

## CCNA 640-802 Bible - Describe Basic Routing Concepts

1. A router receives information about network 192.168.10.0/24 from multiple sources. What will the router consider the most reliable information about the path to that network? A: a directly connected interface with an address of 192.168.10.254/24 B: a static route to network 192.168.10.0/24 C: a RIP update for network 192.168.10.0/24 D: an [OSPF](#) update for network 192.168.0.0/16 E: a default route with a next hop address of 192.168.10.1 F: a static route to network 192.168.10.0/24 with a local serial interface configured as the next hop **Correct Answers: A**

2. Refer to the output of the two show commands in the exhibit. If an administrator tries to ping host 10.1.8.5 from host 10.1.6.100, how will the ICMP packets be processed by Router A?

```
RouterA# show ip route
<some>
router ri
network
!
ip classl
RouterA#
<some>
Gateway
10.0.0.0
R 10.0.0.0
C 10.0.0.0
C 10.0.0.0
R* 0.0.0.0
```

A: The packets will be discarded. B: The packets will be routed out the S0/0 interface. C: The packets will be routed out the S0/1 interface. D: The packets will be routed out the Fa0/0 interface. **Correct Answers: C** Explanation: Since network 10.1.8.0 does not exist in the routing table, [ICMP](#) packet is then sent to default route port S0/1. Default route is a special static route, which will be used when no matching option can be found between the routing tables and package destination address. If there is no default route, the packet whose destination address finds no matching option in the routing table will be discarded. Default route is very effective at certain circumstances, when there is stub network, the default route will greatly simplify router configuration, reducing the workload of administrators and improving network performance. Only one single default route can be configured on Routers.

3. Refer to the exhibit. A packet with a source IP address of 192.168.2.4 and a destination IP address of 10.1.1.4 arrives at the HokesB router. What action does the router take?

```
HokesB# show ip route
< output omitted >
Gateway of last resort is not set
192.168.2.0/28 is subnetted, 6 subnets
D 192.168.2.64 [90/20514560] via 192.168.0.6, 01:22:10, Serial0/1
D 192.168.2.80 [90/20514560] via 192.168.0.6, 01:22:10, Serial0/1
D 192.168.2.32 [90/20514560] via 192.168.9.2, 01:22:10, Serial0/0
D 192.168.2.48 [90/20514560] via 192.168.9.2, 01:22:10, Serial0/0
D 192.168.2.0 [90/30720] via 192.168.1.10, 01:22:10, FastEthernet0/0
D 192.168.2.6 [90/156160] via 192.168.1.10, 01:22:11, FastEthernet0/0
192.168.9.0/30 is subnetted, 1 subnets
C 192.168.9.0 is directly connected, Serial0/0
192.168.0.0/30 is subnetted, 1 subnets
C 192.168.0.4 is directly connected, Serial0/1
192.168.1.0/30 is subnetted, 1 subnets
C 192.168.1.8 is directly connected, FastEthernet0/0
HokesB#
```

A. forwards the received packet out the Serial0/0 interface B. forwards a packet containing an [EIGRP](#) advertisement out the Serial0/1 interface C. forwards a packet containing an ICMP message out the FastEthernet0/0 interface D. forwards a packet containing an ARP request out the FastEthernet0/1 interface Answer: C Explanation: Observe this line ?D 192.168.2.0[90/30720] via 192.168.1.10,01:22:10 FastEthernet0/0? carefully, we know that 192.168.2.4 are communicating with P4S-R via fa0/0, and the router will send an ICMP message after receiving the packets.

4. Use the output from the router shown in the graphic above to determine which of the following are correct. (Choose two.)

```
John#show ip protocol
Routing Protocol is "rip"
  Sending updates every 30 seconds, next due in 4 seconds
  Invalid after 180 seconds, hold down 180, flushed after 240
  Outgoing update filter list for all interfaces is not set
  Incoming update filter list for all interfaces is not set
  Redistributing: rip
  Default version control: send version 1, receive any version
  Interface      Send Recv Triggered RIP Key-chain
  Serial0/0      1  1 2
  Serial0/1      1  1 2
Automatic network summarization is in effect
Maximum path: 4
Routing for Networks:
  10.0.0.0
Routing Information Sources:
  Gateway         Distance   Last Update
  10.168.11.14    120       00:00:22
Distance: (default is 120)

John#show ip interfaces brief
Interface      IP-Address   OK? Method Status
FastEthernet0/0 192.168.13.1 YES manual up
Serial0/0       10.168.11.17 YES manual up
FastEthernet0/1 unassigned  YES NVRAM administratively down
Serial0/1       192.168.11.21 YES manual up
```

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A. Router John uses a link-state routing protocol. B. Router John will receive routing updates on the Serial0/0 interface. C. Router John will receive routing updates on the Serial0/1 interface. D. Router John will send routing updates out the Serial0/0 interface. E. Router John will send routing updates out the FastEthernet0/0 interface. F. Router John will send routing updates out the Serial0/1 interface. Answer: BD Explanation: Routing information sources only has 10.168.11.14 which is in the same subnet together with s0/0. This indicates that only s0/0 enables RIP protocol, so only s0/0 will send and receive [RIP](#) routing information.