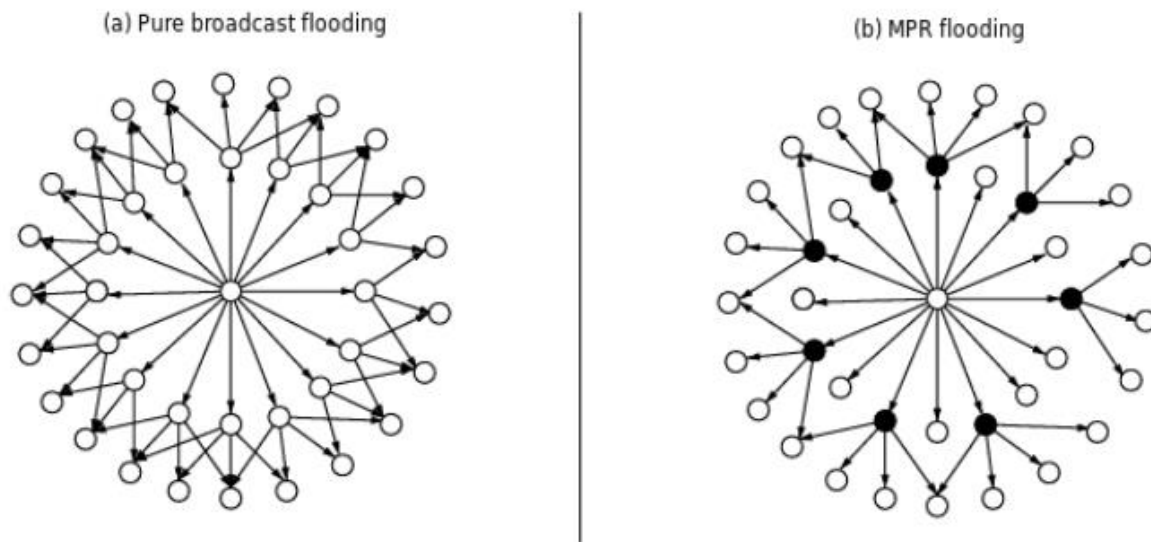
Reactive:

- Finds a route on demand by flooding the network with Route Request (RREQ) packets

Q3: Differentiate between regular and MPR flooding?

(2)

Ans: Regular and MPR flooding:



the number of repeaters but still ensuring that each node in the network receives a flooded packet at least once, thus saving valuable bandwidth. Multi-Point Relay (MPR) is one of the most popular such optimization, having each node select a minimal set of "relay nodes" (called MPRs), responsible for relaying flooded packets. As shown right in Fig. 1, from the local point of view of a node flooding a packet -i.e. the center node in the figure -this corresponds to only a small number of "necessary" neighbors (the black nodes) relaying the broadcast (instead of all the neighbors, with the naive flooding mechanism)

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

Ans: Route Reply Message:

Route Reply would only be generated if the message has reached the intended destination node (route record which is initially contained in Route Request would be inserted into the Route Reply). To return the Route Reply, the destination node must have a route to the source node.

(3)

Q5: What is source routing?

Ans: Source Routing:

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. There are two different types of source routing – loose and strict. In loose source routing, the packet has to pass through specific listed hops, but in strict source routing, the sender specifies every step on a hop-by-hop basis. (2)

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

Ans: AODV:

AODV is a method of routing messages between mobile computers. It allows these mobile computers, or nodes, to pass messages through their neighbors to nodes with which they cannot directly communicate. AODV does this by discovering the routes along which messages can be passed. (4)

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

Ans: Sequence Numbers:

AODV differs from other on-demand routing protocols in that it 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 acts as a route timestamp, ensuring freshness of the route. Upon receiving a RREQ packet, an intermediate node compares its sequence number with the sequence number in the RREQ packet. If the sequence number already registered is greater than that in the packet, the existing route is more up-to-date. (3)