

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: BS CS 5th Smester

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

Ans:

- 1) An Ad-hoc network allows each device to communicate directly with each other. There is no central Access Point controlling device communication. Ad-hoc networks are only able to communicate with other Ad-hoc devices, they are not able to communicate with any Infrastructure devices or any other devices connected to a wired network. In addition, Ad-hoc mode security is less sophisticated compared to an Infrastructure mode network.

An Infrastructure mode network requires the use of an Access Point. The Access Point controls Wireless communication and offers several important advantages over an Ad-hoc network. For example, a Infrastructure based network supports increased levels of security, potentially faster data transmission speeds and integration with a wired network.

- 2) The biggest different of them is infrastructure networks consist of access point and nodes, meanwhile the ad hoc networks are independent from access point.

- 3) In the infrastructure version, a terminal can't communicate directly with other terminals in the same cell and other cell. A access point here perform control messages. Messages are sent to the access point and then the access point distributes the messages to the desired terminal.

Unlike the infrastructure, the ad hoc networks have a different method to distribute messages.

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

Ans:

Reactive routing protocols follow a route determination procedure. If a source node has to send a packet to destination node, firstly the route to the destination node is determined and then a connection is established between these nodes. For route determination procedure, route request packets are flooded throughout the network.

In networks utilizing a **proactive routing** protocol, every node maintains one or more tables representing the entire topology of the network. These tables are updated regularly in order to maintain up-to-date routing information from each node to every other node. To maintain the up-to-date routing information, topology information needs to be exchanged between the nodes on a regular basis, leading to relatively high overhead on the network.

The proactive routing protocol is a routing form for flat and hierarchical but reactive is a flat only forming in the protocols. Periodic updates in the conditional of proactive but reactive protocols periodic updates in routing process will be updated.

Q3: Differentiate between regular and MPR flooding?

(2)

Ans : A regular or pure broadcast flooding be simple as : when a packet must be flooding, each node in the network repeats this packet the first time it receive it.

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MPR flooding mechanism ensure that each node in the network receives a flooding packet at least once.

MPR is the one of most optimization having each node select a minimal set of “relay nodes” responsible for relaying flooding packets.

MPR is efficient use of bandwidth because it saving valuable bandwidth.

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

(3)

Ans: A reactive protocol, dynamic source routing DSR , use shortest hop forwarding paths to route the packet to the destination node.

TO return the route reply ,the destination node require a route to the source node.

IF the route is in the destination nodes route cache the route would be used, otherwise the node will reverse the route request message

header.

Q5: What is source routing?

(2)

Ans:

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.

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

(4)

Ans: Adhoc on-demand distance vector is a reactive distance vector Routing protocols.

- AODV stores the whole information about (route,source and destination) in the intermediate node tables to access the path.
- AODV assigns times stamps to the path so that it always uses fresh paths.
- AODV uses sequence number to avoid recording state information , that has been in loop.

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

(3)

Ans:

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 act 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.