COM-208: Computer Networks - Quiz 1 (Solutions)

Note: Solutions correspond to version A of the quiz (version B was identical to A, only differing in the order of questions/answers.)

1. DSL and Cable are

    (a) different types of packet switches.

    (b) different technologies for connecting households to the Internet.

    (c) different layers of the Internet architecture.

2. We say that two Internet service providers (ISPs) are "peers" when

    (a) they are connected to the same Tier 1 ISP.

    (b) they are connected to the same Internet eXchange Point (IXP).

    (c) exchange traffic without necessarily paying each other.

3. The Internet architecture uses layers because they

    (a) improve performance.

    (b) reduce complexity.

    (c) prevent denial-of-service attacks.

4. The Internet uses packet switching because

    (a) it is cheaper and simpler to implement than connection switching.

    (b) it offers better performance than connection switching.

    (c) it offers more predictable performance than connection switching.

5. The Internet relies on statistical multiplexing. This means that:

    (a) Packets that are sent over the Internet reach their destination with some probability.

    (b) It is unlikely that all users that share a resource will want to use it at the same time.

    (c) It is unlikely that all switches and links will fail at the same time.

6. Assume we empty the Internet from all traffic. Then, end-system A sends one packet to end-system B. This packet will experience

    (a) 0 transmission delay.

    (b) 0 queuing delay.

    (c) 0 processing delay.

7. End-systems A and B are directly connected through a single link. Doubling the transmission rate of this link will

    (a) halve the propagation delay from A to B.

    (b) double the propagation delay from A to B.

    (c) approximately double the average throughput from A to B.

8. End-systems A and B are directly connected through two separate parallel links of the same type. Removing one link will

    (a) halve the propagation delay from A to B.

    (b) halve the average throughput from A to B.

    (c) double the average throughput from A to B.

9. Assume zero processing delays. To increase the average throughput between end-systems A and B, we must

    (a) increase the transmission rate of the bottleneck link between A and B

    (b) reduce the propagation delay of the bottleneck link between A and B.

    (c) increase the size of the queue that is at the end of the bottleneck link between A and B.

10. What type of attack will you launch to prevent users from around the world from accessing the EPFL website?

    (a) An eavesdropping attack.

    (b) An impersonation attack.

    (c) A denial-of-service attack.