

## **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.**

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**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: BSSE(B) 8<sup>th</sup> Semester**

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

**Ans:**        **Infrastructure wireless** network is a centralized communication network. Before any networking can take place you need to set up dedicated machines to act as routers/access point. Due to the fixed nature of the network initial expense of setting up can be quite high. However the operational expenses are low since no additional configuration needs to be performed on client devices.

**Ad-hoc** means temporary. An adhoc wireless network is a temporary wireless network. The keyword in an adhoc network is decentralization. By strict definition an adhoc network is the one in which you don't have to go through an access point to communicate. Each node participates in routing.

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

**Ans: The difference between reactive and proactive routing protocols in MANETS are:**

**Proactive Protocols:**

- A. Have Lower latency due to maintenance of routes at all times.
- B. Can result in much higher overhead due to frequent route updates.
- C. When a packet needs to be forwarded , the route is already known.

**Reactive Protocols**

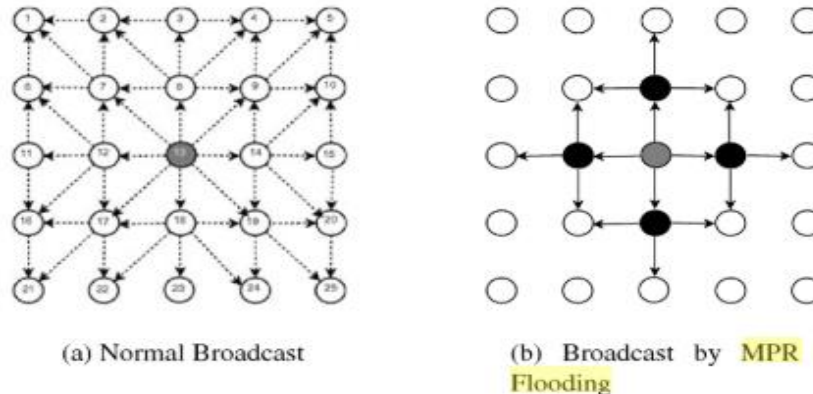
- A:** Higher latency since the routes have to be discovered when the source code initiates a route request.
- B:** Lower overhead since routes are maintained only on-demand basis.

**C:** Determine a route only when there is data to send.

**Q3: Differentiate between regular and MPR flooding?**

(2)

**Ans:**



**MPR Flooding:**

MPR selection is unaltered by the use of trees: MPRs are selected as if there were no trees. The MPR mechanism is local and therefore very scalable. What is less scalable is the diffusion by all the nodes in the network (no hierarchy) of all the link state information (i.e. TC messages).

**Normal Flooding:**

In OLSR, flooding of control messages is minimized using MPRs. In a normal broadcast scenario, a node forwards a packet (data or control) to all its 1-hop neighbors. 1-hop neighbors in turn forward the received packet to all their 1-hop neighbors and so on until the packet inundates the entire network. The drawback of this approach is that a lot of duplicate traffic is created in the network.

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

(3)

**Ans:** When node S wants to send a packet to node D, but does not know a route to D, node S initiates a route discovery.

Source node S floods the network with route request (RREQ) packets (also called query packets).

Each node appends its own address in the packet header when forwarding RREQ.

**Q5: What is source routing?**

**Ans:** Source routing is a way of moving a packet through a network in which the path is predetermined by the source or some device that tells the source about the path. The path information is placed in the packet. When the packet arrives at a switching device, no forwarding decision is necessary. The device looks at the path information in the packet to determine the port on which it should forward the packet. This is the opposite of hop-by-hop IP routing, where packets contain only the destination address and routers at each junction in the

network determine how best to forward the packet.

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

**Ans:** If route reply is not received before a limes expires. this entry is deleted. Either destination node of intermediate node response with valid route. When RREQ is forwarded back, the add of previse nodes its broadcast id x Are needed to forward packet to destination.

**(4)**

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

**Ans:** 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.