Graded Assessment – Medium Access Controls

Q1. Polling is a scheduling approach for dynamic medium access control. Which of following statements are correct?

- Polling can provide bounds on access delay to the shared medium
- Polling performance can deteriorate with large delay-bandwidth product
- Polling can provide fairness through regulated access opportunities
- **All of the above**

Q2. In a collision-free reservation system that has a large number of light-traffic stations, and the delay-bandwidth product is larger than 1. Which of following MAC protocol is a good fit for stations to reserve mini-slots?

- 1-persistent CSMA
- **Slotted ALOHA**
- CSMA/CD
- None of the above

Q3. In Carrier Sense Multiple Access with collision detection (CSMA-CD), how long will it take a collision to be detected and resolved?

- **Round-trip propagation delay**
- One propagation delay
- One frame transmission time
- None of the above

Q4. Suppose that the ALOHA protocol is used to share a 56 kbps satellite channel. Suppose that frames are 1000 bits long. What is the maximum throughput of the system in number of frames per second.

- 1 frame per second
- **10 frames per second**
- 100 frames per second
- None of the above

Q5. Consider building a CSMA/CD network running at 1Gbps over a 1-km cable. The signal speed in the cable is 200,000 km/sec. What is the minimum frame size?

- 64 Bytes
- 640 Bytes
- **1250 Bytes**
- None of the above

Q6. In media access control, which of the following statements are true for *Channelization*

- Widely used in internet traffic
- **Inflexible in allocating bandwidth to users with different requirements**
- **Inefficient for bursty traffic**
- **Does not scale well to large numbers of users**

Q7. Time-out period is equal to maximum possible propagation delay of

- **Round-trip**
- Triangle-trip
- Square-trip
- Rectangle-trip

Q8. In Carrier Sense Multiple Access (CSMA), if station senses medium before trying to use it then chance of collision can be

- Increased
- **Reduced**
- Doubled
- Highlighted

Q9. Carrier Sense Multiple Access (CSMA) is based on medium called

- Listen before sending
- Sense before Collision
- Listen before talk
- **Sense before transmit**

Q10. Which of the following is not true for MAC scheduling

- Can provide fairness to stations
- More efficient channel utilization
- **Reduced computational or procedural complexity**
- Less variability in delays