

COM-208: Computer Networks - Sample Quiz Solution

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). *(Correct)*
 - (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. *(Correct)*
 - (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. *(Correct)*
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. *(Correct)*
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. *(Correct)*
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. *(Correct)*
 - (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. *(Correct)*
 - (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. *(Correct)*
 - (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. *(Correct)*
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. *(Correct)*