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Table of Content

Chapter 1: Introduction to CCNA Exam v1.0 (200-301)

CCNA Exam v1.0 (CCNA 200-301) is a 120-minute exam associated with the CCNA certification. This exam tests a candidate's knowledge and skills related to network fundamentals, network access, IP connectivity, IP services, security fundamentals, and automation and programmability. This book, Implementing and Administering Cisco Solutions (CCNA), helps candidates prepare for this exam.

The below table shows all the details there is for the CCNA Certification Exam.

Exam Name:	CCNA 200-301
Exam Description:	This exam tests a candidate's knowledge and skills related to network fundamentals, network access, IP connectivity, IP services, security fundamentals, and automation and programmability.
No. of	100 - 120 Qs.

questions:	
Type of questions:	Multiple choice (single and multiple answers), Drag-and-drop, Fill-in-the-blank, Simulation, Simlet, Testlet
Time:	120-minute
Fees:	USD 300.
Test Center:	Pearson VUE Test Center.

1.1 Exam Domain Topics

The following topics are general guidelines for the content likely to be included in the exam. However, other related topics may also appear on any specific delivery of the exam. To better reflect the contents of the exam and for clarity purposes, the guidelines below may change at any time without notice.

Domain Topics	**Percentage %**
Network Fundamentals	20%
Network Access	20%
IP Connectivity	25%
IP Services	10%
Security Fundamentals	15%
Automation and Programmability	10%
Total	**100%**

1. Network Fundamentals 20%

1. **Explain the role and function of network components**
    a. Routers
    b. L2 and L3 switches
    c. Next-generation firewalls and IPS
    d. Access points
    e. Controllers (Cisco DNA Center and WLC)
    f. Endpoints
    g. Servers
2. **Describe characteristics of network topology architectures**
    a. 2 tier
    b. 3 tier
    c. Spine-leaf
    d. WAN
    e. Small office/home office (SOHO)

f. **On-premises and cloud**

3. **Compare physical interface and cabling types**
    a. Single-mode fiber, multimode fiber, copper
    b. **Connections (Ethernet shared media and point-to-point)**
    c. **Concepts of PoE**
4. **Identify interface and cable issues (collisions, errors, mismatch duplex, and/or speed)**
5. **Compare TCP to UDP**
6. **Configure and verify IPv4 addressing and subnetting**
7. **Describe the need for private IPv4 addressing**
8. **Configure and verify IPv6 addressing and prefix**
9. **Compare IPv6 address types**
    a. Global unicast
    b. **Unique local**
    c. **Link local**
    d. **Anycast**
    e. **Multicast**
    f. **Modified EUI 64**
10. **Verify IP parameters for Client OS (Windows, Mac OS, Linux)**
11. **Describe wireless principles**
    a. Nonoverlapping Wi-Fi channels
    b. **SSID**
    c. **RF**
    d. **Encryption**
12. **Explain virtualization fundamentals (virtual machines)**
13. **Describe switching concepts**
    a. MAC learning and aging
    b. **Frame switching**
    c. **Frame flooding**
    d. **MAC address table**

2. Network Access 20%

1. **Configure and verify VLANs (normal range) spanning multiple switches**
    a. Access ports (data and voice)

   b. **Default VLAN**
   c. **Connectivity**
2. **Configure and verify interswitch connectivity**
   a. Trunk ports
   b. **802.1Q**
   c. **Native VLAN**
3. **Configure and verify Layer 2 discovery protocols (Cisco Discovery Protocol and LLDP)**
4. **Configure and verify (Layer 2/Layer 3) EtherChannel (LACP)**
5. **Describe the need for and basic operations of Rapid PVST+ Spanning Tree Protocol and identify basic operations**
   a. Root port, root bridge (primary/secondary), and other port names
   b. **Port states (forwarding/blocking)**
   c. **PortFast benefits**
6. **Compare Cisco Wireless Architectures and AP modes**
7. **Describe physical infrastructure connections of WLAN components (AP, WLC, access/trunk ports, and LAG)**
8. **Describe AP and WLC management access connections (Telnet, SSH, HTTP, HTTPS, console, and TACACS+/RADIUS)**
9. **Configure the components of a wireless LAN access for client connectivity using GUI only such as WLAN creation, security settings, QoS profiles, and advanced WLAN settings**

3. IP Connectivity 25%

1. **Interpret the components of routing table**
   a. Routing protocol code
   b. **Prefix**
   c. **Network mask**
   d. **Next hop**
   e. **Administrative distance**
   f. **Metric**
   g. **Gateway of last resort**
2. **Determine how a router makes a forwarding decision by default**
   a. Longest match
   b. **Administrative distance**
   c. **Routing protocol metric**

3. **Configure and verify IPv4 and IPv6 static routing**
    a. Default route
    b. Network route
    c. Host route
    d. Floating static
4. **Configure and verify single area OSPFv2**
    a. Neighbor adjacencies
    b. Point-to-point
    c. Broadcast (DR/BDR selection)
    d. Router ID
    e. Describe the purpose of first hop redundancy protocol

4. IP Services 10%

1. **Configure and verify inside source NAT using static and pools**
2. **Configure and verify NTP operating in a client and server mode**
3. **Explain the role of DHCP and DNS within the network**
4. **Explain the function of SNMP in network operations**
5. **Describe the use of syslog features including facilities and levels**
6. **Configure and verify DHCP client and relay**
7. **Explain the forwarding per-hop behavior (PHB) for QoS such as classification, marking, queuing, congestion, policing, shaping**
8. **Configure network devices for remote access using SSH**
9. **Describe the capabilities and function of TFTP/FTP in the network**

5. Security Fundamentals 15%

1. **Define key security concepts (threats, vulnerabilities, exploits, and mitigation techniques)**
2. **Describe security program elements (user awareness, training, and physical access control)**
3. **Configure device access control using local passwords**
4. **Describe security password policies elements, such as management, complexity, and password alternatives (multi factor authentication, certificates, and biometrics)**
5. **Describe remote access and site-to-site VPNs**
6. **Configure and verify access control lists**

7. **Configure Layer 2 security features (DHCP snooping, dynamic ARP inspection, and port security)**
8. **Differentiate authentication, authorization, and accounting concepts**
9. **Describe wireless security protocols (WPA, WPA2, and WPA3)**
10. **Configure WLAN using WPA2 PSK using the GUI**

6. Automation and Programmability 10%

1. **Explain how automation impacts network management**
2. **Compare traditional networks with controller-based networking**
3. **Describe controller-based and software defined architectures (overlay, underlay, and fabric)**
    a. Separation of control plane and data plane
    b. North-bound and south-bound APIs
4. **Compare traditional campus device management with Cisco DNA Center enabled device management**
5. **Describe characteristics of REST-based APIs (CRUD, HTTP verbs, and data encoding)**
6. **Recognize the capabilities of configuration management mechanisms Puppet, Chef, and Ansible**
7. **Interpret JSON encoded data**

Chapter 2: CCNA 200-301 Full Mock Test 1

Question 1:
What technique can be used to route IPv6 traffic over an IPv4 infrastructure?

A. NAT
B. 6 to 4 tunneling
C. L2TPv3
D. dual-stack

Answer: B.

Explanation
Overlay tunneling encapsulates IPv6 packets in IPv4 packets for delivery over IPv4 infrastructure (core network or figure below). Using overlay tunnels, you can communicate with isolated IPv6 networks without upgrading the IPv4 infrastructure between them.

Question 2:
According to the picture below, a network technician is asked to design a small redundant network. The image shows this design where all computers are configured in the same VLAN. What conclusions can be drawn about this design?

A. This design will work as intended.
B. Spanning-trees will need to be used.
C. The router will not accept the addressing scheme.
D. The connection between the switches must be a circuit.
E. Router interfaces must be covered by the 802.1Q protocol.

Answer: C.

Explanation

Each interface on a router must be on a different network. If there are two interfaces on the same network, the router will not accept it and will show an error when the administrator assigns it.

Question 3:
Which statement is correct for the command ip route 172.16.3.0 255.255.255.0 192.168.2.4? (Choose two.)

A. It establishes a static route to the 172.16.3.0 network.
B. It establishes a static route to the 192.168.2.0 network.
C. It configures the router to send any traffic for an unknown destination to the 172.16.3.0 network.
D. It configures the router to send any traffic for an unknown destination out the interface with the address 192.168.2.4.
E. It uses the default administrative distance.

Answer: A, E.

Explanation
The target network is the 172.16.3.0 prefix subnet. The 192.168.2.0 network is a transit hop to reach the static route destination. Since no metrics are set, the default 6 values will be used.

Question 4:
What is the advantage of private IPv4 IP addresses? (Choose two.)

A. They are routed the same as public IP addresses.
B. They are less costly than public IP addresses.
C. They can be assigned to devices without Internet connections.
D. They eliminate the necessity for NAT policies.
E. They eliminate duplicate IP conflicts.

Answer: B, C.

Explanation
Private IP addresses are free as they are used in the internal network. You do not pay for using a private IP address. Since private IP addresses are

used in the internal network, devices on the same network can communicate with each other without the internet.

Question 5:
What are the advantages of the UDP protocol for application traffic? (Choose two.)

A. UDP traffic has lower overhead than TCP traffic
B. UDP provides a built-in recovery mechanism to retransmit lost packets
C. The CTL field in the UDP packet header enables a three-way handshake to establish the connection
D. UDP maintains the connection state to provide more stable connections than TCP
E. The application can use checksums to verify the integrity of application data

Answer: A, E.

Explanation
UDP traffic has a lower overhead than TCP traffic and the Application can use checksums to verify the integrity of application data.

Question 6:
Which WAN access technology is preferable for a small office architecture?

A. broadband cable access
B. frame-relay packet switching
C. dedicated point-to-point leased line
D. Integrated Services Digital Network switching

Answer: A.

Explanation
Broadband connection is preferred for WAN access in small offices. Broadband connections are often used to connect small offices and telecommunications workers to a corporate site over the Internet.

Question 7:
In WAN architecture, which helps a business's scalability and reliability for the network? (Choose two.)

A. asynchronous routing
B. single-homed branches
C. dual-homed branches
D. static routing
E. dynamic routing

Answer: C, E.

Explanation
Multiple ports are used in WAN architecture to secure connections and prevent interruption. In addition, when one of the connections is broken, dynamic routing is done to ensure that the connection continues from the other branch.

Question 8:
What is the binary representation of a unique ipv6 local address?

A. 0
B. 11111100
C. 11111111
D. 11111101

Answer: B.

Explanation
IPv6 Unique Local Address is an IPv6 address in block FC00::/7; this means IPv6 Unique Local addresses start with 7 bits and 1111 110 -> Answer B is correct. Note: The IPv6 Unique Local Address is the approximate IPv6 equivalent of an IPv4 private address. It is not routable on the global Internet.

Question 9:

What are the reasons for using an IPV4 private IP domain? (Choose two.)

```
Router(config)#interface GigabitEthernet 1/0/1
Router(config)#ip address 192.168.34.145 255.255.255.240
Bad mask /28 for address 192.168.34.145
```

A. to enable intra-enterprise communication
B. to implement NAT
C. to connect applications
D. to conserve global address space
E. to manage routing overhead

Answer: A,

Explanation
Private IP provides ease of use for the company. It can be used for the Internet in the same traffic as in the works in the Internet environment. Private IP is used to protect the public address. Instead of giving a public IP for each, it is passed with a private IP inside, and it is sold over the internet over the public IP with NAT on exits to the Internet.

Question 10:
According to the picture, when C-1 sends a packet to C-2, what source and destination IP address does it have when the packet reaches the Gi0/0 interface on router R2?

A. source is 192.168.10.10 and destination is 10.10.2.2
B. source 192.1 68.20.10 and destination 192.168.30.1
C. source is 192.168.20.10 and destination is 192.168.30.10
D. source 10.10.1.1 and destination 10.10.2.2

Answer: C.

Explanation
The source and destination IP addresses of the packets do not change along the entire path. Only the source and destination MAC addresses are changed.

Question 11:
What features do Copper and Fiber SFP modules have in common?

A. They support an inline optical attenuator to increase signal strength
B. They contain single-mode and multi-mode in a single module
C. They provide minimal disruption to services as they are hot-swappable.
D. They offer reliable bandwidth of up to loo Mbps in half duplex mode

Answer: C.

Explanation
The Hot-Swap-Component can be removed or installed without powering down the device.

Question 12:
What are server functions? (Choose two.)

A. handles simultaneous requests from multiple workstations
B. provides redundancy using only virtual server clustering
C. hosted in a data center dedicated to a single customer only
D. runs the same operating system to communicate with other servers
E. runs applications that send and receive data for the requesting workstations

Answer: A, E.

Explanation
The server can be related to the program coming from more than one computer at the same time, it can process the one installed on it and respond to incoming requests.

Question 13:
What function is performed by the collapsed core layer in a two-tier architecture?

A. enforcement of routing policies
B. flag interesting traffic for data policies

C. implementation of security policies
D. adding users to the edge of the network

Answer: A.

Explanation
"collapsed core" is the implementation of the distribution (routing) layer and core layer functions by a single device. The primary motivation of the collapsed core design is to reduce the cost of the network while retaining many of the benefits of the three-tier hierarchical model.

Question 14:
What is the primary function of the Layer 3 device?

A. to transmit wireless traffic between hosts
B. to analyze traffic and leave unauthorized traffic from internet
C. to forward traffic within the same broadcast domain
D. to forward traffic between different networks

Answer: D.

Explanation
Forwarding a layer 3 device is to forward different networks.

Question 15:
What function is performed by the core layer in a Layer-3 architecture? (Choose two.)

A. Provide uninterrupted forwarding service
B. Examine packages for malicious activity
C. Ensure timely data transfer between tiers
D. Provide direct connectivity for end-user devices
E. Police traffic sent to the end of the network

Answer: A, C.

Explanation

Core – also called the network backbone, this layer is responsible for transporting large volumes of traffic quickly. The core layer provides interconnection between distribution layer devices and

Question 16:
What is the recommended approach to avoid co-channel congestion when installing access points using the 2.4 GHz frequency?

A. Using different non-overlapping channels
B. Using an overlapping channel
C. using a non-overlapping channel
D. Using different overlapping channels

Answer: A.

Explanation
It runs each AP on one channel. At the same time, the purpose of neighborhood APs is to exploit this auxiliary non-developing multi-channel. (Neighboring channel causes interference)

Question 17:
A manager asks a network engineer to recommend a cloud service model that employees can access without spending time installing, managing, and updating software that is used only occasionally. What cloud service model can the engineer recommend?

A. infrastructure as a service
B. platform as a service
C. business process as a service to support different types of services
D. software as a service

Answer: D.

Explanation
Software as a Service, or SaaS for short, is a cloud-based method of providing software to users. SaaS users subscribe to an app instead of purchasing and installing it once. Users can login and use a SaaS application from any compatible device over the Internet. The actual

application runs on cloud servers that may be very far from the user's location.

Question 18:
What is the function of the layer 2 switch? (Choose two.)

A. Acts as a central point for association and authentication servers
B. Selects the best route between networks on the WAN
C. carries packets in a VLAN
D. moves packets between different VLANs
E. makes routing decisions based on a packets MAC address

Answer: C, F.

Explanation
A Layer 2 switch is a type of network switch or device that operates at the data link layer (OSI Layer 2) and uses the MAC Address to determine the path through which frames will be forwarded. It uses hardware-based switching techniques to connect and transmit data to the local area network (LAN).

Question 19:
A network technician examines the wireless network, noting high usage on 2.4GHz channels and lower usage on 5GHz channels. What should be configured to allow clients to preferably use 5GHz access points?

A. Client Band Select
B. Re-Anchor Roamed Clients
C. OEAP Split Tunnel
D. 11ac MU-MIMO

Answer: A.

Explanation
Band Select is Cisco's terminology for Band Steering. When enabled, it promotes stations to the 5 GHz band. This is achieved by responding to station probe requests by suppressing 2.4 GHz probe response frames and first with 5 GHz probe response frames.

Question 20:
What network function takes place in the data plane?

A. processing inbound SSH management traffic
B. sending and receiving OSPF Hello packets
C. facilitates spanning-tree elections
D. forwarding remote client/server traffic

Answer: D.

Explanation
Network devices operate on two planes; data plane and control plane. The control plane maintains the Layer 2 and Layer 3 forwarding mechanisms using the CPU. The data plane transmits traffic flows

Question 21:
Under what condition is TCP preferable to UDP?

A. UDP is used when low latency is not optimal, and TCP is used when latency is tolerable.
B. TCP is used when dropped data is more acceptable and UDP is used when data is considered irregular.
C. TCP is used when data reliability is critical and UDP is used when missing packets are acceptable.
D. UDP is used when data is highly interactive and TCP is used when data is time sensitive.

Answer: C.

Explanation
Data reliability is important in TCP, but missing packets in UDP can be disastrous. Let's take another look at the VoIP example: missing packets during a call or worse, a video call can cause serious communication problems.

Question 22:

Look at the picture. Shortly after SiteA connects to SiteB over a new single-mode fiber path, users at SiteA report intermittent connectivity issues when connecting to applications running on servers located at SiteB. What is the cause of the intermittent connection issue?

A. Interface errors are incrementing.
B. High usage is causing high latency.
C. An incorrect SFP media type was used at SiteA.
D. The sites were connected with the wrong cable type.

Answer: A.

Explanation
It affects the reliability counter when input and output errors increase. This shows how likely it is that a package will be successfully delivered or received. Reliability is calculated as: reliability = number of packets / total number of frames. A value of 255 is the highest value meaning the interface is currently very reliable. The above calculation is done every 5 minutes.So answer A is correct.

Question 23:
A network engineer must configure the router R2 GigabitEthernet1/1 interface to connect to the router R3 GigabitEthernet1/1 interface. For the configuration to be applied, the engineer must compress the address 2001:0da8:0000:0000:0600:000a:300F:453B. What command should be given in the interface?

A. ipv6 address 2001::da8:0000::600:a:300F:453B
B. ipv6 address 2001:da8:0::600:a:3F:453B
C. ipv6 address 2001:da8::600:a:300F:453B
D. ipv6 address 2001:0da8::6:a:3F:453B

Answer: C.

Explanation
According to IPv6 notation, the correct answer is C. So; The ipv6 address 2001:da8::600:a:300F:453B command should be attempted.

Question 24:
What is the network device that checks the status of the packet to determine if the packet is legitimate?

A. Layer 2 switch
B. LAN controller
C. load balancer
D. firewall

Answer: D.

Explanation
It is a hardware-enabled system that can be developed from a security standpoint, that controls an incoming outgoing packet from a rule set. With the feature that can be routed, computers and outgoing packets, which are in the Internet, will be kept under control.

Question 25:
What is the role of access points in a network?

A. Integrate with SNMP to prevent DDoS attacks
B. to serve as the first line of defense in a corporate network
C. connect wireless devices to a wired network
D. Supports secure user logins to devices on the network

Answer: C.

