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Scenario-based Network Engineer

CCNA Interview questions with answers

swipe



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1. Scenario – You have configured two routers connected via a serial link. The interface status is up/down. What could be the issue?

Answer:

- up/down" means the physical layer is up (cables and hardware are fine), but the data link layer is down.

- **Common causes:**
- Mismatched encapsulation (e.g., one router uses HDLC, the other uses PPP)
- Missing clock rate on DCE side of the serial link
- Authentication failure (if using PPP with PAP/CHAP)

Commands to troubleshoot:

```bash
show controllers serial 0/0      # To check DCE/DTE
show interface serial 0/0        # To check encapsulation
```



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2. Scenario – **A user cannot access the internet. The PC's IP address is 192.168.1.10/24, gateway is 192.168.1.1, and the router is connected to the ISP. What will you check?**

Answer:

1. Ping the gateway from the PC: `ping 192.168.1.1`
2. - If this fails, check switch port or interface on the router. Ping an external IP (e.g., `ping 8.8.8.8`) from the router to verify ISP connectivity.
3. Check NAT configuration on the router if private IPs are being used.
4. Check default route on the router:

```bash
show ip route

show running-config        include ip route
```

(Ensure a route like `ip route 0.0.0.0 0.0.0.0 [next-hop]` is present.)



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3. Scenario –Two PCs are on different VLANs (VLAN 10 and VLAN 20) connected to the same switch. They cannot communicate. What should you verify?

Answer:

- Inter-VLAN routing is required. A Layer 2 switch cannot route between VLANs.
- Solutions:

- **Use a Layer 3 switch with SVIs:**

```bash
interface vlan 10
ip address 192.168.10.1 255.255.255.0
no shutdown
```

- **Or configure Router-on-a-Stick on a router with subinterfaces.**



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4. Scenario -You configured static routes between two routers, but still, there's no connectivity. What would you check?

Answer:

- Ensure IP addresses on interfaces are in the same subnet.
- Use `ping` to test interface reachability.
- Check for missing or incorrect static route:
- **Use a Layer 3 switch with SVIs:**

```bash
show ip route
```

- **Verify firewall/access-lists are not blocking traffic.**
- **Use `traceroute` to find where the packet is being dropped.**



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5. Scenario –**You are asked to connect two switches and allow VLAN traffic to pass. What configuration is required?**

Answer:

- You need to configure trunking on the interfaces:

  - **Use a Layer 3 switch with SVIs:**

```
bash

interface FastEthernet0/1
switchport mode trunk
```

  - **Make sure the allowed VLANs are not restricted:**

```
bash

switchport trunk allowed vlan all
```

  - **Both switches must use the same trunking protocol (usually IEEE 802.1Q).**



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