NPTEL Online Certification Courses

Indian Institute of Technology Kharagpur

Course Name: ETHICAL HACKING

Assignment- Week 3

TYPE OF QUESTION: MCQ/MSQ/SA

Number of questions: **10** **Total mark: 10 x 1 = 10**

QUESTION 1:

Which of the following statement(s) is/are **false**.

a. IP protocol uses connection-oriented routing.
b. IP protocol uses connection-less routing.
c. In connection-less routing, each packet is treated as an independent packet.
d. None of these.

Correct Answer: a

Detail Solution: In connection-oriented approach, network layer first makes a connection and then all packets are delivered as per the connection. In connection-less protocol, network layer treats each packets independently. IP protocol uses connection-less approach for packet delivery.

Thus option (a) is correct.

QUESTION 2:

Which of the following is/are **false** for *direct and indirect packet delivery* option?

a. Direct delivery occurs when the destination host and deliverer are present on same network.
b. Indirect delivery occurs when the destination host and deliverer are not present on same network.
c. In direct delivery, hosts of same network can exchange packets without interference of router.
d. In an indirect delivery, the packet goes from router to router until it reaches the one connected to the same physical network as its final destination.
e. None of these.

Correct Answer: e

Detail Solution: Direct delivery occurs when the source and destination of the packet are located on the same physical network or when the delivery is between the last router and the destination host. If the destination host is not on the same network as the deliverer, the packet is delivered indirectly. In an indirect delivery, the packet goes from router to router until it reaches the one connected to the same physical network as its final destination.

Thus the correct options is (e).

QUESTION 3:

Which of the following is/are **true** for dynamic routing?

a. Routes are user defined.
b. Routing table updates periodically depending on the network condition.
c. Routers consume bandwidth for communicating with each other.
d. Failure of the link can be resolved easily (re-routing is easy).
e. None of these.

Correct Answer: b, c, d

Detail Solution: In static routing routes are defined manually and the routing table does not change until the network administrator changes manually or modify them manually. In dynamic routing routes are updated automatically based on the network condition. In dynamic routing some bandwidth are consumed for communication. In case of link failure; in static routing the administrator needs to update the routing table, whereas in dynamic routing the tables can be updated automatically, thus re-routing is easy.

Thus the true options are (b), (c) and (d).

QUESTION 4:

Which of the following routing flags can indicate route to a single host (and not to a network) in the routing table?

a. U
b. G
c. H
d. D
e. M

Correct Answer: c

Detail Solution: If the routing table entry indicates a host specific address, then it is specified by H flag.

The correct option is (c).

QUESTION 5:

Which of the following statement (s) is/are **false** for default route?

a. It is used when no specific address for next hop is available.
b. It is specified by an address 0.0.0.0.
c. It is specified by an address 127.0.0.1.
d. None of these.

Correct Answer: c

Detail Solution: Default route, also known as the gateway of last resort, is used in forwarding packets whose destination address does not match any route in the routing table. In IPv4 the CIDR notation for a default route is 0.0.0.0/0.

The correct options is (c).

QUESTION 6:

Which of the following statement(s) is/are **true** for Routing Information Protocol (RIP)?

a. RIP is an example of interior routing protocol.
b. RIP maintains timers to detect failed links.
c. RIP suffers from counting to infinity problem.
d. RIP allows faster convergence for larger network.
e. None of these.

Correct Answer: a, b , c

Detail Solution: RIP shows slow convergence for larger network, because to confirm or detect any failed link it requires to send larger number of packets as compare to other routing protocols.

The correct options are (a), (b) and (c).

QUESTION 7:

In Open Shortest Path First (OSPF) routing approach, which of the following packets is used to check if the neighbor router is up or not?

a. Link State Request.
b. Link Request Update.
c. Link State Acknowledgement.
d. TCP 3-way handshake.
e. None of these.

Correct Answer: e

Detail Solution: In Open Shortest Path First (OSPF) routing approach, the "Hello" packet is used to check if a neighbor is up or not.

Thus, the correct option is (e).

QUESTION 8:

Which of the following is **true** for IPv6?

a. IPv6 address does not have any defined classes.
b. It uses 128-bit IP addresses.
c. Base header size is 20 byte.
d. IPv6 is connection oriented.
e. All of these.

Correct Answer: a, b

Detail Solution: IPv6 uses 128-bit IP addresses, and provides a large address space. Unlike IPv4 it does not have any defined classes. Base header size of IPv6 is 40 bytes and uses connection-less approach.

Thus the correct options are (a) and (b).

QUESTION 9:

If a packet is to be delivered to all the host in a network, what kind of address should be used to specify the destination?

a. Unicast address.
b. Broadcast address.

c. Anycast address.
d. None of these.

Correct Answer: b

Detail Solution: Unicast address is used if a packet is to be delivered to a specific host. Broadcast address is used if a packet has to be delivered to all the hosts within a network or subnetwork. Anycast address is used if a packet has to be delivered to exactly one of the hosts in a network or subnetwork.

Thus, the correct option is (b).

QUESTION 10:

Consider the following routing table in a router. On which interface will an IP packet with destination address 144.25.112.40 be forwarded?

Destination	Subnet Mask	Interface
144.25.0.0	255.255.0.0	Eth0
144.25.96.0	255.255.96.0	Eth1
144.25.64.0	255.255.192.0	Eth2
144.25.112.0	255.255.240.0	Eth3
Default	0.0.0.0	Default

a. Eth0
b. Eth1
c. Eth2
d. Eth3
e. Default

Correct Answer: d

Detail Solution:

Row 1: 144.25.112.40 AND 255.255.0.0 = 144.25.0.0 ➔ Matches with destination address

Row 2: 144.25.112.40 AND 255.255.96.0 = 144.25.96.0 ➔ No Match

Row 3: 144.25.112.40 AND 255.255.192.0 = 144.25.64.0 ➔ No Match

Row 4: 144.25.112.40 AND 255.255.240.0 = 144.25.112.0 ➔ Matches with destination address

Row 4 provides longest match, thus the packet will be forwarded to interface Eth3.

Hence, the correct option is (d).

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