Explanation
Access Point (AP) is an intermediate device used to connect devices with wireless networking features to a wired network.

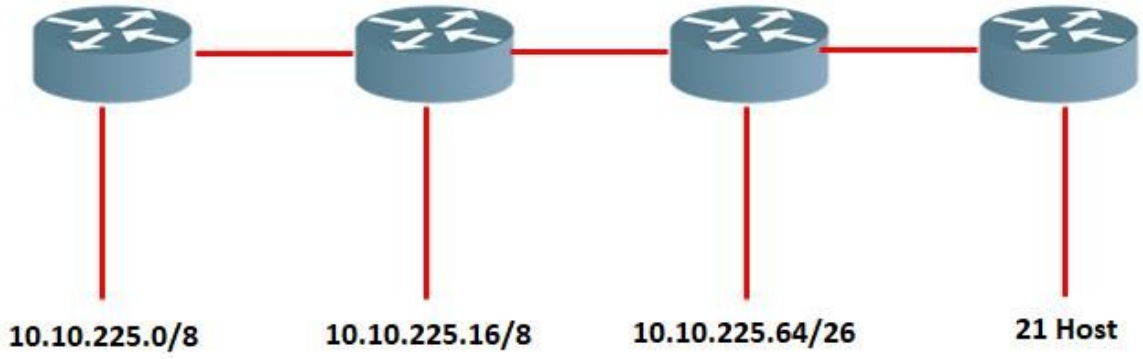
Question 26:
Preparing to create virtual machines on a host. What is required to enable communication between hardware and virtual machines?

A. Router
B. Hypervisor
C. Switch
D. Straight cable

Answer: B.

Explanation
A computer hosting VMs requires special software called a hypervisor. The hypervisor emulates the computer's CPU, memory, hard disk, network, and other hardware resources, creating a pool of resources that can be allocated to individual VMs based on their specific needs. The hypervisor supports multiple isolated virtual hardware platforms, allowing VMs to run Linux and Windows Server operating systems on the same physical host.

Question 27:
How does a Cisco Unified Wireless Network respond to a Wi-Fi channel conflict?



A. It allows the administrator to assign the channels on a per-device or per interface basis.
B. It segregates devices from different manufactures onto different channels.
C. It analyzes client load and background noise and dynamically assigns a channel.
D. It alternates automatically between 2.4 GHz and 5 GHz on adjacent access points.

Answer: C.

Explanation
What DCA does: -Dynamically manages channel assignments for an RF group. -Evaluates the assignments per AP on a radio basis. - Makes decisions using an RSSI-based cost metric function that evaluates initiative-based performance for each available channel. -Dynamically adjusts the channel plan to maintain the performance of individual radios. Actively manages OBSSs with bandwidth of -20/40/80/160 MHz. To see DCA dynamically select channels, go to the CLI on the controller and enter the debug command: debug airewave-director channel enable

Question 28:
In which of the following situations is private IPv4 addressing appropriate for a new subnet in an organization's network?

A. The network has multiple endpoint listeners, and it is desired to limit the number of broadcasts.
B. The ISP requires the new subnet to be advertised to the Internet for web services.
C. There is limited unique address space, and traffic on the new subnet will stay local within the organization.
D. Traffic on the subnet must traverse a site-to-site VPN to an outside organization.

Answer: C.

Explanation
The private IP address is used in internal networks. You can't go to a school with buses. There is limited new address space within the internal network, and once it can create a subnet, the traffic will still stay on the network.

Question 29:
What 802.11 frame type is indicated by a probe response after a wireless client sends a probe request?

A. data
B. management
C. control
D. action

Answer: B.

Explanation
Management frameworks are used to manage BSS. This includes probing, associating, roaming and disconnecting clients from BSS.

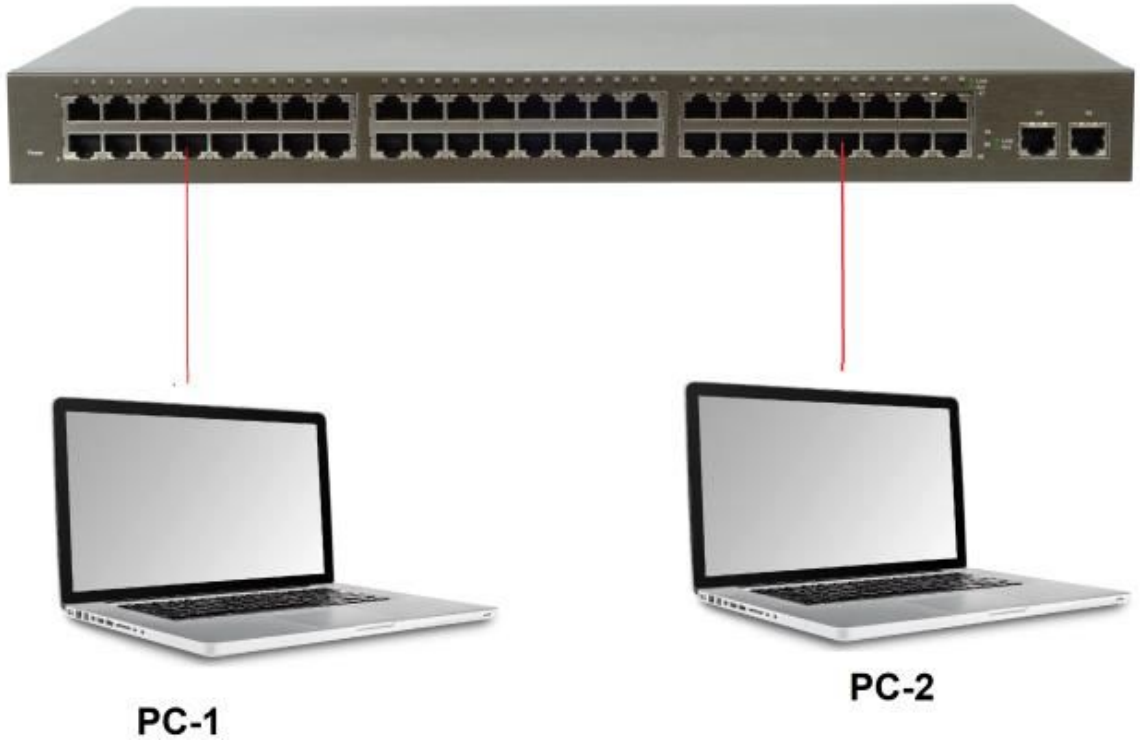
Question 30:
What is the difference between data transmission delivery and reliability in TCP and UDP protocols?

A. TCP transmits data at a higher rate and ensures packet delivery. UDP retransmits lost data to ensure applications receive the data on the remote end.
B. TCP requires the connection to be established before transmitting data. UDP transmits data at a higher rate without ensuring packet delivery.
C. UDP sets up a connection between both devices before transmitting data. TCP uses the three-way handshake to transmit data with a reliable connection.
D. UDP ¡s used for multicast and broadcast communication. TCP ¡s used for unicast communication and transmits data at a higher rate with error checking.

Answer: B.

Explanation
TCP requires connection to be established before data is transmitted (3-way hand control). UDP transmits data at a higher rate without providing packet delivery.

Question 31:
According to the network design below, when PC-1 sends traffic to PC-2, which network component is responsible for receiving the packet from PC-1, verifying the IP addresses, and forwarding the packet to PC-2?



A. router
B. Layer 2 switch
C. Load balancer
D. firewall

Answer: A.

Explanation
PC-1 and PC-2 are in different subnets, for communication, packets must be received from PC-1, their IP addresses must be verified and directed to the correct subnet. A router is used for this job.

Question 32:
What is the maximum bandwidth of a T1 point-to-point connection in Mbps?

A. 1.544 Mbps
B. 2.048 Mbps
C. 34.368 Mbps

D. 43.7 Mbps

Answer: A.

Explanation
A T1 link supports 1,544 Mbps, an E1 supports 2,048 Mbps, a T3 supports 43.7 Mbps, and an E3 link supports 34,368 Mbps. Optical Carrier (OC) transmission rates are used to describe the digital transmission capacity of a fiber optic network.

Question 33:
What is the common feature between UTP Cat 5e and Cat 6a cabling? (Choose two.)

A. Both support speeds up to 10 Gigabit.
B. Both support speeds of at least 1 Gigabit.
C. Both support runs of up to 55 meters.
D. Both support runs of up to 100 meters.
E. Both operate at a frequency of 500 MHz.

Answer: B, D.

Explanation
Both support speeds of at least 1 Gigabit and Both support runs of up to 100 meters.

Question 34:
Which of the following is a characteristic of cloud-based network topology?

A. onsite network services are provided with physical Layer 2 and Layer 3 components
B. wireless connections provide the sole access method to services
C. physical workstations are configured to share resources
D. services are provided by a public, private, or hybrid deployment

Answer: D.

Explanation
Cloud networking is referred to as the relationship and interconnection between/to IT resources in cloud computing. It enables cloud computing / service to set up with other resources above the clouds and realize network solutions.

Question 35:
What frame type is the Association Response in 802.11 protocol?

A. management
B. Protected frame
C. action
D. control

Answer: A.

Explanation
There are three main types of 802.11 frames: Data Frame, Management Frame, and Control Frame. Attribution Response is Administrative. Frame. The association response is sent in response to an association request.

Question 36:
How does the backbone and leaf architecture allow for scalability when additional access ports are required in a network using a backbone and leaf architecture?

A. A spine switch and a leaf switch can be added with redundant connections between them.
B. A spine switch can be added with at least 40 GB uplinks.
C. A leaf switch can be added with connections to every spine switch.
D. A leaf switch can be added with a single connection to a core spine switch.

Answer: C.

Explanation
Spine-leaf architecture is typically deployed as two layers: spines (such as an aggregation layer), and leaves (such as an access layer). Spine-leaf

topologies provide high-bandwidth, low-latency, non blocking server-to-server connectivity. Leaf switches do not connect to other leaf switches. In spine-and-leaf architecture, every leaf should connect to every spine in a full mesh. Leaf (aggregation) switches are what provide devices access to the fabric (the network of spine and leaf switches) and are typically deployed at the top of the rack. Generally, devices connect to the leaf switches. Devices can include servers, Layer 4-7 services (firewalls and load balancers), and WAN or Internet routers. Spine (aggregation) switches are used to connect to all leaf switches and are typically deployed at the end or middle of the row. Spine switches do not connect to other spine switches.

Question 37:
Which of the following statements describes the functionality of virtual machines?

A. The hypervisor communicates on Layer 3 without the need for additional resources.
B. Each hypervisor can support a single virtual machine and a single software switch.
C. The hypervisor can virtualize physical components including CPU, memory, and storage.
D. Virtualized servers run most efficiently when they are physically connected to a switch that is separate from the hypervisor.

Answer: C.

Explanation
The second layer of the OSI model is the primary level where the Hypervisor host works with communication with guests. Layer 1, 3 or even 4 could be related to a host. However, Layer 2 is exclusive to Tagged Ethernet Frame with MAC, 802.1q VLAN and virtual switch core functions.

Question 38:
What command for IPv6 automatically generates an IPv6 address from a given IPv6 prefix and MAC address of an interface?

A. ipv6 address dhcp

B. ipv6 address 2001:D68:5:1 I 2::/64 eui-64
C. ipv6 address autoconfig
D. ipv6 address 2001:DB8:5:112::2/64 link-local

Answer: C.

Explanation
The ipv6 address autoconfig command causes the device to perform IPv6 stateless address auto-configuration to discover prefixes on the link and then to add the EUI-64 based addresses to the interface. Addresses are configured depending on the prefixes received in Router Advertisement (RA) messages. The device will listen for RA messages which are transmitted periodically from the router (DHCP Server). This RA message allows a host to create a global IPv6 address from: Its interface identifier (EUI-64 address) Link Prefix (obtained via RA) Global address is the combination of Link Prefix and EUI-64 address.

Question 39:
When configuring IPv6, which two IPv6 multicast groups are combined? (Choose two.)

A. 2000::/3
B. 2002::5
C. FC00::/7
D. D.FF02::1
E. FF02::2

Answer: D, E.

Explanation
When an interface is configured with an IPv6 address, it automatically joins the all nodes (FF02::1) and solicited-node (FF02::1:FFxx:xxxx) multicast groups. The all- node group is used to communicate with all interfaces on the local link, and the solicited-node multicast group is required for link-layer address resolution. Routers also join a third multicast group, the all-routers group (FF02::2).

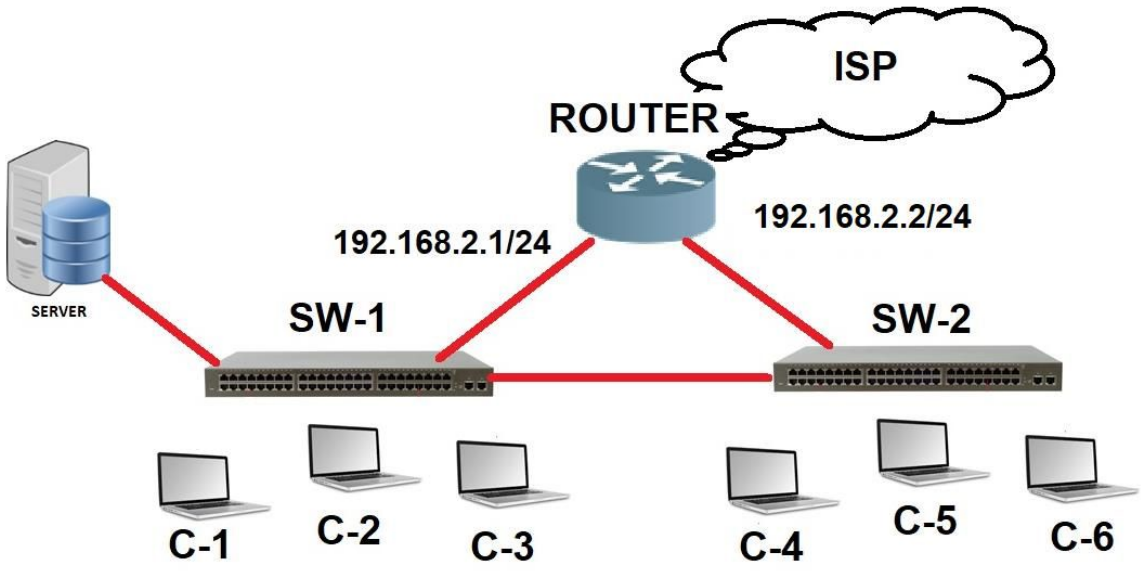
Question 40:
What is the default behavior of the Layer 2 switch when a frame with an unknown destination MAC address arrives at the Layer 2 switch?

A. The Layer 2 switch forwards the packet and adds the destination MAC address to its MAC address table.
B. The Layer 2 switch sends a copy of a packet to the CPU for destination MAC address learning.
C. The Layer 2 switch floods packets to all ports except the receiving port in the given VLAN.
D. The Layer 2 switch drops the received frame.

Answer: C.

Explanation
If the destination MAC address is not in the CAM table (unknown destination MAC address), the switch sends the frame to all other ports in the same VLAN as the received frame. This is called a flood. It does not protrude the frame from the port from which the frame was taken.

Question 41:
A network technician is asked to configure a /30 subnet between two routes. Which of the following combinations of available IP addresses and subnet masks would meet these criteria?



A. interface e0/0 description to XX-AXXX:XXXXX ip address 10.2.1.3 255.255.255.252
B. interface e0/0 description to XX-AXXX:XXXXX ip address 192.168.1.1 255.255.255.248
C. interface e0/0 description to XX-AXXX:XXXXX ip address 172.16.1.4 255.255.255.248
D. interface e0/0 description to XX-AXXX:XXXXX ip address 209.165.201.2 225.255.255.252

Answer: D.

Explanation
means 2 host bits remaining above a /30 =2^2=4. subtract 2 to give us 2 available host ip addresses. and according to the mask a /30 = .252

Question 42:
Which of the following networks allows devices to communicate without needing to access the Internet?

A. 172.9.0.0/16
B. 172.28.0.0/16
C. 192.0.0.0/8
D. 209.165.201.0/24

Answer: B.

Explanation
This question asks for private ranges of IPv4 addresses. The specific ranges for each IPv4 class are listed below: Class A private IP address ranges from 10.0.0.0 to 10.255.255.255 Class B private IP address ranges from 172.16.0.0 to 172.31.255.255 Class C private IP address ranges from 192.168.0.0 to 192.168.255.255 Only the network belongs to the 172.28.0.0/16 private IP address (class B).

Question 43:
See the picture above. Which statement describes the configuration error message received?

A. It belongs to a private IP address range.
B. The router does not support the /28 mask.
C. It is a network IP address.
D. It is a broadcast IP address.

Answer: D.

Explanation
To reach the solution; 1.First calculate subnets (borrowed 4 bits 2^4=16 subnets) or 256-240 (16) 2. Then do a math (256/16)=16 subnets, if so (144/16)=9 subnets so 144 is a subnet address and 143 is a broadcast address of previous network ID (128) it means (128+16)144

Question 44:
What is an IPv6 address that communicates between subnets but cannot route on the Internet?

A. link-local
B. unique local
C. multicast
D. global unicast

Answer: B.

Explanation
IPv6 Unique Local Address is an IPv6 address in block FC00::/7. It is the approximate IPv6 equivalent of an IPv4 private address. It is not routable on the global Internet. Note: In the past, Site local addresses (FEC0::/10) were equivalent to private IP addresses in IPv4 but are now deprecated. Link-local addresses are used only for communications within the local subnet. It is usually dynamically created using the FE80::/10 link-local prefix and a 64-bit interface identifier (based on a 48-bit MAC address).

Question 45:
Which IPv6 block sends packets to a group address instead of a single address?

A. 2000::/3
B. FC00::/7
C. FE80::/10
D. D.FF00::/8

Answer: D.

Explanation
FF00::/8 is used for IPv6 multicast and this is the type of IPv6 address the question is asking about.The FE80::/10 range is used for link-local addresses. Link-local addresses are used only for communications within the local subnet (by automatic address configuration, neighbor discovery, router discovery, and many routing protocols). Valid only in the current subnet. It is usually dynamically created using the FE80::/10 link-local prefix and a 64-bit interface identifier (based on a 48-bit MAC address).

Question 46:
What causes late conflicts to increase on an Ethernet interface? (Choose two.)

A. when Carrier Sense Multiple Access/Collision Detection is used
B. when one side of the connection is configured for half-duplex
C. when the sending device waits 15 seconds before sending the frame again

D. when a collision occurs after the 32nd byte of a frame has been transmitted
E. when the cable length limits are exceeded

Answer: B, E.

