COM-208: Computer Networks - Sample Quiz

Name:

1. The following is true about the network layer of the Internet:
   (a) It involves only end-hosts, like the transport and application layers.
   (b) It involves both end-hosts and network devices (routers).
   (c) It involves only network devices (routers).
2. The following is true:
   (a) Forwarding is a local process that runs in a router and determines the right output link for each incoming packet.
   (b) Routing is a local process that runs in a router and determines the right output link for each incoming packet.
   (c) Both of the above (forwarding and routing are the same thing).
3. The network layer of the Internet offers the following services:
   (a) guaranteed minimum latency.
   (b) guaranteed confidentiality.
   (c) none of the above.
4. A router is forwarding a packet with destination IP address 1.2.3.4. Which of the following could be true?
   (a) The packet matches a forwarding entry with destination prefix 1.2.3.0/24.
   (b) The packet matches a forwarding entry with destination prefix 1.2.0.0/16.
   (c) Both of the above could be true.
5. Network Address Translation (NAT):
   (a) translates MAC addresses to IP addresses.
   (b) translates IPv4 addresses to IPv6 addresses.
   (c) enables multiple end-hosts to use the same public IP address.
6. Dijkstra's algorithm takes as input:
   (a) the IP destination address of each incoming packet.
   (b) the network graph and the weights (or costs) of all the network links.
   (c) the network graph and the current load of each network link.
7. The Bellman-Ford algorithm computes:
   (a) the shortest path from a given router to every other router in the network.
   (b) the correct output link for each incoming packet.
   (c) the current load of each network link.
8. "Count to infinity" is:
   (a) an attack on the Bellman-Ford algorithm that prevents it from converging.
   (b) a scenario where a bad implementation of the Bellman-Ford algorithm takes a needlessly long time to converge.
   (c) There is no such thing. This is a trick question.
9. Dijkstra's and Bellman-Ford:
   (a) are two different names for the same forwarding algorithm.
   (b) are two different names for the same routing algorithm.
   (c) are two different routing algorithms; one is centralized, the other is distributed.
10. In today's Internet:
    (a) each autonomous system (AS) may use a different intra-AS routing protocol.
    (b) all autonomous systems use the same inter-AS routing protocol.
    (c) both of the above.