Question Bank- 1

Adhoc and sensor network

Q.1 What are the challenging issues in ad hoc network maintenance?

Ans.The challenging issues in ad hoc network are

1. Medium access scheme
2. Routing
3. Multicast routing
4. Transport layer protocol
5. Pricing Schemes
6. Quality of Service Provisioning
7. Self-Organization
8. Security
9. Addressing and Service discovery

2.What is an ad hoc network?

Ans. An ad hoc network is a multihop, infrastructure less network which has no centralized server to control the communication between the nodes and resources cannot be reserved beforehand. It is used in battlefields and military applications.

3. Why are ad hoc networks needed?

AnS. Ad hoc networking is often needed where an infrastructure network cannot be deployed and managed. The presence of dynamic and adaptive routing protocols enables quick formation of ad hoc networks and is suitable for emergency situations like natural disasters, spontaneous meetings or military conflicts.

4. List the applications of ad hoc networks.

Ans. Ad hoc networks are widely used in

1. Military applications and battlefields
2. Collaborative and distributed computing
3. Emergency search and rescue operations

4. Wireless sensor and mesh network

5. What is hidden terminal problem?

Ans. Hidden terminals are nodes that are hidden (or not reachable) from the sender of a data transmission session, but are reachable to the receiver of the session. The hidden terminal can cause collisions at the receiver node.

Or

When two transmitter nodes try to send data at the same time, to the same receiver, they will sense the carrier to be free at the same time, leading to collisions. This is called hidden terminal problem.

6. Define Mobile Ad Hoc networks. Give an example.

Ans. It is an infrastructure less IP based network of mobile and wireless machine nodes connected with radio. In operation, the nodes of a MANET do not have a centralized administration mechanism. It is known for its routable network properties where each node act as a "router" to forward the traffic to other specified node in the network.

7. Differentiate an ad hoc network and a cellular network with respect to

a) Bandwidth usage

b) Cost effectiveness

Ans.

PARAMETER	**CELLULAR NETWORK**	**CELLULAR NETWORK**
Bandwidth usage	Easier to employ bandwidth reservation	Bandwidth reservation requires complex medium access control protocols
	Shared radio channel (more suitable for best-effort data traffic)	Shared radio channel (more suitable for best-effort data traffic)
Cost effectiveness	Cost of network maintenance is high (backup power source staffing etc.)	Self-organization and maintenance properties are built into the network. Hence the cost of network maintenance is less.

8. What are the characteristics of wireless channel?

Ans. Path loss

Fading

Interference

Doppler shift

Transmission rate constraints

9. List out the issues in Ad Hoc networks.

Ans. Medium access scheme

Routing

Multicasting

Transport layer protocol

Pricing scheme

QoS provisioning

Self-organization