Explanation
A late collision is defined as any collision that occurs after the first 512 bits (or 64th byte) of the frame has been transmitted. The usual possible causes are full-duplex/half-duplex incompatibility, exceeding Ethernet cable length limits or faulty hardware such as faulty cabling, an incompatible number of hubs on the network, or a faulty NIC. Late collisions should never occur in a properly designed Ethernet network. They usually occur when Ethernet cables are too long or there are too many repeaters in the network.

Question 47:
What would be the benefit of using Cisco Wireless LAN Controller for a network administrator?

A. It eliminates the need to configure each access point individually.
B. Central AP management requires more complex configurations.
C. Unique SSIDs cannot use the same authentication method.
D. It supports autonomous and lightweight APs.

Answer: A.

Explanation
A wireless LAN (or WLAN) controller is used in conjunction with the Lightweight Access Point Protocol (LWAPP) to "manage large amounts of lightweight access points" by the network administrator or network operations center.

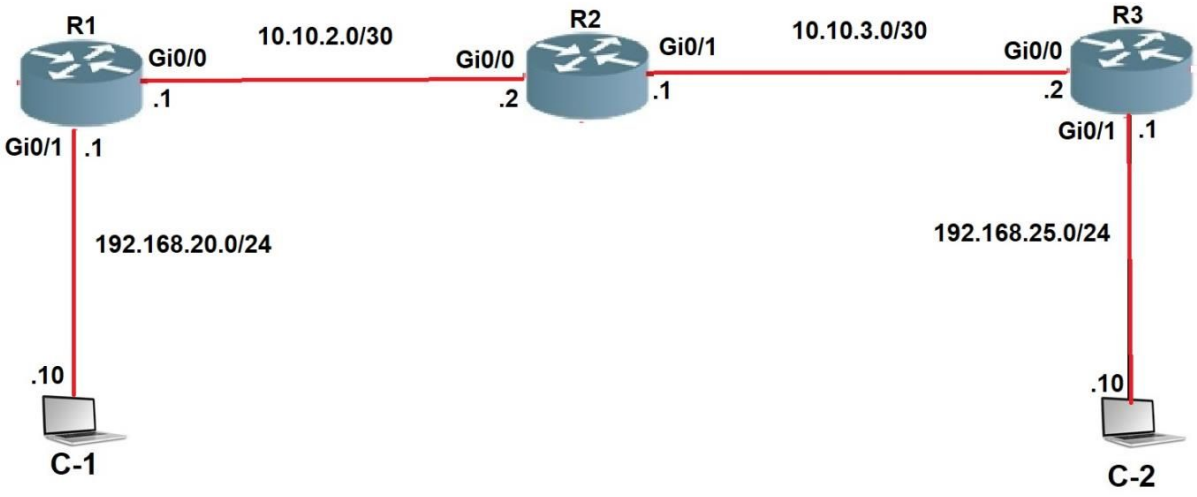
Question 48:
There is a network switch with PoE support. What action is performed on this switch by the switch port enabled for PoE power classification override?

A. If a monitored port exceeds the maximum administrative value for power, the port is shutdown and err-disabled.
B. When a powered device begins drawing power from a PoE switch port, a syslog message is generated.
C. As power usage on a PoE switch port is checked, data flow to the connected device is temporarily paused.
D. If a switch determines that a device is using less than the minimum configured power, it assumes the device has failed and disconnects it.

Answer: A.

Explanation
PoE monitoring and control compares the power consumption on the ports with the management maximum value (a configured maximum value or the port default value). If the power consumption on a monitored port exceeds the administrative maximum, the following actions occur: - A syslog message is issued. - The monitored port is closed and the error is disabled. - The allocated power is released.

Question 49:
What happens to frames during frame overflow operation?



A. Frames are sent to all ports, including those that are assigned to other VLANs.
B. Frames are sent to every port on the switch that has a matching entry in the MAC address table.

C. Frames are sent to every port on the switch ¡n the same VLAN except from the originating port.
D. Frames are sent to every port on the switch in the same VLAN.

Answer: C.

Explanation
Frame overflow will be limited to devices in that VLAN. With a potential loop issue, a device match or overflow from the switch that does NOT have a location in the MAC table can occur.

Question 50:
The range of private IPv4 addresses enables which of the following functions to be performed?

A. Allows multiple companies to use the same addresses without conflicts
B. Provides direct connectivity for hosts from outside the corporate network
C. It ensures that NAT does not need to access the Internet with private range addressing
D. provides secure communication to the Internet for all external hosts

Answer: A.

Explanation
The IPv4 domain consists of 4 32-bit arrows. The IPv4 address range allows multiple companies to use the same addresses without conflicts.

Question 51:
What action should be taken to assign a global unicast IPv6 address to a new interface derived from the MAC address of an interface?

A. explicitly assign a link-local address
B. disable the EUI-64 bit process
C. enable SLAAC on an interface
D. configure a stateful DHCPv6 server on the network

Answer: C.

Explanation
SLAAC is a method in which, after a 64-bit prefix is assigned to the host or router interface, the last 64 bits of its address are derived by the host or router with the help of the EUI-64 process described in the next few lines. SLAAC uses NDP protocol to work.

Question 52:
How do they differ in the way they provide reliability for the delivery of packets sent via TCP and UDP protocols on a network?

A. TCP does not guarantee delivery or error checking to ensure that there is no corruption of data, UDP provides message acknowledgment and retransmits data if lost.
B. TCP provides flow control to avoid overwhelming a receiver by sending too many packets at once, UDP sends packets to the receiver ¡n a continuous stream without checking.
C. TCP is a connectionless protocol that does not provide reliable delivery of data; UDP is a connection-oriented protocol that uses sequencing to provide reliable delivery.
D. TCP uses windowing to deliver packets reliably; UDP provides reliable message transfer between hosts by establishing a three-way handshake.

Answer: B.

Explanation
TCP provides flow control to avoid overwhelming the receiver by sending too many packets at once; UDP sends packets in a continuous stream to the receiver without checking them.

Question 53:
What are the two differences between fiber optic cabling and copper cabling? (Choose two.)

A. A BNC connector is used for fiber connections
B. The glass core component is encased in a cladding

C. The data can pass through the cladding
D. Light is transmitted through the core of the fiber
E. Fiber connects to physical interfaces using RJ-45 connections

Answer: B, D.

Explanation
There are 3 types of cabling: Fiber, Coaxial cable, twisted pair. The last 2 types of Copper wiring are used. BNC Connector is for Coaxial Cable, this is a plus one wrong The structure of the fiber: Jacket maintenance Buffer, Buffer housing coating, coating housing. We are unlighted to transmit data from the core. That Plus B and D is Right, RJ45 is one for twisted pair, this plus E is false

Question 54:
How does CAPWAP communicate between an access point and a WLC in local mode?

A. The access point should not be connected to the wired network as it will create a loop.
B. The access point must be connected to the same switch as the WLC.
C. The access point must be connected directly to the WLC using a copper cable
D. The access point has the ability to connect to any switch on the network, assuming it is connected to the WLC.

Answer: D.

Explanation
Control and Provision of Wireless Access Points is a point-to-point tunnel between the APs you deploy in the office space and the central WLC device in your data center.

Question 55:
In what IPv6 addressing, what block does it use to forward packets to a multicast address instead of a unicast address?

A. 2000::/3

B. FC00::/7
C. FE80::/10
D. FF00::/12

Answer: D.

Explanation
Multicast: FF00/8 -- FF00:: - FFFF:: Global Unicast: 2000::/3, 2001::/3, 2002::/4, 2001:db8::/32 Link-Local Unicast: FE80::/10 -- FE80:: - FEBF:: Unique Local Unicast: FC00::/7 -- FC00:: - FDFF:: Loopback: ::1/128

Question 56:
What is the difference between TCP and UDP transmission protocols regarding reliability and communication type?

A. TCP is reliable and is a connectionless protocol; UDP is not reliable and is a connection-oriented protocol.
B. TCP is not reliable and is a connectionless protocol; UDP is reliable and is a connection-oriented protocol.
C. TCP is not reliable and is a connection-oriented protocol; UDP is reliable and is a connectionless protocol.
D. TCP is reliable and is a connection-oriented protocol; UDP is not reliable and is a connectionless protocol.

Answer: D.

Explanation
TCP is a reliable and connection-oriented protocol; UDP is unreliable and is a connectionless protocol. TCP makes sure that the data is sent to the right destination with the 3-handshake protocol before data transmission. UDP, on the other hand, does not consider the status of the other party and does not care whether the data is transmitted or not.

Question 57:
What are the two explanations for three-layer network topologies? (Choose two.)

A. The distribution layer runs Layer 2 and Layer 3 technologies

B. The network core is designed to maintain continuous connectivity when devices fail
C. The access layer manages routing between devices in different domains
D. The core layer maintains wired connections for each host
E. The core and distribution layers perform the same functions

Answer: A, B.

Explanation
Core: Aggregates distribution switches in very large campus LANs, providing very high forward rates for larger traffic volumes due to the size of the network. In the core layer, only campus (distribution) switches should be switched. Nothing should be done to slow the forwarding of traffic, such as using ACLs, supporting clients, or routing between VLANs. Core layer switches are usually installed in a star topology. This is because core layer switches connect multiple campuses through distribution layer switches.

Question 58:
What type of IPv6 address can be publicly routed in the same way as IPv4 public addresses?

A. multicast
B. unique local
C. link-local
D. global unicast

Answer: D.

Explanation
Global unicast addresses (GUAs), also known as aggregated global unicast addresses, are publicly routable and accessible on the IPv6 Internet. They are equivalent to public IPv4 addresses. They play an important role in the IPv6 addressing architecture.

Question 59:

What result to expect when an EUI-64 address is generated?

A. The interface ID is configured as a random 64-bit value
B. The characters FE8O are inserted at the beginning of the MAC address of the interface
C. The seventh bit of the original MAC address of the interface is inverted
D. The MAC address of the interface is used as the interface ID without modification

Answer: C.

Explanation
EUI-64 Process 01.Split Mac Address in to two (00:BB:CC | DD:11:22)
02. Insert FFFE Hexa in the middle Eg: 00:BB:CC:DD:11:22 -->
02BB:CCFF:FEDD:1122 03.Invert the 7th Bit of the MAC address (0 to 1)

Question 60:
A corporate office uses four floors in one building. Floor 1 has 25 users. Floor 2 has 30 users. Floor 3 has 27 users. Floor 4 has 21 users. Which subnet summarizes and gives the most efficient distribution of IP addresses for router configuration?

A. 192.168.0.0/24 as summary and 192.168.0.0/28 for each floor
B. 192.168.0.0/23 as summary and 192.1 68.0.0/25 for each floor
C. 192.168.0.0/25 as summary and 192.168.0.0/27 for each floor
D. 192.168.0.0/26 as summary and 192.168.0.0/29 for each floor

Answer: C.

Explanation
We keep in mind not to waste IPs. /27 gives us a maximum of 30 hosts per subnet (per floor) /25 gives us a maximum of 126 hosts per subnet (Total number of hosts in the building) 192.168.0.0/25 in summary and 192.168.0.0/27 for each floor

Question 61:

Examine the picture. A network technician must add a subnet for a new office that will add 21 users to the network. What combination of IPv4 network and subnet mask does the technician assign to minimize wasted addresses?

```
SiteA# show interface   TenGigabitEthernet0 /1 /0
TenGigabitEthernet0 /1 /0 is up, line protocol is up
        Harware is BUILT-IN-EPA-8x10G, address is 850a.f04a.db90  (bia 850a.f04a.db90)
        Description: Connection to SiteB
        Internet address is 10.20.10.1/30
        MTU 8146 bytes, BW 10000000 Kbit/sec, DLY 10 usec,
                reliability 166/255, txload 1/255, rxload 1/255
        Full Duplex, 10000Mbps, link type is force-up, media type is SFP-LR
        5 minute input rate  268797000 bits/sec, 26772 packets/sec
        5 minute output rate  122465000 bits/sec, 18654 packets/sec

SiteB# show interface   TenGigabitEthernet0 /1 /0
TenGigabitEthernet0 /1 /0 is up, line protocol is up
        Harware is BUILT-IN-EPA-8x10G, address is 850a.f04a.db82  (bia 850a.f04a.db82)
        Description: Connection to SiteA
        Internet address is 10.20.10.2/30
        MTU 8146 bytes, BW 10000000 Kbit/sec, DLY 10 usec,
                reliability 166/255, txload 1/255, rxload 1/255
        Full Duplex, 10000Mbps, link type is force-up, media type is SFP-LR
        5 minute input rate  122465000 bits/sec, 18654 packets/sec
        5 minute output rate 268797000  bits/sec, 26772 packets/sec
```

A. 10.10.225.48 255.255.255.240
B. 10.10.225.32 255.255.255.240
C. 10.10.225.48 255.255.255.224
D. 10.10.225.32 255.255.255.224

Answer: D.

Explanation
Find the subnet mask *We must use the /27 prefix to have 21 Users in a subnet * So the number of hosts for the /27 prefix (2^5-2)=30 * Subnet Mask for /27 prefix (Sum of network bits (128+64+32)=224 i.e. 255.255.255.224) Find the network id Based on */27 prefix, each subnet has 30 hosts and 32 including network ID and Broadcast ID * so the first network id will be 10.10.255.0 and the second will be 10.10.255.32

Question 62:

What is a feature of backbone-leaf architecture from network technologies?

A. Each link between leaf switches allows for higher bandwidth.
B. It provides greater predictability on STP blocked ports.
C. It provides variable latency.
D. Each device is separated by the same number of hops.

Answer: D.

Explanation
A recommended solution is the backbone and leaf topology, a topology that ensures all devices have the same number of network hops, thus providing predictable and consistent network latency. Leaf switches do not connect to each other

Question 63:
A company is located in an 8-storey building with approximately 30-40 users per floor. The company wants to unite all users within the same network using a single subnet. Which command should be configured in the router Switched Virtual Interface to use the address space efficiently?

A. ip address 192.168.0.0 255.255.0.0
B. ip address 192.168.0.0 255.255.254.0
C. ip address 192.168.0.0 255.255.255.128
D. ip address 192.168.0.0 255.255.255.224

Answer: B.

Explanation
Since only one subnet is requested in total, you need a subnet that covers at least 320 users. 255.255.254.0 is correct. 256 = /24 but you need to use at least 512 to cover 320 users. 512 hosts /23 and 255.255.254.0 is the subnet mask for /23

Question 64:

One device detects two network devices sending frames at the same time. This occurs after the first 64 bytes of the frame have been received. Which interface counter increases?

A. run
B. collision
C. late collision
D. CRC

Answer: C.

Explanation
CRC is also a counter to be considered. 64 bytes (512 bits) would be particularly relevant for a late collision. The late column counter mainly corresponds to the bidirectional rate mismatch rather than the corruption problem related to faulty wiring, board or transmission and CRC errors.

Question 65:
In the case in the figure, what result is expected when PC-1 sends data to PC-2?

A. The source MAC address is changed.
B. The destination MAC address is replaced with ffff.ffff.ffff.
C. The source and destination MAC addresses remain the same.
D. The switch rewrites the source and destination MAC addresses with its own.

Answer: C.

Explanation
The easy part here is that data doesn't have to go through a router to reach a different network. PC-1 sends a ping (or anything to PC-2) The switch does not yet know who PC-2 is and forwards it via broadcast to all ports in the same VLAN minus the source port. PC-2 in the same VLAN is responding and now the switch's CAM table has both MAC addresses and corresponding ports. The MAC information on the CAM switch does not change as both PCs are on the same VLAN and do not need to go through a router (this changes the destination and source MAC)

Question 66:
Setting up multiple wireless networks in a company. Which three 2.4 GHz channels should be used to limit collisions?

A. 5, 6, 2007
B. 1, 2, 2003
C. 1, 6, 11
D. 1, 5, 10

Answer: C.

Explanation
Channels 1, 6 and 11 are used for operation on 2.4 GHz Wi-Fi networks.

Question 67:
A network technician has configured a WLAN; however, clients must access a less congested 5 GHz network for sound quality. What action should be taken to meet the requirement?

A. enable Band Select
B. enable DTIM
C. enable RX-SOP
D. enable AAA override

Answer: A.

Explanation
To switch to a network broadcasting in a different band in a network, it is necessary to use Bandpass.

Question 68:
What is the destination MAC address of a broadcast frame when communicating with the destination computer for the first time?

A. 00:00:0c:07:ac:01
B. ff:ff:ff:ff:ff:ff
C. 43:2e:08:00:00:0c
D. 00:00:0c:43:2e:08

E. 00:00:0c:ff:ff:ff

Answer: B.

Explanation
ff:ff:ff:ff:ff:ff is used as the broadcast address.

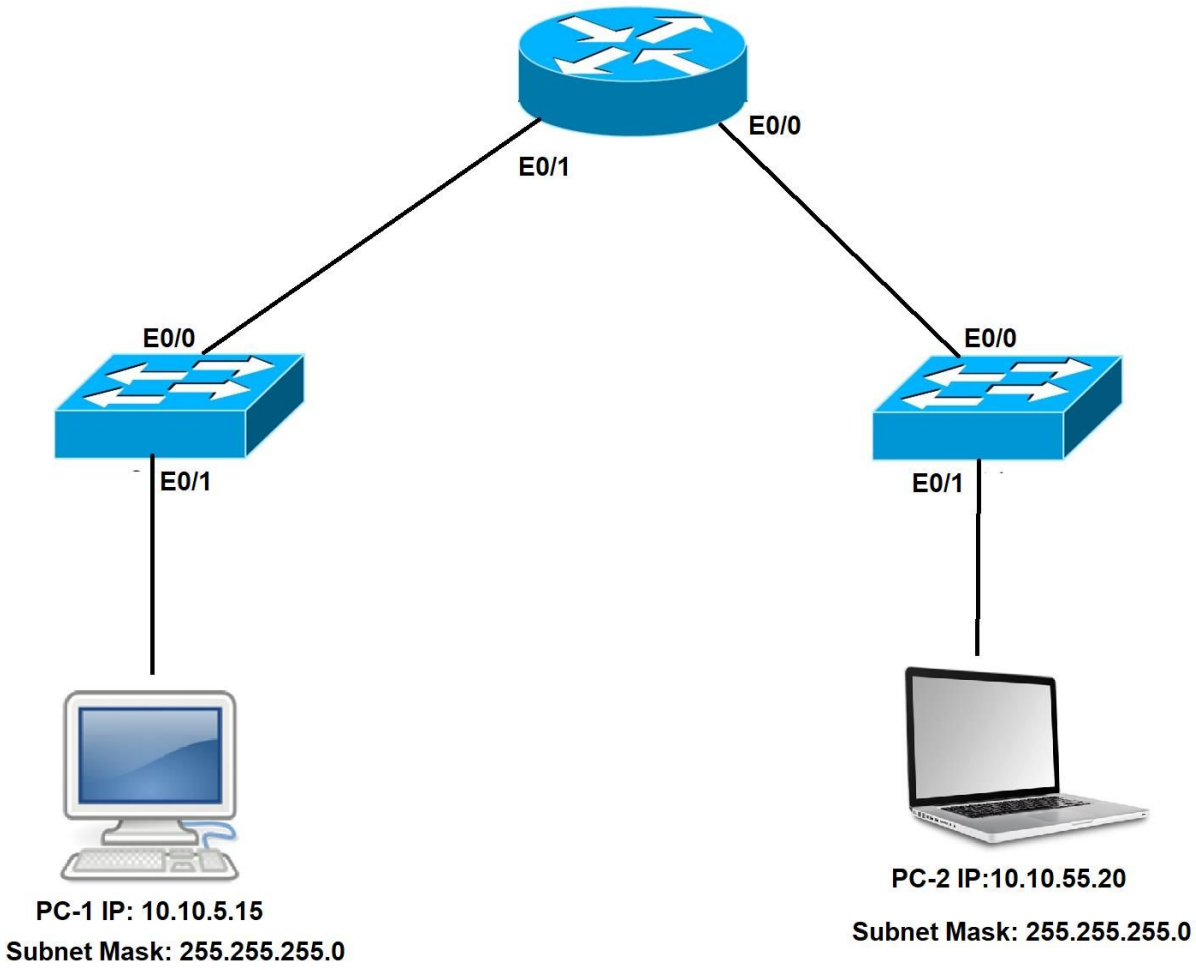
Question 69:
For what purpose does the Ethernet protocol use physical addresses? (Choose two)

A. to uniquely identify devices at Layer 2
B. to allow communication with devices on a different network
C. to differentiate a Layer 2 frame from a Layer 3 packet
D. to establish a priority system to determine which device gets to transmit first
E. to allow communication between different devices on the same network
F. to allow detection of a remote device when its physical address is unknown

Answer: A, E.

