**Answer the following questions in your own words , in no more than 4 sentences each.**

1. Discuss the case when the load is low or high in a Bit Map Protocol. What will be the wait slot for a low numbered station and high numbered station?

In Bit Mat Protocols, each station is numbered 1 to N and competes to transmit information. A low numbered station has priority to transmit data over a high numbered station, but the wait for a low numbered station is higher than that for a high numbered station. Low numbered stations have to wait anywhere from N bits to 2N-1 bits. High numbered stations have to wait between 0 bits at low load and N-1 bits at high load (Meng, 1997).

1. What will happen to the overhead in case of Collision Free and Contention Based Protocols when:

* Load is Low
* Load is High

Contention Based Protocols allows many users to transmit on the same channel. This allows faster transmission when the load is low, but leads to collisions when the load is high.

Collision Free Protocols are slow at low load because they use more resources upfront to guarantee transmissions do not collide. However, they are superior when the network load is high because the need for re-transmissions is eliminated (Kothari, n.d.).

What do you understand by The Hidden Station Problem and The Exposed Station Problem?

The Hidden Station Problem: This happens when terminal A attempts to send a transmission to terminal B but is out of range of transmissions from terminal C. Collisions can happen at terminal B because terminal A and C cannot coordinate and may transmit to B at the same time (CodeAlias, n.d.).

The Exposed Station Problem: Extending the situation above, station A can wait for confirmation from station B that it is ready to receive a transmission. However, if Station B stops transmissions due to a signal from Station C (because it in turn is receiving a transmission from terminal D) then terminal A is prevented from sending transmissions to terminal B which would not have collided (CodeAlias, n.d.).

What 3 properties/features are added to MACAW which were not there in MACA?

MACAW adds 3 new features to MACA (Sparks, 2010):

* ACK - Acknowledgement messages to allow for error correction
* DS - Data-Sending message before the data to prevent collisions with other terminals
* RRTS - Message by the receiver to the sender to begin a RTS-CTS transfer.

What is Time Domain Reflectometry?

Time Domain Reflectometry is a way to analyse a network’s cables for faults. This is done by transmitting a signal and waiting to see if it is reflected back. If it is, then there is a fault. The fault location can be found by dividing the time it took for the reflection to get back to the sender by two and multiplying by the velocity of the message transmission (Radio-Electronics.com, n.d.).

References

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