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:

Consider the following statements:

(i) In connection-oriented approach, network layer first makes a connection.

(ii) IP protocol uses connection-oriented routing.

a. Only (i) is true
b. Only (ii) is true
c. Both (i) and (ii) are true.
d. Both (i) and (ii) are false.

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 **true** for default route?

a. Default route is used when no specific address for next hop is available.
b. In routing table default route is specified by an address 0.0.0.0.
c. In routing table default route is specified by an address 255.255.255.255.
d. In routing table default route is specified by an address 127.0.0.1.
e. None of these.

Correct Answer: a, b

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.

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

QUESTION 3:

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

a. In static routing routes are user defined.
b. In static routing, routing table updates periodically depending on the network condition.
c. Static routing is easy to configure.
d. None of these.

Correct Answer: a

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. Also if any network change occurs, then the complete table needs to be modified.

Thus the true option is (a).

QUESTION 4:

Which of the following routing flags indicates that the router is up and running?

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

Correct Answer: a

Detail Solution: U flag indicates if the router is up and running.

The correct option is (a).

QUESTION 5:

Which of the following statement(s) is/are **true** for interior routing protocol?

a. All the participating routers are present in the same autonomous system.
b. The participating routers are present in different autonomous systems.

c. Routers in different autonomous systems exchange messages to update their routing tables.
d. Routers in the same autonomous system exchange messages to update their routing tables.

Correct Answer: a, d

Detail Solution: The interior routing protocols applies to a single autonomous system. All the routers inside the AS exchange messages using some standard protocol (e.g. RIP or OSPF) and update their routing tables.

The correct options are (a) and (d).

QUESTION 6:

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

a. RIP is an example of interior routing protocol.
b. RIP maintains timers to detect failed links.
c. RIP converges faster for large networks.
d. RIP consumes high bandwidth to update routes.
e. None of these.

Correct Answer: 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.

Thus correct option is (c).

QUESTION 7:

Which of the following is/are **false** for Border Gateway Protocol (BGP)?

a. BGP allows routers belonging to different autonomous systems to exchange routing information.
b. BGP uses TCP connection to send routing messages.
c. BGP can also be used by routers within the same autonomous systems.
d. BGP sends keepalive messages periodically to ensure that the connection between the BGP peers is alive.

e. None of these.

Correct Answer: e

Detail Solution: BGP is used for exchanging routing information by the routers belongs to different autonomous systems. However it can also be used to exchange information by routers within same AS. BGP sends routing information through TCP connection. Two BGP routers exchange information on a connection are called peers, to know if the peer is alive or not. BGP sends keepalive message periodically to its peer.

Thus the correct option is (e).

QUESTION 8:

If a packet is to be delivered to a specific 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: a

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 (a).

QUESTION 9:

Which of the following is **not true** for IPv6?

a. It uses 32-bit IP addresses.
b. IPv6 address does not have any defined classes.
c. It uses 128-bit IP addresses.
d. None of these.

Correct Answer: a

Detail Solution: IPv6 uses 128-bit IP addresses, and provides a large address space. Unlike IPv4 it does not have any defined classes.

Thus the correct option is (a).

QUESTION 10:

Consider the following routing table in a router. On which interface will an IP packet with destination address 161.44.64.120 be forwarded?

Destination	Subnet Mask	Interface
161.44.0.0	255.255.0.0	a
161.44.64.0	255.255.224.0	b
161.44.68.0	255.255.255.0	c
161.44.68.64	255.255.255.224	d
Default	0.0.0.0	e

a. Interface a
b. Interface b
c. Interface c
d. Interface d
e. Interface e

Correct Answer: b

Detail Solution:

Row 1: 161.44.64.120 AND 255.255.0.0 = 161.44.0.0 ➔ Matches with destination address

Row 2: 161.44.64.120 AND 255.255.224.0 = 161.44.64.0 ➔ Matches with destination address

Row 3: 161.44.64.120 AND 255.255.255.0 = 161.44.64.0 ➔ No match

Row 4: 161.44.64.120 AND 255.255.255.224 = 161.44.64.112 ➔ No match

Row 2 provides the longest prefix match; hence the packet will be forwarded to Interface b.

Hence, the correct option is (b).

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