Explanation
The MAC address is used in L2 and for communication within the network (LAN).

Question 70:
Which component of the Ethernet frame is used to notify a computer that traffic is coming?



A. start of frame delimiter
B. Type field
C. preamble
D. Data field

Answer: C.

Explanation
Input is a 7 Byte field in the Ethernet frame and helps the receiver know that it is real data (Ethernet Frame) and not random noise in the transmission medium. It acts as a doorbell, telling about incoming data.

Question 71:

A network administrator is configuring the edge router interface with a public IP address for Internet connection. The router needs to get its IP address from the service provider dynamically. Which command must be entered on the FastEthernet 0/0 interface to achieve this?

A. ip default-gateway
B. ip route
C. ip default-network
D. ip address dhcp
E. ip address dynamic

Answer: D.

Explanation
In case a router is set as a DHCP server, the commands are as follows: conf t service dhcp ip dhcp pool <pool name> network <network to be use as pool> default-router <default gateway or the ip address of the ethernet interface facing the host> dns-server <ip add of your dns server, say: 8.8.8.8 which is a google dns> exit

Question 72:
Which two statements about the purpose of the OSI model are true? (Choose two.)

A. Describes the network functions occurring at each layer.
B. Makes it easier to understand how information travels across a network
C. Changes in one layer do not affect the other layer
D. Provides reliable data transmission with its layered approach

Answer: A, B.

Explanation
The OSI model is a construct for both TCP and UDP. This Boost does not secure its time for UDP. How to achieve your best through a network with networking and Information occurring at each layer.

Question 73:

What is a MAC address? (Choose three.)

A. To communicate with other devices on a network, a network device must have a unique MAC address
B. The MAC address is also referred to as the IP address
C. The MAC address of a device must be configured in the Cisco lOS CLI by a user with administrative privileges
D. A MAC address contains two main components, the first of which identifies the manufacturer of the hardware and the second of which uniquely identifies the hardware
E. An example of a MAC address is 0A:26:B8:D6:65:90
F. A MAC address contains two main components, the first of which identifies the network on which the host resides and the second of which uniquely identifies the host on the network

Answer: A, D.

Explanation
Media Access Control Address, that is, MAC address, is an address that will be found as defective in every device that can establish a connection with the user device, or as a hardware address, by name. The MAC address consists of 48 bits, 6 octets. The first 24 bits, that is, 3 octets, indicate the equipment company, and the second 24 bits, that is, 3 octets, show information such as the model of the hardware and the place of manufacture.

Question 74:
What network action takes place on the data plane?

A. reply to an incoming ICMP echo request
B. make a configuration change from an incoming NETCONF RPC
C. run routing protocols (OSPF, EIGRP, RIP, BGP)
D. compare the destination IP address to the IP routing table

Answer: D.

Explanation

Data plane refers to all functions and processes that forward packets/frames from one interface to another based on control plane logic. It is responsible for creating and maintaining the IP routing table. It is responsible for forwarding the actual IP packet.

Question 75:
Check out the picture below. What action do the switches perform on the trunk connection?

SW-1:
interface Fast/Ethernet0/1
switchport trunk encapsulation dot1q
switchport trunk native vlan 111
switchport mode trunk

SW-2:
interface Fast/Ethernet0/1
switchport trunk encapsulation dot1q
switchport trunk native vlan 11
switchport mode trunk

A. The trunk does not form, and the ports go into an err-disabled status.
B. The trunk forms, but the mismatched native VLANS are merged into a single broadcast domain.
C. The trunk forms, but VLAN 11 and VLAN 111 are in a shutdown state.
D. The trunk does not form, but VLAN 11 and VLAN 111 are allowed to traverse the link.

Answer: B.

Explanation
The trunk still forms with mismatched native VLANs and the traffic can actually flow between mismatched switches. But it is absolutely necessary that the native VLANs on both ends of a trunk link match; otherwise a

native VLAN mismatch occurs, causing the two VLANs to effectively merge. For example with the above configuration, SW1 would send untagged frames for VLAN 111. SW2 receives them but would think they are for VLAN 11 so we can say these two VLANs are merged.

Question 76:
What is the primary effect of the Spanning tree portfast command used on a network device?

A. It immediately enables the port in the listening state.
B. It immediately puts the port into the forwarding state when the switch is reloaded.
C. It enables BPDU messages.
D. It minimizes spanning-tree convergence time.

Answer: D.

Explanation
When you enable PortFast on the switch, the spanning tree immediately places ports in the forward state instead of going through listening, learning, and forwarding states.

Question 77:
What happens when PortFast is enabled on an interface connected to another switch?

A. Root port choice and spanning-tree recalculation are accelerated when a switch link goes down.
B. After spanning-tree converges, PortFast shuts down any port that receives BPDUs.
C. VTP is allowed to propagate VLAN configuration information from switch to switch automatically.
D. Spanning-tree fails to detect a switching loop increasing the likelihood of broadcast storms.

Answer: D.

Explanation

Enabling the PortFast feature causes a switch or a trunk port to enter STP forwarding state immediately or upon a link event, thus bypassing listening and learning states.Note: To enable link speed on a trunk port, you need the spanning tree link fast port with the trunk keyword.

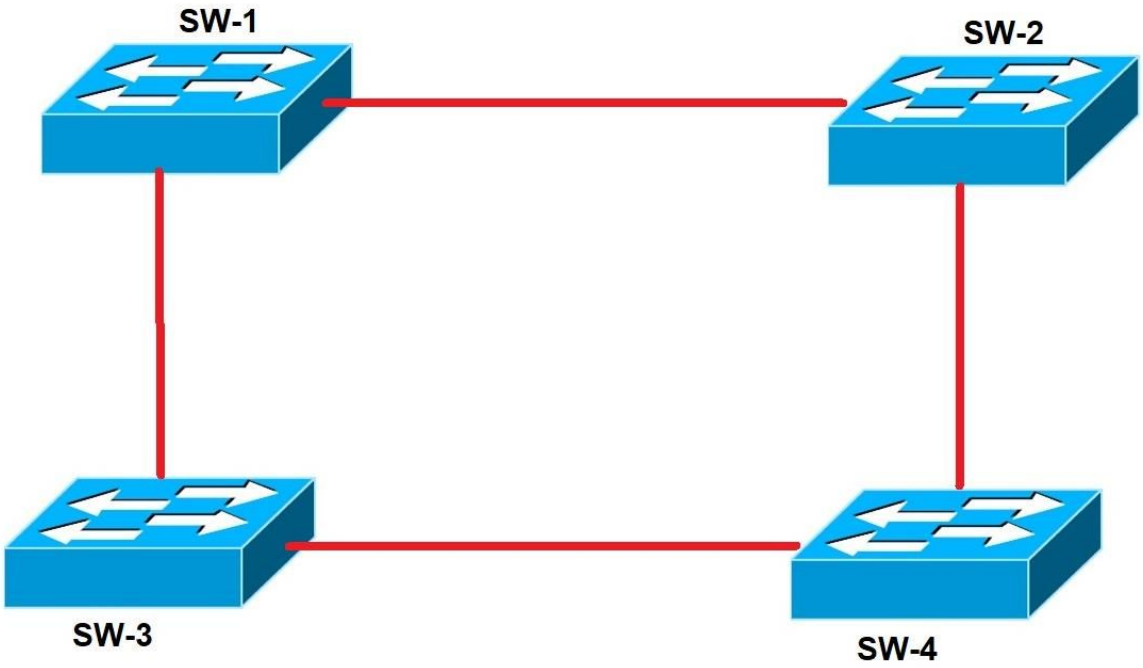
Question 78:
Which QoS Profile is selected in the GUI when configuring audio distribution over WLAN on a network?

A. Platinum
B. Bronze
C. Gold
D. Silver

Answer: A.

Explanation
Cisco Unified Wireless Network solution WLANs support four QoS levels: Platinum/Audio, Gold/Video, Silver/Best Effort (default), and Bronze/Background.

Question 79:
According to the picture below. Which switch in this configuration will be chosen as the root bridge? SW1: 1A:D0:23:41:85:08 SW2: 1A:0D:15:22:05:94 SW3: 1A:0D:15:1A:3C:9E SW4: 1A:D0:17:A1:B3:23



A. SW-1
B. SW-2
C. SW-3
D. SW-4

Answer: C.

Explanation
Assuming the Bridge Priority is the same, the lowest MAC will be selected as the root bridge. '1A:0D:15:1A' is the smallest MAC. It is assumed that the priority is the same for all 4 keys. 1A= $(1 \times 16^0) + (10 \times 16^0) = 26$ < A1 = $(10 \times 16^1) + (1 \times 16^0) = 161$

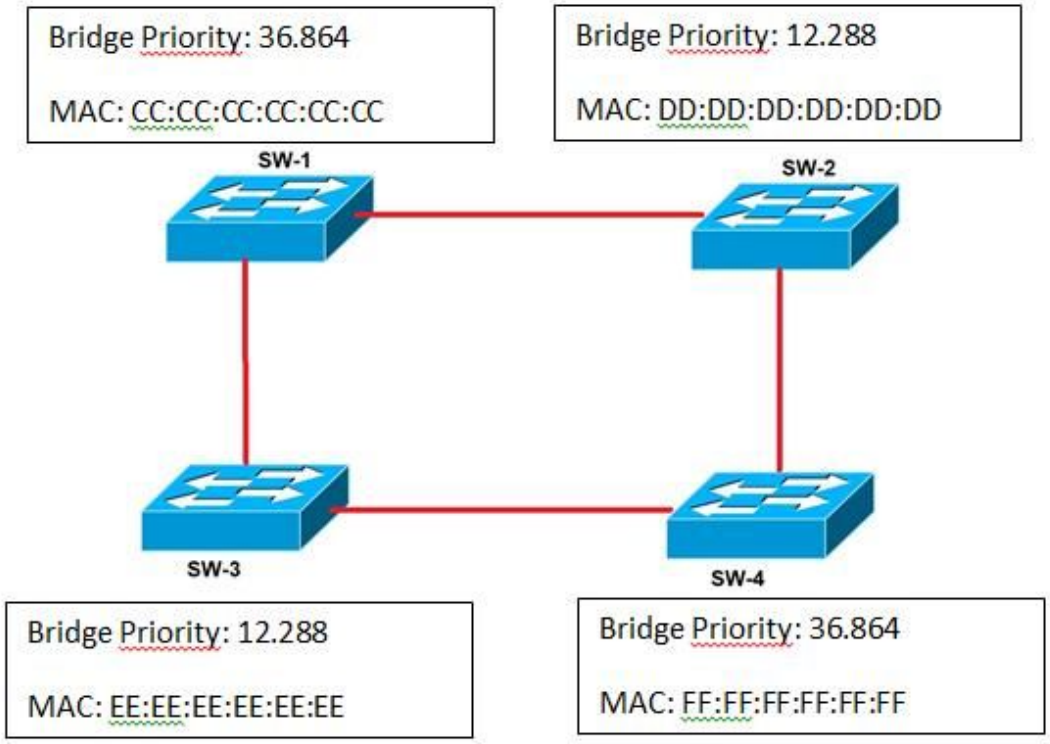
Question 80:
A network technician must configure LLDP to send the port description type length value (TLV). Which command should it use?

A. switch(config-if)#IIdp port-description
B. switch#IIdp port-description
C. switch(config-Iine)#IIdp port-description
D. switch(config)#IIdp port-description

Answer: D.

Explanation
In LLDP, your global configuration is done for you, and in this mode only one is prompted - as a command, any LLDP configuration will need a global configuration configuration.

Question 81:
According to the picture, which key would be the root bridge?



A. SW-1
B. SW-2
C. SW-3
D. SW-4

Answer: B.

Explanation

When the switch is in PVST+ mode without MAC address reduction enabled, you can enter a bridge priority value between 0-65,535. This value becomes the VLAN bridge ID priority. When the switch is in PVST+ mode with MAC address reduction enabled, you can enter one of 16 bridge priority values: 0, 4096, 8192, 12,288, 16,384, 20,480, 24,576, 28,672, 32,768, 36,864, 40,960, 45,056, 49,152, 53,248, 57.344, or 61,440. 12.288 seems to be valid as the mod is not specified in the question.

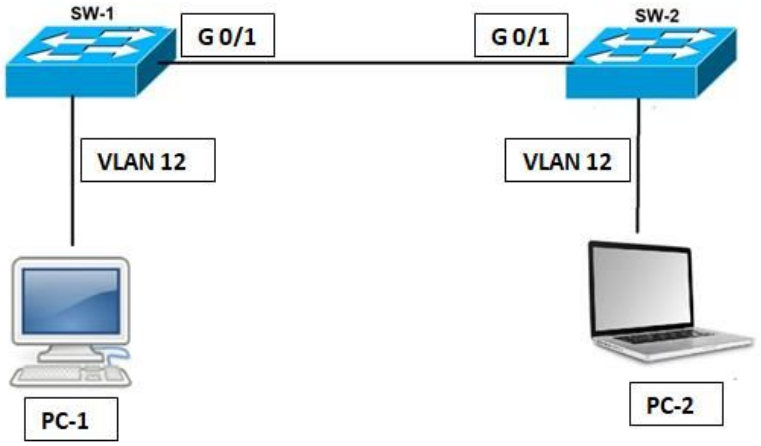
Question 82:
Which configuration ensures that the switch is always root of VLAN 7?

A. Switch(config)#spanning-tree vlan 7 priority 38418607
B. Switch(config)#spanning-tree vlan 7 priority 0
C. Switch(config)#spanning-tree vlan 7 root primary
D. Switch(config)#spanning-tree vlan 7 priority 614440

Answer: C.

Explanation
While the spanning tree vlan 7 root primary command will ensure that a switch has a lower bridge priority value than other bridges added to the network, the spanning tree vlan 7 priority 0 command ensures that the bridge priority takes precedence over all other priorities.

Question 83:
When a network technician does a ping test between PC-1 and PC-2 after the switch configuration in the picture, it fails. What error should be corrected according to the output of switch 1?



SW-1:	SW-2:
Name: Gi0/1 Switchport: Enabled Administrative Mode: trunk Operantional Mpde: trunk Administrative Trunking Encapsulation: dot1q Operational Trunking Encapsulation: dot1q Negotiation of Trunking: off Access Mode VLAN: 1(default) Trunking Native Mode VLAN: 1(default) Administrative Native VLAN tagging: enabled Voice VLAN: none [output omitted] Trunking VLANs Enabled: 10-100 Pruning VLANs Enabled: 2-1001 Capture Mode Disabled Capture VLANs Allowed :ALL	Name: Gi0/1 Switchport: Enabled Administrative Mode: trunk Operantional Mpde: trunk Administrative Trunking Encapsulation: dot1q Operational Trunking Encapsulation: dot1q Negotiation of Trunking: off Access Mode VLAN: 1(default) Trunking Native Mode VLAN: 12(VLAN0012) Administrative Native VLAN tagging: enabled Voice VLAN: none [output omitted] Trunking VLANs Enabled: 10-100 Pruning VLANs Enabled: 2-1001 Capture Mode Disabled Capture VLANs Allowed :ALL

A. The PCs are in the incorrect VLAN.
B. All VLANs are not enabled on the trunk.
C. Access mode is configured on the switch ports.
D. There is a native VLAN mismatch.

Answer: D.

Explanation
When an untagged frame enters a switch port, the local VLAN is tagged on the frame. That is, if Switch 1 were to send a frame to Switch 2, it would be sent untagged, and Switch 2 would have tagged it as VLAN 12. If Switch 2 sent the frame, Switch 1 would tag it as VLAN 1.

Question 84:
A company uses a Cisco Wireless LAN Controller. The company wants to build a system that continues to serve wireless clients after losing connection with the Cisco Wireless LAN Controller. Which unified access point mode can be used on this system?

A. local
B. mesh
C. flexconnect
D. sniffer

Answer: C.

Explanation
In previous versions, a FlexConnect access point switches to standalone mode when disconnected from a controller. Centrally switched clients are disassociated. However, the FlexConnect access point continues to serve locally switched clients. When the FlexConnect access point rejoins the controller (or a standby controller), all clients are disconnected and re-authenticated. This functionality has been enhanced and the connection between clients and FlexConnect access points is kept intact and clients experience seamless connectivity. When both the access point and the controller have the same configuration, the connection between clients and APs is maintained.

Question 85:
Look at the picture. Which of the following commands provides this output?

```
Router#

Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge
S - Switch, H - Host, I - IGMP, r - Repeater

Device ID        Local Intrfce     Holdtme    Capability  Platform  Port ID
10.10.12.100     Eth 0/1           122          T S       WS-C2900  2/11
10.10.12.100     Eth 0/1           179           R        4500      Eth 0
10.10.12.100     Eth 0/1           155           R        2500      Eth 0
10.10.12.100     Eth 0/1           155           R        2509      Eth 0
```

A. show ip path
B. show cdp neighbor
C. show idp interface
D. show interface

Answer: B.

Explanation
To view information about neighbors, use the show cdp neighbors privileged EXEC command: show cdp neighbors

Question 86:
Which mode should be used to configure EtherChannel between two switches without using a handshake protocol?

A. active
B. on
C. auto
D. desirable

Answer: B.

