

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

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Related Course: Lecture 7 and 8.

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Class and Section: 8th A

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

Ans First thing is ad hoc network have no infrastructure and it has limited range.

It didn't require

- 1) base stations
- 2) back bone
- 3) online server

It has no network operators.

- 1) Self-organization
- 2) Self-configuration
- 3) Self-healing

And its multi-hop wireless communication

Q2: What is the difference between reactive and proactive routing protocols in MANETS? (3)

Ans

Proactive: In the proactive when new node comes in to the network each node update the table and propagated it in network. So that every node knows its surrounding.

Reactive: In the reactive the node updates the table when they want to communicate in the network. The route discovery occurs by flooding the route request packets throughout the network.

Q3: Differentiate between regular and MPR flooding?

(2)

Answer:

Regular Flooding: In regular flooding every application should sent a packet to all neighbors with a hop-limit set to one. The received neighbors method the flooded packet and can resend it to their own neighbors if necessary. Flooded packets are therefore repeatedly forwarded till it's reached all nodes within a network.

MPR Flooding: exploitation hello messages the OLSR protocol at every node discovers 2-hop neighbor data and performs a distributed election of a collection of multipoint relays (MPRs). Nodes choose MPRs specified there's a path to every of its 2-hop neighbors via a node chosen as an MPR. These MPR nodes then source and forward messages that contain the MPR selectors. The forwarding path for TC messages isn't shared among all nodes however varies counting on the source, only a subset of nodes source link state data, not all links of a node are publicized however only those who represent MPR selections.

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

Answer: When a Route Request message reaches a node, the accumulated route indicates the nodes through which it's passed. This accumulated route is employed by a node to send a Route Reply message back to the initiator. The Route Reply messages are often sent either by the destination node or by associate intermediate node that finds a route to the destination in its route cache. A node will send a route reply if it finds a route to the target in its route cache. If there's a better (shorter) route reply, the initiator starts using another route.

(3)

Q5: What is source routing?

Source routing is to specify the route that packets take through the network. There are choices within the IP header that may be set to specify the routers that a packet should go through on the way to its destination.

There are two modes of source-routing, loose and strict. Loose specifies that the packet ought to pass though the listed hops, strict specifies the precise path on a hop-by-hop basis. This implies that somebody will force their traffic to require a particular path through your network, probably bypassing varied security stuff. There are only a few "legitimate" uses for source routing, the main one being guaranteeing that folks at exchange points are protruding to their agreements.

(2)

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

When a source has information to transmit to unknown destination, it broadcasts a Route Request (RREQ) for that destination. At every intermediate node, once a RREQ is received a route to the source is made. If the receiving node has not received this RREQ before, isn't the destination and doesn't have a current route to the destination, it resends the RREQ. If the receiving node is the destination or encompasses a current route to the destination, it generates a Route Reply (RREP). Because the RREP propagates, every intermediate node creates a route to the destination. Once the source receives the RREP, it records the route to the destination and might begin sending information. As information flows from the source to the destination, every node on the route updates the timers related to the routes to the source and destination, maintaining the routes within the routing table. If a route isn't used for a few amount of your time, a node can't be certain whether or not the route remains valid; consequently, the node removes the route from its routing table. If information is flowing and a link break is detected, a Route Error (RERR) is sent to the source of the info. Because the RERR propagates towards the source, every intermediate node invalidates routes to any out of reach destinations. (4)

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

A monotonically increasing number maintained by every originating node. In AODV routing protocol messages, it's utilized by different nodes to see the freshness of the data contained from the originating node. Sequence number unambiguously identifies the actual RREQ once taken in conjunction with the originating node's IP address. Destination Sequence number is the latest sequence number received within the past by the conceiver for any route towards the destination. Originator Sequence number is the current sequence number to be utilized in the route entry informing the conceiver about the route request.