

Unit - 5Q.1) Wireless Routing Protocols

(1) Based on Routing information update Mechanism

- Table-driven - DSDV, CGSR
(Proactive) → route is known.

- On-demand → DSR, AODV
(Reactive) → route is created when there is data.

~~On-demand~~ - Hybrid - ZRP

(2) Based on the use of Temporal information for routing

(Q2)

Issues in designing a routing protocol.

① Mobility

- suffers frequent path breaks
- wireless network routing protocols cannot be used.
- frequently changing network topologies

② Bandwidth constraint.

→ wireless less bandwidth than wired.

③ Error-prone shared broadcast radio channel.

④ Hidden and exposed terminal problem

Q3) Table-driven routing protocol.

- They maintain global topology info in form of tables at every node
- Each node maintains routing information to all other nodes in the network
- When topology changes, update all propagated throughout the network.

Examples are -

DSPV

CGRS

WRP

Q4)

advantage and disadvantage of DS DU

Adv → Less delay in route setup process.

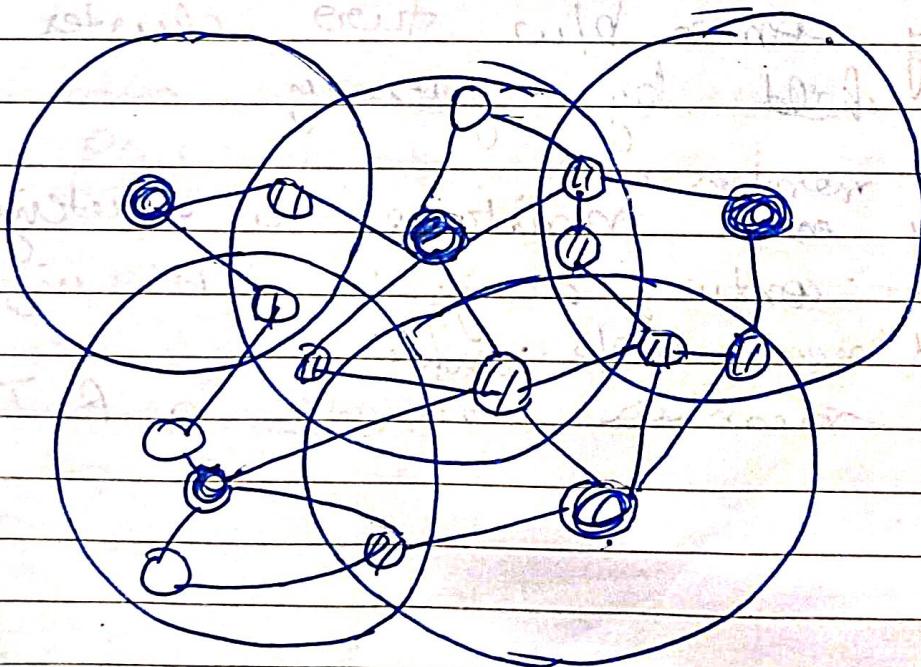
→ Updates are propagated throughout the network.

Disad

→ Updates due to broken links lead to a heavy control overhead during high mobility.

- Even a small network with high mobility or large network with low mobility can choke the available bandwidth.
- a node has to wait for a table to update.
- delay could result in state scouting information at nodes.

Q3

CGRS

① → Cluster member nodes

② → cluster head

③ → cluster gateway

- Use a hierarchical network topology
- CCRS organizes nodes into clusters
- It consists of cluster head, cluster member, cluster gateway
- cluster head ~~causes~~ to be a CH only if it comes under the range of another CH.
- clustering
- allocate bandwidth, improving ~~reex~~
- ^
- all comm passes through CH.
- gateway comm b/w two cluster are held by gateway.
- Every ~~node~~ member node maintains a routing table containing designated CH info, and next hop info.
- Cluster member ~~manages~~ and RT

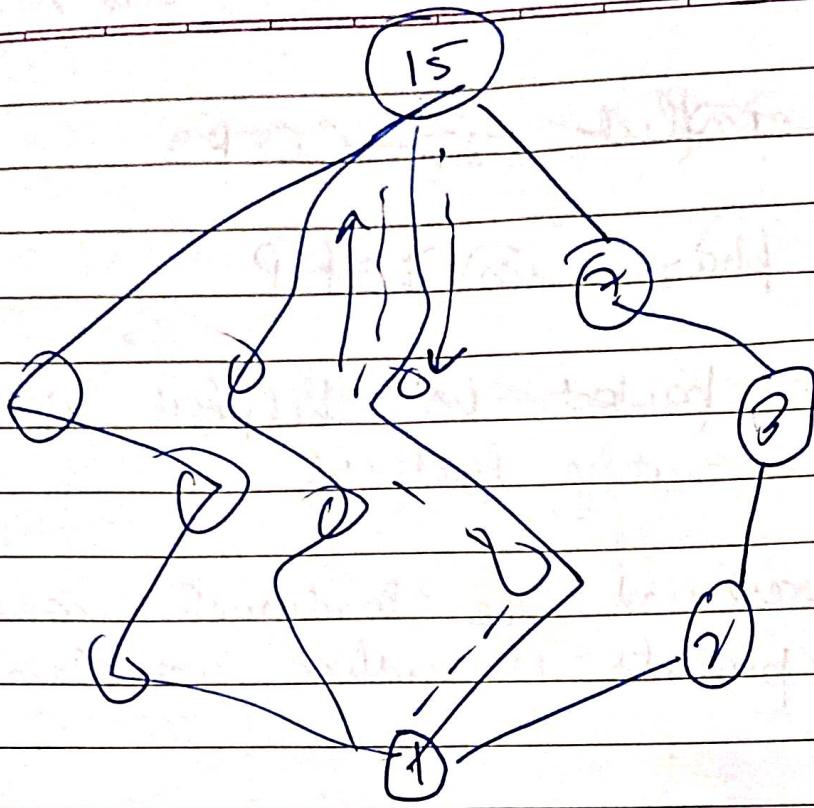
~~(Q6) Gateway conflict in CGRS~~

~~(Q7) construction phase in DSRP~~

~~(Q8) Route Request packet is helpful in developing On-demand routing protocol
Q6 and Q7 ans.~~

~~(Ans) Designed to restrict the bandwidth consumed by control packets in adhoc wireless network.~~

- Basic approach is to establish a route by flooding route request packets in the network.
- Destination node responds by sending a Route Reply packet back to the source.
- Each route request carries a seq no. generated by the source node and the path it has traversed, a node checks the seq no. on the packet before forwarding it.
- ~~Q8.~~



Source node

Network link

Route request

Route reply

SN → destination nodes check → not duplicate

nodes → all nodes except the destination node.

sends route reply to SN

Prevent loops

SN decides which is best path → if link broken

SN again initiates RRP route discovery process.

(Q8) gateway conflict in CH or

Gateway that are capable of simultaneously communicating over two interfaces can avoid gateway conflict

A gateway conflict is said to occur when a CH issues a token to a gateway over spreading code while the gateway is tuned to another spreading code.