Explanation
Static Persistence packages connections unconditionally and no handshake protocol is used. In this mode, neither PAgP nor LACP packets are sent or received.

Question 87:
A network technician wants to control the wireless devices used in the company with the Cisco Wireless LAN Controller. Which mode allows access points to be managed by Cisco Wireless LAN Controllers?

A. bridge
B. lightweight
C. mobility express
D. autonomous

Answer: B.

Explanation
A Lightweight Access Point (LAP) is an AP designed to connect to a wireless LAN (WLAN) controller (WLC). APs are lightweight, meaning they cannot act independently of the wireless LAN controller (WLC). WLC manages AP configurations and firmware. APs are deployed with zero touch and no individual configuration of APs is required.

Question 88:
What value or setting should be entered when configuring a new WLAN in the Cisco Wireless LAN Controller GUI? (Choose two.)

A. QoS settings
B. IP address of one or more access points
C. SSID
D. profile name
E. management interface settings

Answer: C, D.

Explanation
The SSID and Profile Name will be used for identification and will be important when creating a new WLAN.

Question 89:
Which command is used to specify the delay in seconds for LLDP to start on an interface?

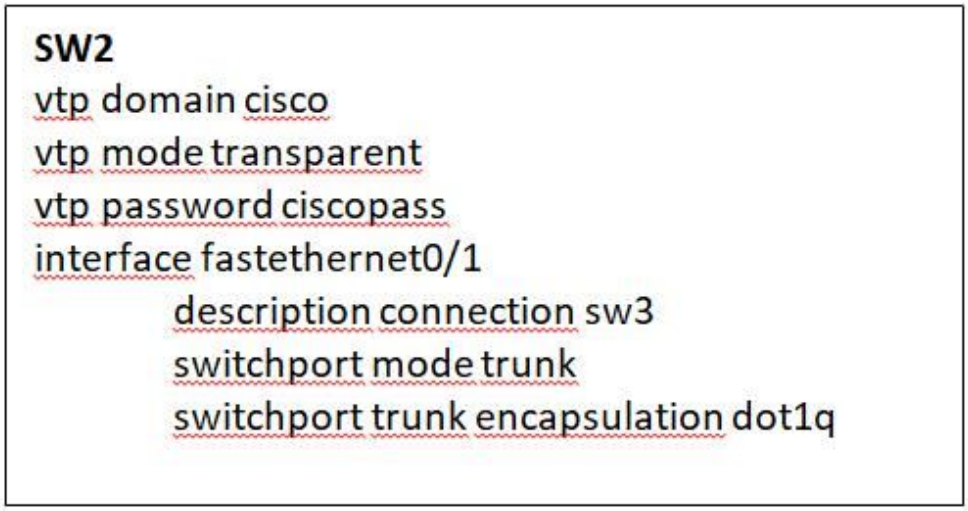
A. IIdp timer
B. IIdp tlv-select
C. IIdp reinit
D. IIdp holdtime

Answer: C.

Explanation
lldp holdtime seconds: Specify the amount of time a receiving device should hold the information from your device before discarding it lldp reinit

delay: Specify the delay time in seconds for LLDP to initialize on an interface lldp timer rate: Set the sending frequency of LLDP updates in seconds

Question 90:
According to the image below, how does SW2 interact with other switches in this VTP domain?



A. Transmits and processes VTP updates on main ports from any VTP client on the network.
B. Processes VTP updates on access ports from any VTP client on the network.
C. Receives updates from all VTP servers and forwards all locally configured VLANs to all home ports.
D. It only forwards the VTP ads it receives on the main ports.

Answer: D.

Explanation
SW2's VTP mode is transparent, so it only forwards the VTP updates it receives to trunk connections without processing it.

Question 91:
See the command line output below. In what mode is the SW-3 port channel configured according to the LACP neighbor status?

```
SW-3#sh lacp neighbor
Flags:  S- Device is requesting Slow LACPDUs
        F- Device is requesting Fast LACPDUs
        A- Device is in Active mode
        P- Device is in Passive mode
Channel group 28 neighbors
Partner's information:
Port      Flags  LACP Port Priority  Dev ID          Age  Admin Key  Oper Key  Port Number  Port State
Eth0/1    SP     32768               bbcc.ddee.6000  8s   0x0        0x24      0x201        0x3c
Eth1/1    SP     32768               bbcc.ddee.6000  8s   0x0        0x24      0x202        0x3c
```

A. mode is on
B. active
C. passive
D. auto

Answer: B.

Explanation
From the neighbor status, we notice the Flags are SP. P here means the neighbor is in Passive mode. In order to create an Etherchannel interface, the (local) SW-3 ports should be in Active mode. Moreover, the Port State in the exhibit is 0x3c(which equals to 00111100 in binary format). Bit 3 is 1 which means the ports are synchronizing -> the ports are working so the local ports should be in Active mode.

Question 92:
In a corporate network, two switches are connected and use Cisco Dynamic Channel Protocol. SW1 is set to Dynamic Auto and SW2 is set to Dynamic Desired. What is the result of this configuration?

A. The link becomes an access port.
B. The link is in an error disabled state.
C. The link is in a down state.
D. The link becomes a trunk port.

Answer: D.

Explanation

Dynamic Auto — ensures that the Ethernet port is willing to convert the connection to a trunk connection. If the neighboring port is set to trunk or desired dynamic mode, the port becomes a trunk port. This is the default mode for some switch ports. Dynamic Desirable — Allows the port to actively attempt to convert the connection to a trunk connection. If the neighboring Ethernet port trunk is set to the desired dynamic or dynamic auto mode, the port becomes a trunk port.

Question 93:
What action does a Cisco IP phone take if it receives untagged data traffic from a connected computer?

A. It drops the traffic.
B. It allows the traffic to pass through unchanged.
C. It tags the traffic with the native VLAN.
D. It tags the traffic with the default VLAN.

Answer: B.

Explanation
Untagged traffic from the device connected to the Cisco IP Phone passes through the phone unchanged regardless of the trust status of the access port on the phone.

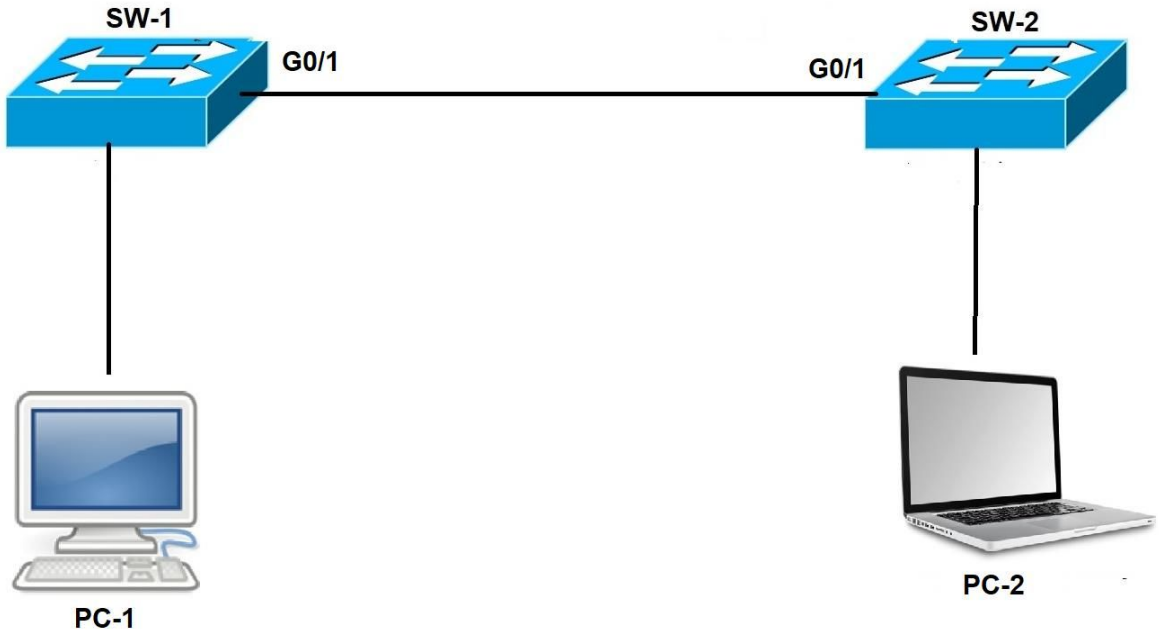
Question 94:
A company wants to set up an 802.11b wireless network. What design element is best practice when deploying wireless infrastructure to be installed?

A. Allocating non-overlapping channels to access points that are physically close to each other
B. Disabling TCP so that access points can negotiate signal levels with their connected wireless devices
C. Configuring access points to provide clients with a maximum of 5 Mbps
D. Setting the maximum data rate to 54 Mbps on the Cisco Wireless LAN Controller

Answer: A.

Explanation
Choosing the appropriate WiFi channel can significantly improve your WiFi coverage and performance. In the 2.4 GHz band, 1, 6 and 11 are the only non-overlapping channels. Choosing one or more of these channels is an important part of setting up your network correctly.

Question 95:
See the picture below. A network administrator wants VLAN 17 traffic to remain untagged between SW-1 and SW-2, while all other VLANs remain tagged. Which command performs this task?



A. switchport access vlan 17
B. switchport trunk allowed vlan 17
C. switchport private-vlan association host 17
D. switchport trunk native vlan 17

Answer: D.

Explanation

Local VLAN: Local VLAN is the VLAN into which untagged traffic will be placed when received on a home port. This makes it possible for your VLAN to support legacy devices or devices that do not tag their traffic, such as some wireless access points and network-only devices.

Question 96:
What script must be configured on a switch to create a Layer 3 EtherChannel with an open standard protocol? (Choose two.)

A. interface GigabitEthernet0/0/l channel-group 10 mode auto
B. interface GigabitEthernet0/0/l channel-group 10 mode on
C. interface port-channel 10 no switchport ip address 172.16.0.1 255.255.255.0
D. interface GigabitEthernet0/0/l channel-group 10 mode active
E. interface port-channel 10 switchport switchport mode trunk

Answer: C, D.

Explanation
The two choices are "open standard" and "proprietary". Proprietary means “something” that is used, produced, or marketed under exclusive legal right of the inventor or maker". In this case, that would be PAgP (Cisco's protocol for link aggregation) using the auto/desirable option. Open standard means that the protocol is developed by a recognized governing body/authority which develops standards through collaboration and then anybody can develop a product which uses those protocols as long as they comply with the standard. In the case of link aggregation that would be LACP (active/passive). interface port-channel 10 no switchport ip address 172.16.0.1 255.255.255.0 (incorrect, does not need an IP, it's a layer 2 protocol) interface GigabitEthernet0/0/1 channel-group 10 mode active (correct, uses LACP... this is open)

Question 97:
According to the image below, what commands used together create port 15? (Choose two.)

```
SW-1# show etherchannel summary
[output omitted]
Group  Port-channel  Protocol    Ports
------+-------------+-----------+-----------------------------------
15     Po15(SU)      LACP        Gi0/0(P)    Gi0/1(P)
30     Po30(SU)      LACP        Gi0/2(P)    Gi0/4(P)
```

A. int range g0/0-1 channel-group 15 mode active
B. int range g0/0-1 channel-group 15 mode desirable
C. int range g0/0-1 channel-group 15 mode passive
D. int range g0/0-1 channel-group 15 mode auto
E. int range g0/0-1 channel-group 15 mode on

Answer: A, C.

Explanation
PAgP- Disabled/Auto (Link formation) LACP- Active/Active or Active/Passive (Link formation)

Question 98:
A network technician is trying to configure a voice VLAN. What is the expected result when a Cisco phone is connected to the GigabitEthernet 5/1/4 port on a switch? (See picture!)

```
interface GigabitEthernet5/1/4
switchport voice vlan 75!
```

A. The phone and a workstation that is connected to the phone do not have VLAN connectivity.
B. The phone sends and receives data in VLAN 75, but a workstation connected to the phone sends and receives data in VLAN 1.
C. The phone sends and receives data in VLAN 75, but a workstation connected to the phone has no VLAN connectivity.

D. The phone and a workstation that is connected to the phone send and receive data in VLAN 75.

Answer: B.

Explanation
With the VLAN not referenced, VLAN1 (default local to default VLAN if not configured), and unmarked data passes from the PC's phone to the sample. The data may have been labeled, valued like cos, before having more affordability.

Question 99:
According to the output below, what action is expected from Switch2 when an unlabeled frame is received on GigabitEthernet0/1 interface?

```
Swicth2#show run int gig 0/1
interface GigabitEthernet0/1
        switchport Access vlan 22
        switchport trunk allowed vlan 1-20
        switchport trunk encapsulation dot1q
        switchport
        trunk native vlan 10
        switchport mode trunk
        speed 1000
        duplex full
```

A. The frame is processed in VLAN 1
B. The frame is processed in VLAN 22
C. The frame is processed in VLAN 10
D. The frame is dropped

Answer: C.

Explanation

Untagged and local VLAN work together, so VLAN 10. However, 'switchport mode trunk' and switchport access run VLAN 22.

Question 100:
What command is used to globally enable LLDP on a Cisco IOS ISR?

A. IIdp run
B. IIdp enable
C. IIdp transmit
D. cdp run
E. cdp enable

Answer: A.

Explanation
Link Layer Discovery Protocol (LLDP) is an industry standard protocol that allows devices to advertise and discover connected devices and the capabilities there. (Same as Cisco's CDP). To enable it on Cisco devices we must use this command in global configuration mode: sw(config)# lldp run.

Chapter 3: CCNA 200-301 Full Mock Test 2

Question 1:
What command should you enter to configure an LLDP latency of 10 seconds?

A. IIdp timer 10000
B. IIdp holdtime 10
C. IIdp reinit 10000
D. IIdp reinit 10

Answer: D.

Explanation

lldp holdtime seconds: Specify the amount of time a receiving device should hold the information from your device before discarding it lldp reinit delay: Specify the delay time in seconds for LLDP to initialize on an interface lldp timer rate: Set the sending frequency of LLDP updates in seconds

Question 2:
In a CDP environment, what happens when the CDP interface on the neighboring device is configured without an IP address?

A. CDP becomes inoperable on that neighbor
B. CDP uses the IP address of another interface for that neighbor
C. CDP operates normally, but it cannot provide IP address information for that neighbor
D. CDP operates normally, but it cannot provide any information for that neighbor

Answer: C.

Explanation
Although CDP is a Layer 2 protocol, we can check the neighbor IP address with the show cdp neighbor detail command. If the neighbor does not have an IP address, CDP still works fine. However, that neighbor's IP address is not provided.

Question 3:
Which mode will enable LACP only when an LACP device is detected?

A. Passive
B. Desirable
C. Ten
D. Auto

Answer: A.

Explanation
LACP is Link Aggregation Control Protocol. LACP is an open protocol published under 802.3ad. LACP modes are active, passive, or on. The party

configured as Passive will wait for the other party that needs to be Active for the Etherchannel to be established. PAgP is Port Aggregation Protocol. It is Cisco's proprietary protocol. Mode is On, Desired, or Automatic. Desirable Auto will set up an EtherChannel. enable passive LACP only when an LACP device is detected

Question 4:
Which VLAN ID is associated with the default VLAN in the given environment?

SW-1	SW-2
interface FastEthernet0/0 switchport mode acess switchport access vlan 10 interface FastEthernet0/1 switchport mode trunk switchport trunk allow vlan 10-30 switch port trunk native vlan 20	interface FastEthernet0/0 switchport mode acess switchport access vlan 10 interface FastEthernet0/1 switchport mode trunk switchport trunk allow vlan 10-30 switch port trunk native vlan 20

A. VLAN 1
B. VLAN 10
C. VLAN 20

D. VLAN 30

Answer: A.

Explanation
Cisco switches always have VLAN 1 as their default VLAN; This is essential for plans for moms like parents. You cannot change or even delete the default VLAN, it is mandatory. Local VLAN is VLAN that is not tagged in one frame, in another country, it is transmitted from local VLAN frames.

Question 5:
Which of the following VLAN ID represents a default VLAN? (Choose two.)

A. 0
B. 1
C. 1005
D. 1006
E. 4096

Answer: B, C.

Explanation
VLAN 1 is a system default VLAN, you can use this VLAN but cannot delete it. By default, VLAN 1 is used for each port on the switch. The standard VLAN is in the range 1002-1005 and is the Cisco default for FDDI and Token Ring. You cannot delete VLAN 1002-1005. Mostly we don't use VLAN in this range. Default Vlans 1 1002 1003 1004 1005

Question 6:
What information can Cisco Discovery Protocol convey about a Cisco device? (Choose two.)

A. the native VLAN
B. the trunking protocol
C. the VTP domain
D. the spanning-tree priority

E. the spanning-tree protocol

Answer: A, C.

Explanation
Information contained in Cisco Discovery Protocol advertisements varies depending on the device type and the installed version of the operating system. Some of the information Cisco Discovery Protocol can learn include: Cisco IOS version running on Cisco devices,Hardware platform of devices,IP addresses of interfaces on devices, Locally connected devices advertising Cisco Discovery Protocol Active interfaces on Cisco devices, including encapsulation type; hostname Duplex setting VLAN Trunking Protocol (VTP) domain Local VLAN

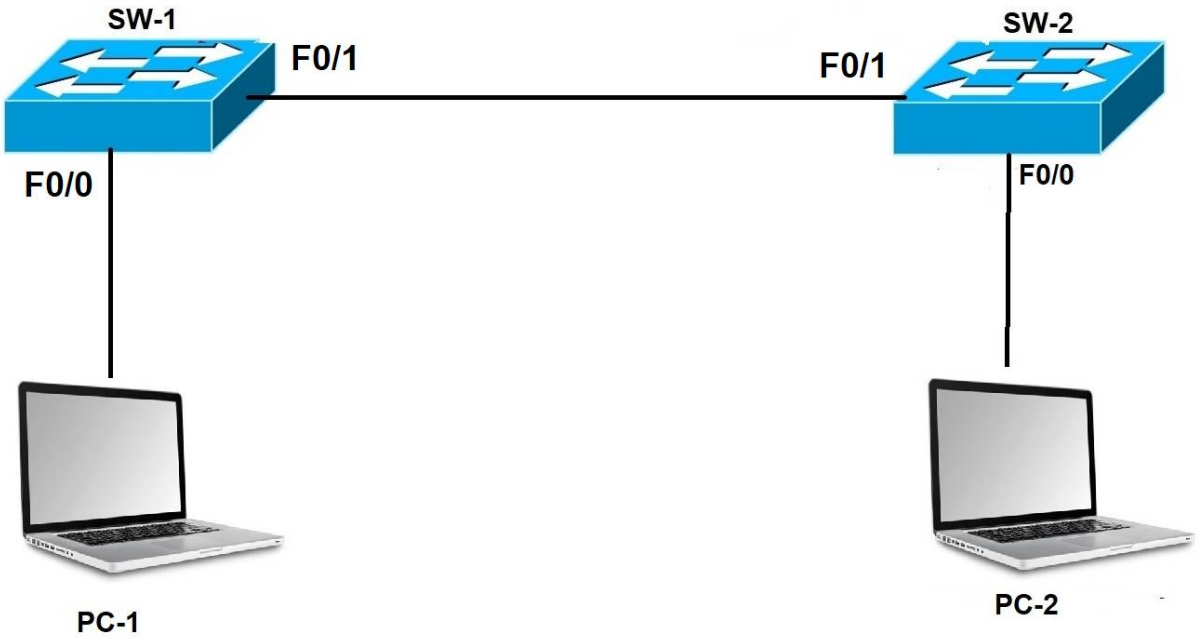
Question 7:
A network administrator is adding a new WLAN controller to my existing site. After deploying the new WLAN controller, what additional tasks should it consider? (Choose two.)

A. deploy load balancers
B. configure additional vlans
C. configure multiple VRRP groups
D. deploy POE switches
E. configure additional security policies

Answer: A, E.

Explanation
When a new WLAN controller is added to a network, some changes can be made to the existing system. One of them may be to arrange load balancers and to set up additional security police against security risks that may occur due to the new WLAN controller.

Question 8:
According to the configuration in the picture, how will the SW-2 handle the traffic from VLAN 20 in SW-1?



SW-1	SW-2
interface FastEthernet0/0 switchport mode acess switchport access vlan 10 interface FastEthernet0/1 switchport mode trunk switchport trunk allow vlan 10-30 switch port trunk native vlan 20	interface FastEthernet0/0 switchport mode acess switchport access vlan 10 interface FastEthernet0/1 switchport mode trunk switchport trunk allow vlan 10-30 switch port trunk native vlan 120

A. Sends traffic to VLAN 20.
B. Sends traffic to VLAN 120.
C. It reduces traffic.
D. Sends traffic to VLAN 1.

Answer: B.

Explanation
Local VLAN is VLAN20 since SW-1 is configured, so traffic from VLAN-20 is not tagged and goes directly to SW-2 Local VLAN: VLAN120 due to VLAN mismatch.

Question 9:
What command can you use to configure an actively negotiating EtherChannel? (Choose two.)

A. channel group 10 mode on
B. channel group 10 mode auto
C. channel group 10 mode passive
D. channel group 10 mode is desirable
E. channel group 10 mode active

Answer: D, E.

Explanation
Answer D is used to 'actively negotiate' for PAGP and answer E is used to 'actively negotiate' for LACP.

Question 10:
How does STP prevent routing loops in OSI Layer 2?

A. TTL
B. MAC address forwarding
C. Collision avoidance
D. Port blocking

Answer: D.

Explanation
The STP loop protection feature provides additional protection against Layer 2 routing loops (STP loops). If BPDUs are not received on an unassigned port and loop protection is enabled, that port is moved to the STP loop inconsistent blocking state instead of listening/learning/forwarding.

Question 11:
Which statements about VTP are true? (Choose two.)

A. All switches must be configured with the same VTP domain name
B. All switches must be configured to make trunk calls.
C. All keys must be configured with a unique VTP domain name
D. The VTP server must have the highest revision number in the domain
E. All switches must use the same VTP version (Correct)

Answer: A, E.

Explanation
There are some requirements for VTP to transmit VLAN information between switches. These: There are some requirements for VTP to transmit VLAN information between switches. These: - The VTP version must be the same on the switches that the user wants to configure - Switches must have the same VTP domain name - One of the keys must be server - Authentication must match if applied

Question 12:
What type would a port be when it gets the best BPDU on a bridge?

A. Designated port
B. Backup port
C. Alternate port
D. Root port

Answer: D.

Explanation
A port is assigned if it can send the best BPDU in a segment to which it is connected. Bridges connected to a particular segment listen for the BPDUs of other bridges and agree that the bridge should send the best BPDU as the designated bridge and port for that segment.

Question 13:
What value can you change to configure a particular interface as the preferred routing interface?

A. The interface number
B. The port priority
C. The VLAN priority
D. The hello time

Answer: B.

Explanation

This example shows how to increase the probability that the spanning tree instance on access port interface 2/0 will be selected as the root bridge by changing the port priority to 32:

Question 14:
What is Cisco Discovery Protocol?

A. It is a Cisco proprietary protocol.
B. It works at the network layer.
C. It can discover information from routers, firewalls, and switches.
D. It works at the physical layer and the data link layer.

Answer: A.

Explanation
CDP (Cisco Discovery Protocol), Cisco Discovery Protocol (Cisco Identification Protocol), Cisco users is a protocol that shows the environment directly connected to a device.

Question 15:
What is the reason for using CDP? (Choose two.)

A. to verify the cable type connecting the two devices
B. to determine the status of network services on a remote device
C. to get VLAN information from directly connected switches
D. To verify Layer 2 connection between two devices when Layer 3 fails
E. Obtaining the IP address of a connected device to telnet to the device
F. to determine the status of routing protocols between directly connected routers

Answer: D, E.

Explanation
CDP Discovery Protocol (Cisco Identification Protocol) is an upcoming protocol using Cisco that is directly connected to a device. CDP; Network server output such as Router, Switcher, Access Server, Access Server, Bridge is used. This protocol is a protocol used in the second layer (data port) in the OSI, Open Systems Interconnection (Open Systems

Interconnection), model. Thanks to these technologies, today's transportation facilities are shaped as locations. CDP is only visible in the system view used in the device, as well as the device name (interface) ports in the device name (interface) ports, open facility capacities and facility platforms.

Question 16:
What are the benefits of using VTP in a switching environment? (Choose two.)

A. Allows switches to read frame tags.
B. Allows automatic assignment of ports to VLANs.
C. Maintains VLAN consistency in a switched network.
D. Allows frames from multiple VLANs to use a single interface.
E. Allows VLAN information to be automatically propagated throughout the switching environment.

Answer: C, E.

Explanation
VTP protocol has 3 modes: Server, Client & Transparent. There is only 1 server and all other switches in this environment are Client. Only servers can create, modify and delete VLANs, so in a VTP environment VLANs are consistent across the network. Changes made to the server are automatically propagated to all clients via TRUNK connections established between switches.

Question 17:
What are the typical features of VLAN arrangements? (Choose three.)

A. A new switch does not have a VLAN configured.
B. Connection between VLANs requires a Layer 3 device.
C. VLANs typically reduce the number of collision domains.
D. Each VLAN uses a separate address space.
E. A switch maintains a separate bridging table for each VLAN.

Answer: B, D.

Explanation
We need to use a Layer 3 device like a router or a Layer 3 switch to communicate between two different VLANs -> B is correct. VLANs do not affect the number of collision domains, they are the same -> C is not correct. Typically, VLANs increase the number of broadcast domains. We must use a different network (or subnet) for each VLAN. For example we can use 192.168.1.0/24 for VLAN 1 and 192.168.2.0/24 for VLAN 2 -> D is correct. A switch maintains a separate bridging table for each VLAN so that it can only send frames to ports on the same VLAN. For example, if a PC in VLAN 2 sends a frame, the switch looks at the bridging table and sends frames only from ports belonging to VLAN 2 (which also sends this frame to the circuit ports) -> E is true.

Question 18:
In a network, computers in the same VLAN can communicate with each other, but not with hosts in different VLANs. What should the network administrator do to allow communication between VLANs?

A. a router with subinterfaces configured on the physical interface connected to the switch
B. A router with an IP address on the physical interface connected to the switch
C. a switch with a configured access link between switches
D. A switch with a trunk connection configured between switches

Answer: A.

Explanation
Different VLANs cannot communicate with each other, they can communicate with the help of a Layer3 router. Therefore, it is necessary to connect a router to a switch, then make the sub-interface on the router to connect to the switch, establish Trunking connections to enable communication of devices belonging to different VLANs.

Question 19:
Which statement about LLDP is true?

A. It is a Cisco proprietary protocol.

B. It is configured in global configuration mode.
C. The LLDP update frequency is a fixed value.
D. It runs over the transport layer.

Answer: B.

Explanation
LLDP is for support with non-Cisco devices, runs on the data link layer, and lldp timer has a configurable range from 5 to 65534 sec, commands configured only from conf t

Question 20:
What does the Wireless LAN Controller do?

A. register a single access point that controls traffic between wired and wireless endpoints
B. use SSIDs to distinguish between wireless clients
C. send LWAPP packets to access points (Corred)
D. monitor activity on wireless and wired LANs

Answer: C.

Explanation
Lightweight APs (LAPs) are devices that do not require initial configuration. LAPs use Lightweight Access Point Protocol (LWAPP) to communicate with a WLAN controller (WLC) as shown in the figure below. Controller-based APs are useful when a large number of APs are required on the network. As more APs are added, each AP is automatically configured and managed by WLC.

Question 21:
Which technology is used to improve web traffic performance through proxy caching?

A. WSA
B. Firepower
C. ASA
D. FireVIEW

Answer: A.

Explanation
Web proxy: Caching should be enabled in the web proxy configuration to conserve bandwidth and improve performance. This becomes less important as the percentage of HTTPS traffic increases, as WSA does not cache HTTPS transactions by default. If the proxy is deployed to serve open clients only, the forwarding mode must be specified to specifically reject traffic not intended for the proxy service. This reduces the attack surface on the device and follows a good security principle: Turn it off if you don't need it.

Question 22:
Which criterion is used first in the root port selection process?

A. local port ID
B. Lowest road cost to Toot bridge
C. Bridge ID of the lowest neighbor
D. port ID of lowest neighbor

Answer: B.

Explanation
A question was asked for the first step in the selection of the foundation bridge. STP Root Port Selection The lowest bridge ID (Priority:MAC Address) key becomes Root Bridge. Each non-root bridge must have ONE root port (RP), the port with the lowest path cost to the Root Bridge. All ports on Root Bridge become Designated Ports (DP) Each segment must have a Designated Port (DP)

Question 23:
A network technician wants to configure VLANs. Which of the following statements about VLAN configuration is correct?

```
Swicth2#show spanning-tree vlan 11

VLAN0011
Spanning tree enabled protocol rstp
Root ID Priority          28772
        Address           00ae.16c8.a100
        Cost              2
        Port              1 (FastEthernet 8/1)
        Hello Time        2 sec
        Max Age           30 sec
        Forward Delay     20 sec

[Output suppressed]
```

A. Before you can configure a VLAN, the switch must be on the VTP server or ¡n transparent mode
B. The switch must be in config-vlan mode before configuring an extended VLAN.
C. Dynamic inter-VLAN routing supported from VLAN2 to VLAN 4064
D. A switch in VIP transparent mode saves VLAN databases to running configuration only

Answer: A.

Explanation
Switch to transparent mode and try from global config again. step 1 configure terminal Enter global configuration mode.x step 2 vtp mode transparent Configure the switch for VTP transparent mode, disabling VTP. Note This step is not required for VTP version 3. step 3 vlan vlan-id Enter an extended-range VLAN ID and enter VLAN configuration mode. The range is 1006 to 4094.

Question 24:
Based on the output in the picture, what two conclusions should be drawn about this configuration? (Choose two.)

A. The root port is FastEthernet 8/1
B. The designated port is FastEthernet 8/1
C. The spanning-tree mode ¡s PVST+
D. This is a root bridge
E. The spanning-tree mode is Rapid PVST+

Answer: A, E.

Explanation
1. Spanning tree enabled protocol rstp(mod is Rapid PVST+)
2. Port 1(FastEthernet 8/1) = root port is FastEthernet 8/1

Question 25:
A network technician must create a diagram of a network with network devices from different companies. Which command must be configured on Cisco devices so that the topology of the network can be mapped?

A. Device(config)#lldp run
B. Device(config)#cdp run
C. Device(config-if)#cdp enable
D. Device(config)#flow-sampler-map topology

Answer: A.

Explanation
Device(config)#lldp run

Question 26:
How do AAA operations compare in terms of user identity, user services, and access control?

A. Authorization provides access control, and authentication tracks user services
B. Authentication identifies users, and accounting tracks user services

C. Accounting tracks user services, and authentication provides access control
D. Authorization identifies users, and authentication provides access control

Answer: B.

Explanation
Authentication identifies users, and accounting tracks user services Authentication, Identify Users Authorization, access control Accounting, track user services

Question 27:
What is the main difference between RADIUS and TACACS+ systems?

A. RADIUS logs all commands entered by the administrator, but TACACS+ logs only start, stop, and intermediate commands.
B. TACACS+ separates authentication and authorization, and RADIUS combines them.
C. TACACS+ encrypts password information only and RADIUS encrypts the entire payload.
D. RADIUS is best suited for dial-up authentication, but TACACS+ can be used for multiple authentication types.

Answer: B.

Explanation
"RADIUS combines authentication and authorization. Access acceptance packets sent to the client by the RADIUS server contain authorization information. This makes it difficult to separate authentication and authorization. TACACS+ uses AAA architecture that distinguishes AAA. This allows for separate authentication solutions that can still use TACACS+ for authorization and accounting. For example, with TACACS+ it is possible to use Kerberos authentication and TACACS+ authorization and accounting."

Question 28:

What is the difference between Local AP mode and FlexConnect AP mode used in wireless networks?

A. Local AP mode creates two CAPWAP tunnels per AP for WLC Top Rated
B. Local AP mode causes the AP to act as an autonomous AP
C. FlexConnect AP mode will not work if AP loses connection with WLC
D. FlexConnect AP mode bridges traffic from AP to WLC when local switching is configured

Answer: D.

Explanation
In local mode, one AP creates two CAPWAP tunnels to the WLC. One for management, the other for data traffic. This behavior is known as "centrally switched" because data traffic is switched (bridged) from the app to the controller, where it is then routed by a routing device.

Question 29:
A network technician sees the interface g0/1 down/down on the local Switch. What are the two reasons for the interface condition? (Choose two.)

A. There is a protocol mismatch
B. There is a duplex mismatch
C. The interface is shut down
D. The interface is error-disabled
E. There is a speed mismatch

Answer: D, E.

Explanation
Depending on the age/version of the router, the E option may be down/down or int up, protocol off. If the "neighborhood" interface admin is not working then that interface [in question] is down/closed.

Question 30:

How can Link Aggregation be implemented on a Cisco Wireless LAN Controller?

A. EtherChannel must be configured in €mode active€.
B. When enabled, WLC bandwidth drops to 500 Mbps.
C. Two or more ports must be configured to pass client traffic.
D. A functional physical port is required to pass client traffic.

Answer: D.

Explanation
Link aggregation (LAG) is a partial implementation of the 802.3ad port aggregation standard. It consolidates all distribution system ports of the controller into a single 802.3ad port channel, reducing the number of IP addresses required to configure ports on your controller. When LAG is enabled, the system dynamically manages port redundancy and transparently balances access points for the user. LAG simplifies controller configuration as you no longer need to configure the primary and secondary ports for each interface. If any of the controller ports fail, the traffic is automatically moved to one of the other ports. As long as at least one controller port is working, the system will continue to run, access points will remain connected to the network, and wireless clients will continue to send and receive data.

Question 31:
What conditions must be met for an SSH connection to work normally on a Cisco IOS switch? (Choose two.)

```
Router-1# conf t
Enter configuration commands, on eper line. End with CNTL/Z
Router-1(config)# aaa new-model
Router-1(config)# aaa authentication login default login
Router-1(config)#line vty 0 5
Router-1(config-line)# login authentication default
Router-1(config-line)#exit
Router-1(config)# username ciscoadmin password admin1234567899
Router-1(config)#username ciscoadmin privilege 15
Router-1(config)# enable password Passw0rd123
Router-1(config)#enable secret testing123456
Router-1(config)# end
```

A. IP routing must be enabled on the switch.
B. A console password must be configured on the switch.
C. Telnet must be disabled on the switch.
D. The switch must be running a k9 (crypto) lOS image.
E. The ip domain-name command must be configured on the switch.

Answer: D, E.

Explanation
To use SSH on Cisco Router 01. The IOS image must be a k9(Crypto) image 02. Configure DNS domain for router (ex: ip domain-name R1.Contoso.lk)

Question 32:
See the picture below. What password should a network technician use to enter activation mode?

A. admin1234567899
B. Passw0rd123
C. default
D. testing123456

Answer: D.

Explanation
If the enable password command or the enable secret command is not configured and there is a line password configured for the console, the console line password will act as the enable password for all VTY sessions -> enable secret will be used first, then enable password and line password.

Question 33:
If the enable password command or the enable secret command is not configured and there is a line password configured for the console, the console line password will act as the enable password for all VTY sessions -> enable secret will be used first, then enable password and line password. What state does the switch port go into when PortFast is enabled?

A. blocking
B. listening
C. learning
D. forwarding

Answer: D.

Explanation
When the PortFast feature is enabled on a switch or a trunk port, the port immediately switches to STP forwarding. Even though PortFast is enabled, the port still participates in STP. If the port becomes part of the topology that could create a loop, the port will eventually go into STP blocking mode.

Question 34:
Which protocol asks the Wireless LAN Controller to generate its own local web management SSL certificate for GUI access?

A. RADIUS
B. HTTPS
C. TACACS+
D. HTTP

Answer: B.

Explanation
You can protect communication with the GUI by enabling HTTPS. HTTPS protects HTTP browser sessions using the Secure Sockets Layer (SSL) protocol. When you enable HTTPS, the controller creates its own local web management SSL certificate and automatically applies it to the GUI. You also have the option to download an externally generated certificate.

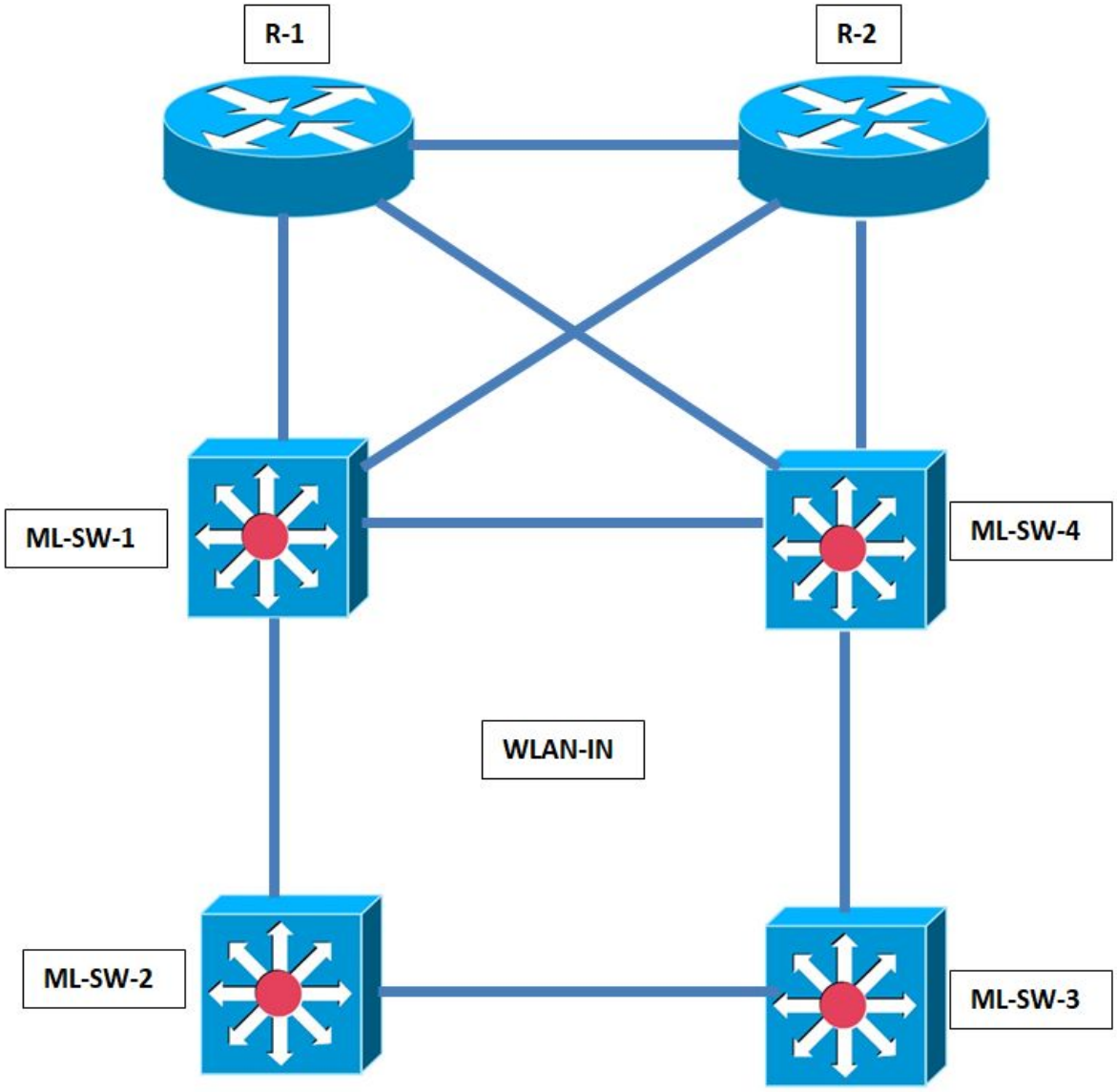
Question 35:
A network technician needs to configure cross-switch VLAN communication between a Cisco switch and a third-party switch. What action does the network technician need to take?

A. configure DSCP
B. configure IEEE 802.1q
C. configure ISL
D. configure IEEE 802.1p

Answer: B.

Explanation
The VLAN channel offers two options, ISL and 802.1Q. ISL is owned by Cisco, while 802.1Q is standards-based and supported by multiple vendors.

Question 36:
A network technician needs a switch interface to actively work to establish a circuit connection with a neighboring switch. Which command should be configured?



A. switchport mode trunk
B. switchport mode dynamic is desirable
C. No switchport deal
D. switchport mode dynamic auto

Answer: B.

Explanation
Command: dynamic switching mode is requested, which prompts the switch to initiate both the handshake and the negotiation process instead of

waiting on another device.

Question 37:
According to the network design in the picture, after the selection process, what is the base bridge in WLAN-IN? ML-SW-1: 0D:A0:41:82:35:59 ML-SW-2: 0D:0A:17:22:1B:62 ML-SW-3: 0D:0A:17:1D:3D:7A ML-SW-4: 0D:A0:21:A2:4D:17

A. ML-SW-1
B. ML-SW-2
C. ML-SW-3
D. ML-SW-4

Answer: C.

Explanation
The root bridge is the switch with the lowest MAC address. The answer is C: 22hex= 2*16^1+2*16^0=32+2=32 while
1D=1*16^1+13*16^0=16+13=29

Question 38:
An engineer must establish a circuit connection between the two switches. Neighbor switch is set to trunk or desired mode. What action should be taken?

A. configure switchport nonegotiate
B. configure switchport mode access
C. configure switchport mode dynamic auto
D. configure switchport trunk dynamic desirable

Answer: C.

Explanation
It says "neighbor switch is set to mainline or mode" he said "auto", that would be the wrong answer auto + auto = access. Since it's "trunk or desirable", auto + trunk = trunk and auto + tool = trunk.

Question 39:

How does the dynamic-learned MAC address feature function work?

A. The CAM table is empty until ingress traffic is received on each port.
B. The switches dynamically learn the MAC addresses of each connected CAM table.
C. Ports are restricted and learn up to a maximum of 10 dynamically learned addresses
D. Requires a minimum number of secure MAC addresses to be populated dynamically

Answer: A.

Explanation
A Content Addressable Memory (CAM) table is a system memory structure used by Ethernet switch logic that stores information such as MAC addresses located on physical ports.

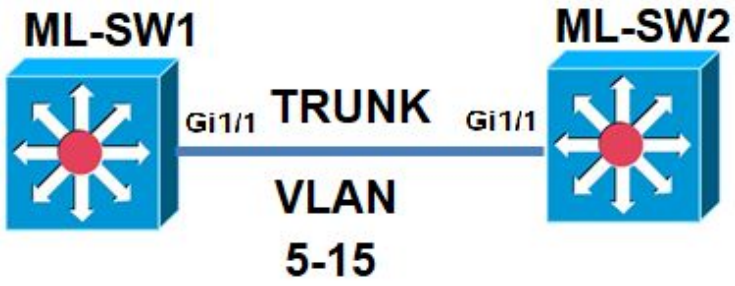
Question 40:
When using Rapid PVST+, which command ensures that the switch is always the root bridge for VLAN 10?

A. spanning tree vlan 10 priority 614440
B. spanning tree vlan 10 priority 0
C. spanning tree vlan 10 primary root
D. spanning tree vlan 10 priority 38813258

Answer: B.

Explanation
S1(config)# spanning tree vlan 1 root sky 'Primary' keywords automatically change priority to 24576 or final plans 4096 from the most general priority plan detected in the network." Choosing a new base system will be SW1's first priority.

Question 41:
According to the network diagram in the picture, if Gi1/1 on ML-SW2 is configured in demand or trunk mode, what command needs to be executed so that Gi1/1 on ML-SW1 is passively a loop port?

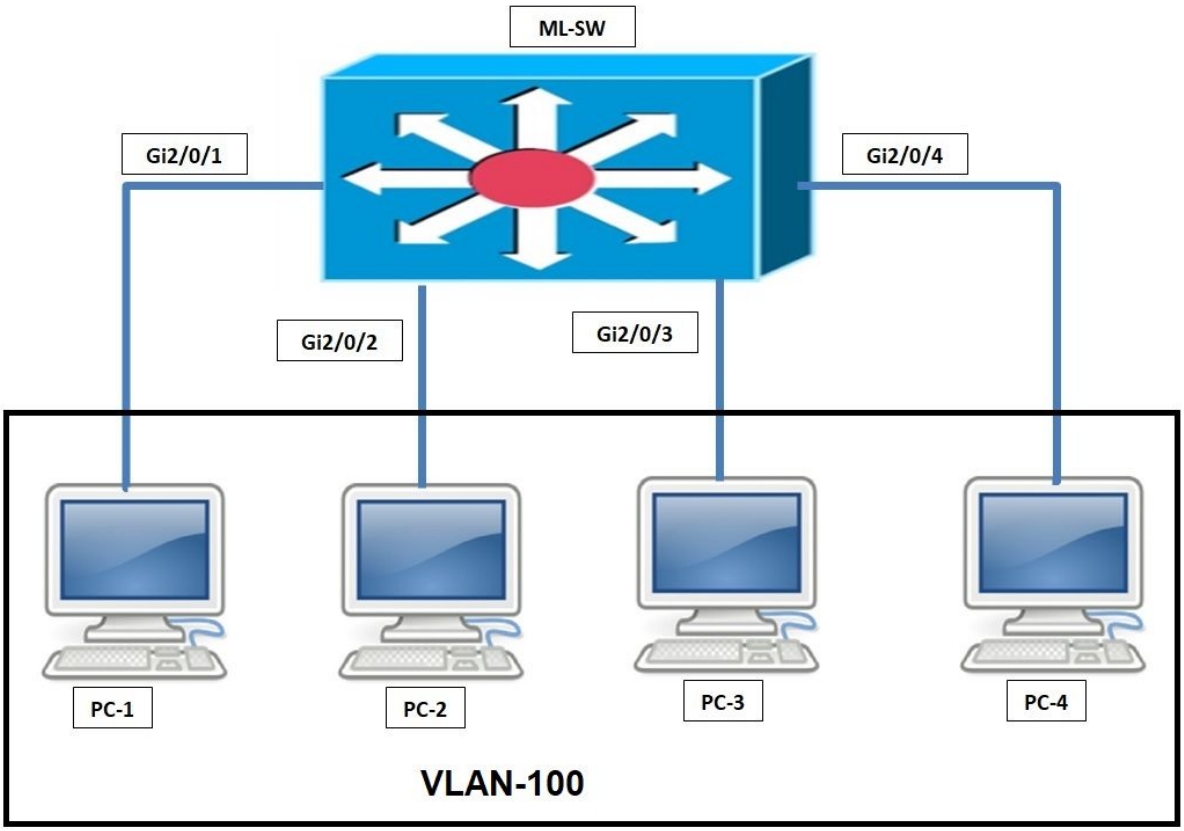


A. switchport mode dynamic auto
B. switchport mode point1 tunnel
C. switchport mode dynamic is desirable
D. switchport mode trunk

Answer: A.

Explanation
ML-SW1 dynamic auto –ML- SW2 dynamic auto -> access ML-SW1 dynamic auto – ML-SW2 dynamic desired -> main line

Question 42:
According to the network structure in the picture, the entire content or MAC address table is shown. PC-4 sends a data frame to PC-1. What does the switch do when retrieving the frame from PC-4?




```
ML-SW # show mac-address-table
Mac Address Table
------------------------------------------
VLAN    MAC Address     Type        Ports
100     11ac.7845.aa01  DYNAMIC     Gi2/0/1
100     ac45.0051.bd09  DYNAMIC     Gi2/0/2
100     01a0.3475.ab36  DYNAMIC     Gi2/0/3

ML-SW#
```

A. Match the Layer 2 MAC address with the Layer 3 Ip address and forward the frame.
B. Add the source MAC address and port to the routing table and forward the frame to pc-1.
C. Do a lookup in the MAC address table and discard the frame due to a missing entry.
D. Unload the frame from all ports except the port to which PC-1 is connected.

Answer: B.

Explanation
There is no PC-4's MAC address or port number in the MAC table yet, so ML-SW forwards the frame to all ports using ARP.

Question 43:
A network technician needs to add an old switch back to the network, rather than a failed switch. Should action be taken to prevent the switch from corrupting the VLAN database?

A. Add the key in the VTP domain with a lower revision number.
B. Add the key in the VTP domain with a higher revision number.
C. Set key DTP dynamically to desired.
D. Add the key with DTP set to requested.

Answer: A.

Explanation
Before adding a VTP client key to a VTP domain, always verify that the VTP configuration revision number is lower than the configuration revision number of other switches in the VTP domain. Switches in a VTP domain always use the VLAN configuration of the switch with the highest VTP configuration revision number.

Question 44:
Which one of the following technologies prevents client devices from arbitrarily connecting to the network without state correction?

A. 802.11n
B. 802.1x
C. MAC Authentication Bypass
D. IP Source Guard

Answer: B.

Explanation

IEEE 802.1X is an IEEE Standard for port-based Network Access Control (PNAC). It is part of the IEEE 802.1 group of network protocols. It provides an authentication mechanism to devices that want to connect to a LAN or WLAN.

Question 45:
What protocol does an access point use to draw power from the switch it is connected to?

A. Internet Group Management Protocol
B. Cisco Discovery Protocol
C. Adaptive Wireless Path Protocol
D. Neighbor Discovery Protocol

Answer: B.

Explanation
PoE switches support Cisco pre-standard PD detection mechanisms and all compatible PDs based on Standards. Most Cisco, pre-standard or standard PDs support Cisco Discovery Protocol (CDP). When power is applied to a port with a pre-standard or standard Cisco PD, CDP is used to determine the actual power requirement and the system power budget is adjusted accordingly.

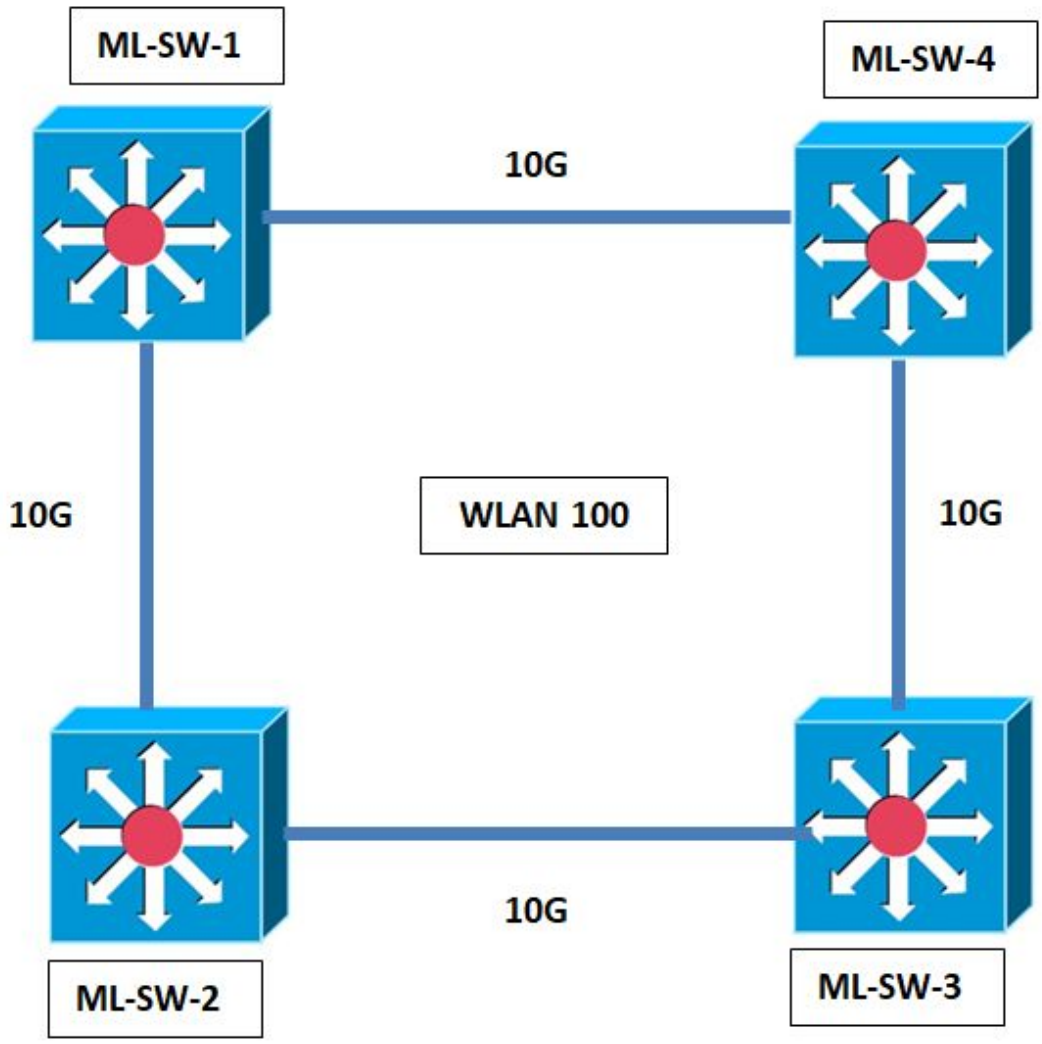
Question 46:
A network technician wants to protect WLC from receiving fake association requests. What steps should be taken to configure WLC to throttle requests and force the user to wait 20ms to retry an association request?

A. Enable MAC filtering and set the SA Query timeout to 20.
B. Enable 802.1x Layer 2 security and set the Comeback timer to 20.
C. Enable Security Association Teardown Protection and set the SA Query timeout to 20.
D. Enable the Protected Management Frame service and set the Comeback timer to 20.

Answer: C.

Explanation
Configure the GUI; Step 1. You need to enable the protected management framework under the SSID configured with 802.1x/PSK. Step 2. Then you need to specify the Fallback timer and the SA query timeout. The fallback timer specifies the amount of time an associated client must wait before the association can be retried the first time it is rejected with a status code 30. SA query timeout specifies the amount of time WLC waits for a response from the client for query processing. If there is no response from the client, its association is deleted from the controller.

Question 47:
According to the network diagram in the picture, only four switches are involved in the tree operation spanning VLAN 100. ML-SW-1: priority 514450 ML-SW-2: priority 25391160 ML-SW-3: priority 0 ML-SW-4: root primary Which switch becomes the permanent root bridge for VLAN 100?



A. ML-SW-1
B. ML-SW-2
C. ML-SW-3
D. ML-SW-4

Answer: C.

Explanation
For the root bridge, the owner with the lowest MAC address among the ML-SWs is selected. However, priority is given to the question. Having root most downloaded from these people, ML-SW will work as a bridge. So the correct answer is C.

Question 48:
What command should be used to configure traffic for a VLAN not tagged by the switch when crossing a trunk link?

A. switchport trunk encapsulation dot1q
B. switchport trunk allowed vlan 10
C. switchport mode trunk
D. switchport trunk native vlan 10

Answer: D.

Explanation
The switchport trunk local vlan command specifies the local (untagged) VLAN for a Layer 2 interface operating in trunk mode on a Cisco IOS device. This command is valid only for interfaces operating in trunk mode.

Question 49:
What is the benefit of using the PortFast feature? (Choose two.)

A. Enabled interfaces are automatically placed in listening state.
B. Enabled interfaces wait 50 seconds before they move to the forwarding state.
C. Enabled interfaces never generate topology change notifications.
D. Enabled interfaces come up and move to the forwarding state immediately.
E. Enabled interfaces that move to the learning state generate switch topology change notifications.

Answer: C, D.

Explanation
Incoming portfast enabled interfaces will immediately switch to forwarding mode, bypassing interface listening and learning status. A switch will never generate a topology change notification for a portfast enabled interface.

Question 50:
Why configure PortFast in an interface?

A. The frames entering the interface are marked with the higher priority and then processed faster by a switch.
B. After the cable is connected, the interface is available faster to send and receive user data.
C. Real-time voice and video frames entering the interface are processed faster.
D. After the cable is connected, the interface uses the fastest speed setting available for that cable type.

Answer: B.

Explanation
Portfast bypasses the listen and learn states, causing a switch or trunk port to immediately enter the spanning tree forward state.

Question 51:
Why does a switch move a frame to all ports?
A. The frame has zero destination MAC addresses.
B. The destination MAC address of the frame is unknown.
C. The source MAC address of the frame is unknown
D. The source and destination MAC addresses of the frame are the same.

Answer: B.

Explanation
The switch needs to know the destination MAC address to send on one port, otherwise it will send on all ports

Question 52:
A network technician configures the Gi1/5 interface on a corporate PE router to connect to an ISP. Neighbor discovery is disabled. If the ISP is using third-party network devices, what action is required to complete the configuration?

```
interface Gi1/5
        description ML_SW_01
        duplex full
        speed 100
        negotiation auto
        lldp transmit
        lldp receive
```

A. Disable autonegotiation.
B. Enable LLDP globally.
C. Enable LLDP-MED on the ISP device.
D. Disable Cisco Discovery Protocol on the interface.

Answer: B.

Explanation
LLDP-MED is used only between network devices (like switches) and endpoint devices (like phones). LLDP is used for network-to-network connections.

Question 53:
What is the mode in an AP that uses a central controller for management, roaming and SSID configuration?

A. lightweight mode
B. autonomous mode
C. bridge mode
D. repeater mode

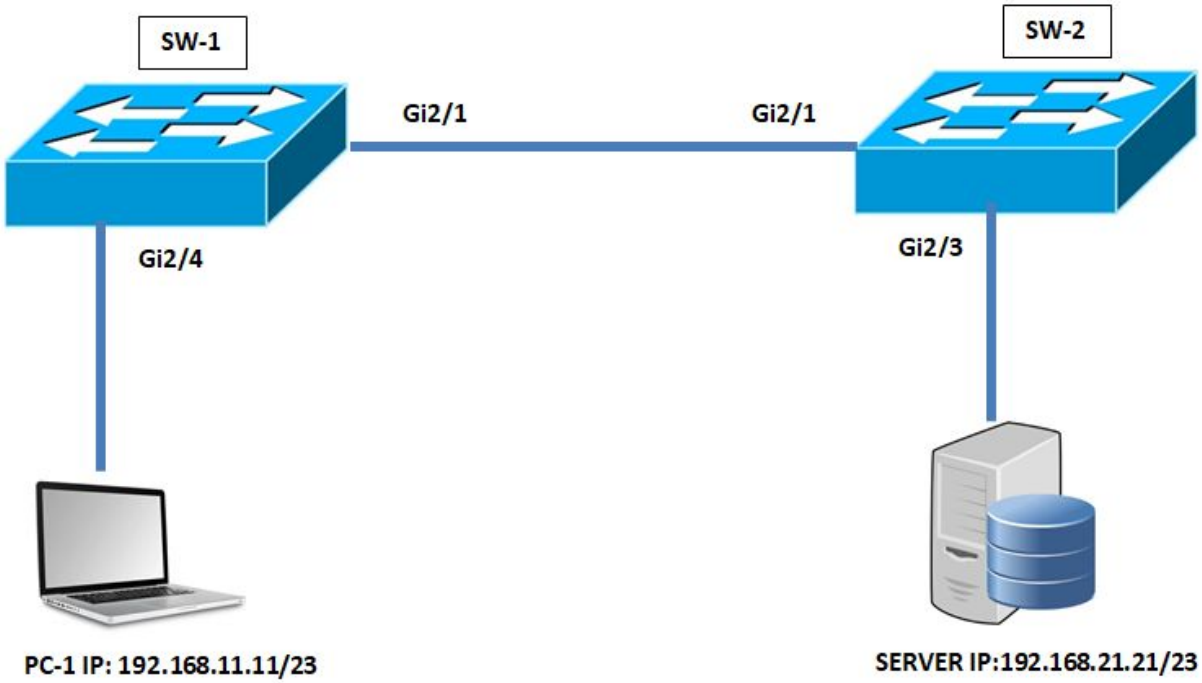
Answer: A.

Explanation

Lightweight (LWAPP) Mode: Centrally managed by a Wireless LAN Controller or WLC. WLC can be a physical device for large networks or it can be a virtual machine. Sometimes it's embedded in the ISR router or a switch like the Cat3850. Cisco calls it "Unified Access."

Question 54:

According to the network topology in the picture, it should configure the communication between PC-1 and Server. Which command should be configured to avoid interruption of other communications?



SW-1	SW-2
Vlan 4,5,6,7 interface GigabitEthernet2/1 switchport mode trunk switchport mode trunk allowed vlan 4-6 ! interface GigabitEthernet2/4 switchport access vlan 7 switchport mode acess	Vlan 4,5,6,7 interface GigabitEthernet2/1 switchport mode trunk ! interface GigabitEthernet2/3 switchport access vlan 7 switchport mode acess

A. switchport truck allowed vlan 6
B. switchport truck allowed vlan none

C. switchport truck allowed vlan add 7
D. switchport truck allowed vlan remove 4-5

Answer: C.

Explanation
The switchport trunk allowed vlan command is used to specify the list of VLANs allowed on a trunk port. The Layer 2 interface on a Cisco IOS device, when configured to operate in trunk mode, is the default for the interface to carry all VLANs defined on the switch.

Question 55:
According to the output in the picture, what will be the result if the Gig5/5 receives an STP BPDU?

```
SW-1(config)#interface GigabitEthernet 5/5

SW-1(config-if)# switchport mode Access

SW-1(config-if)#spanning-tree portfast

SW-1(config-1)#spanning-tree bpduguard enable
```

A. The port switches to STP blocking.
B. The port immediately switches to STP forwarding.
C. The port goes into an error disabled state.
D. Port switches to root port.

Answer: C.

Explanation
When stp is enabled on the switch, it will take its own bpdu and put the port in a blocking state. Now in interfaces, you have the ability to keep it alive. This feature will send a frame, we call it loop frame and the switch will take its own loop frame and put the interface as err-disable.

Question 56:
Which access layer threat mitigation technique provides identity-based security from wired or wireless network technologies?

A. Dynamic ARP Inspection
B. DHCP snooping
C. 802.1x
D. using a non-default native VLAN

Answer: C.

Explanation
802.1x is a standard for link transport system access and is part of the 802.1 protocol. Authentication is accepted for devices that want to join a training or wireless network.

Question 57:
According to the output in the picture, the Router is running three different routing protocols. Which route feature is used by the router to forward the packet it receives for the destination IP 172.26.42.1?

```
Router001# Show ip route
....
D       172.26.42.0/27      [90/2588545174] via 12.1.1.1
O       172.26.42.0/19      [110/292094] via 12.1.1.11
R       172.16.32.0/24      [120/2] via 12.1.1.4
```

A. longest prefix
B. administrative distance
C. cost
D. metric

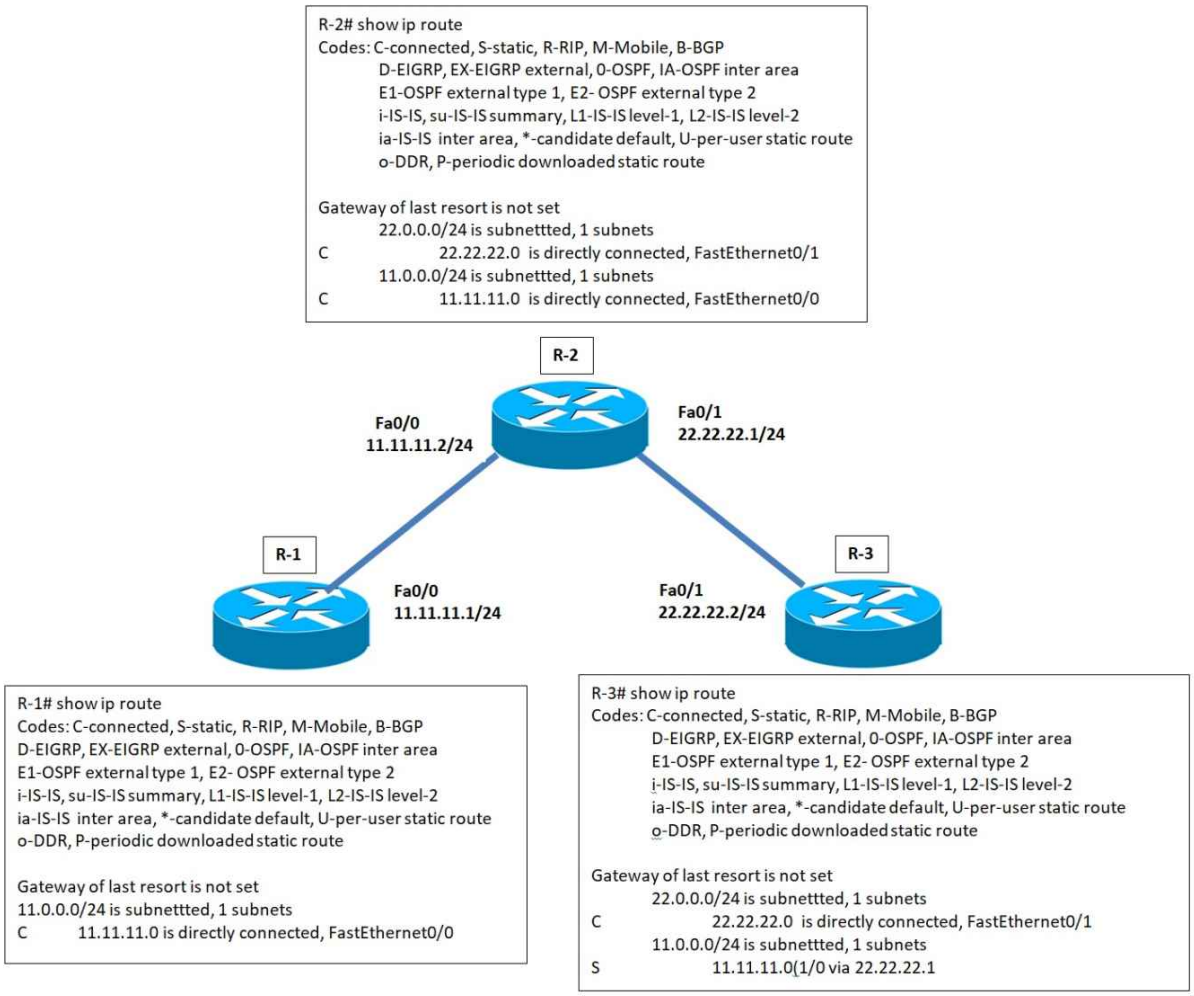
Answer: A.

Explanation

As I understand it, when you have multiple routes to reach a destination, the first criterion for selection is which one has the longest prefix. If one of the routes has a longer prefix than the others, that is the only criterion taken into account and that route is selected. If the routes had the same prefix length, then administrative distance would come into play. But since one of the routes has a longer prefix, it didn't land in AD. Router Preference *Longest Prefix *NAME *Metric

Question 58:

According to the network configuration in the picture, the R1 Fa0/0 router cannot ping the R3 Fa0/1 router. What action should be taken on the R1 router to help solve the configuration issue?



A. set the default gateway to 22.22.22.2

B. Configure a static route with FaO/1 as the output interface to reach the 22.22.2.0/24 network
C. Configure a static route with 11.11.11.2 as the next hop to reach the 22.22.22.0/24 network
D. set default network to 22.22.22.0/24

Answer: C.

Explanation
Configure a static route with 11.11.11.2 as the next hop to reach the 22.22.22.0/24 network

Question 59:
How does EIGRP determine a route's metric for its routing table?

A. It uses the bandwidth and delay values of the path to calculate the route metric.
B. It uses a default metric of 10 for all routes that are learned by the router.
C. It counts the number of hops between the receiving and destination routers and uses that value as the metric.
D. It uses a reference bandwidth and the actual bandwidth of the connected link to calculate the route metric.

Answer: A.

Explanation
"EIGRP uses the minimum bandwidth on the path to a destination network and the total delay to calculate routing metrics"

Question 60:
Router R1 should send all traffic to 192.160.1.1 without a matching routing table entry. Which configuration performs this task?

A. R1#config t R1(config)#ip routing R1(conflg)#ip route default-route 192.160.1.1
B. R1#config t R1(config)#ip routing R1(conflg)#ip route 192.160.1.1 0.0.0.0 0.0.0.0

C. R1#config t R1(config)#ip routing R1(conflg)#ip route 0.0.0.0 0.0.0.0 192.160.1.1
D. R1#config t R1(config)#ip routing R1(conflg)#ip default-gateway 192.160.1.1

Answer: C.

Explanation
"IP Gateway" is usually used on switches without L3 switches/routers or "hosts" with IP Route 0.0.0.0" with L3.

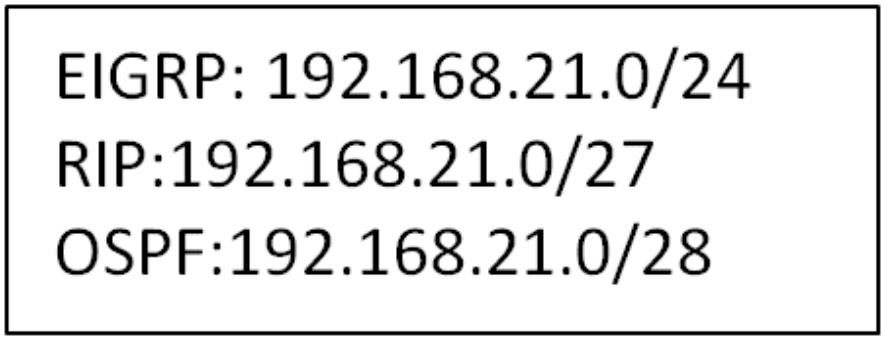
Question 61:
A package is targeted for 11.11.1.25. Which static route does the router choose to forward the packet?

A. ip path 11.11.1.0 255.255.255.240 11.11.255.1
B. ip route 11.11.1.20 255.255.255.252 11.11.255.1
C. ip path 11.11.1.16 255.255.255.252 11.11.255.1
D. ip path 11.11.1.20 255.255.255.254 11.11.255.1

Answer: B.

Explanation
The targeted ip address is 11.11.1.22 B- range 11.11.1.20 to 11.11.1.23 --> correct range If there are more than 1 correct range, the correct answer will be the range with the longer prefix.

Question 62:
How does the router in the picture handle 192.168.21.16 traffic?



A. It chooses the EIGRP route because it has the lowest administrative distance.
B. It load-balances traffic between all three routes.
C. It chooses the OSPF route because it has the longest prefix inclusive of the destination address.
D. It selects the RIP route because it has the longest prefix inclusive of the destination address.

Answer: D.

Explanation
EIGRP: 192.168.21.0 /24 = 256 IP addresses RIP: 192.168.21.0 /27 = 32 addresses 128 64 32 16 8 4 2 1 1 1 1 0 0 0 0 0 Increment of 32 Range: 192.168.21.0 - 192.168.21.31 OSPF: 192.168.21.0 /28 = 16 addresses 128 64 32 16 8 4 2 1 1 1 1 1 0 0 0 0 Increment of 16 Range: 192.168.21.0 - 192.168.21.15

Question 63:
A network administrator needs to configure a floating static route. What could be the reason for this? (Choose two.)

A. to enable fallback static routing when the dynamic routing protocol fails
B. to route traffic differently based on the source IP of the packet
C. to automatically route traffic on a secondary path when the primary path goes down
D. to support load balancing via static routing
E. to control the return path of traffic that is sent from the router

Answer: A, C.

Explanation
Floating static routes are static routes with a management distance greater than the administrative distance of dynamic routes. Administrative distances can be configured on a static route, so a static route is less desirable than a dynamic route. This way, a static route is not used when a dynamic route is present. However, if the dynamic route is lost, the static

route may take over and traffic may be sent over this alternative route. If this alternative path is provided using a DDR interface, this interface can be used as a backup mechanism.

Question 64:
According to the configuration output in the picture, how does Router Router10 manage 192.168.22.16 traffic?

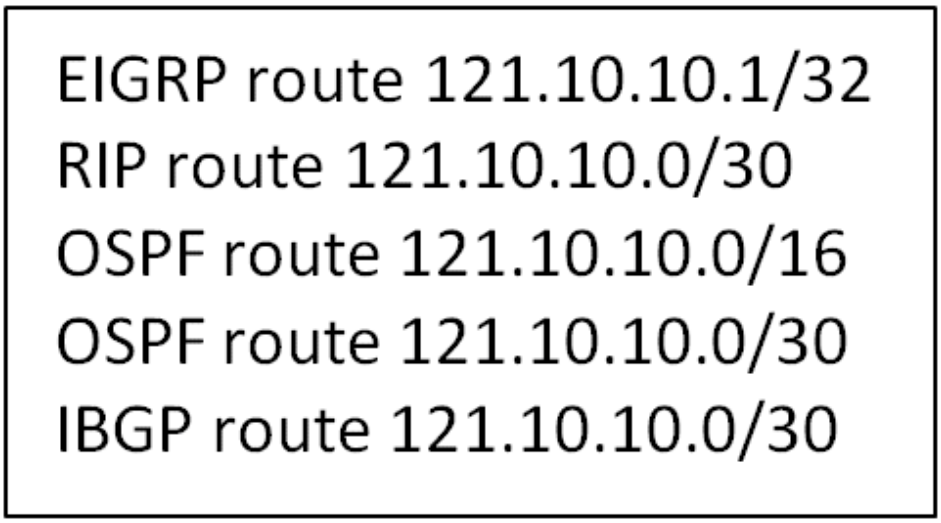
```
Router10# show ip route
....
D       192.168.22.0/24      [90/2588545174] via 192.168.1.1
O       192.168.22.0/23      [110/292094] via 192.168.1.3
R       192.168.22.0/27      [120/2] via 192.168.1.2
iL1     192.168.22.0/13      [115/30] via 192.168.1.4
```

A. It selects the IS-IS route because it has the shortest prefix inclusive of the destination address
B. It selects the RIP route because it has the longest prefix inclusive of the destination address
C. It selects the OSPF route because it has the lowest cost
D. It selects the EIGRP route because it has the lowest administrative distance

Answer: B.

Explanation
In order to direct the traffic; 1. Longest Prefix 2. Administrative distance 3. Metric parameters are checked.

Question 65:
According to the table in the picture, a router took these five routes from different routing information sources. Which two routes does the router use to its routing table? (Choose two.)



A. OSPF path 121.10.10.0/30
B. IBGP route 121.10.10.0/30
C. OSPF path 121.10.10.0/16
D. EIGRP route 121.10.10.1/32
E. RIP route 121.10.10.0/30

Answer: A, D.

Explanation
The shortest route will be selected. In this case EIGRP and OSPF have the shortest route

Question 66:
A router in a network has learned the 121.0.0.0/24 route through multiple routing protocols. Which route is established?

A. route with the next hop that has the highest IP
B. route with the lowest cost
C. route with the lowest administrative distance
D. route with the shortest prefix length

Answer: C.

Explanation

Route Preference: 1. Longest Prefix 2. Administrative Distance 3. Metric In this particular question, the first option is: Administrative Distance.

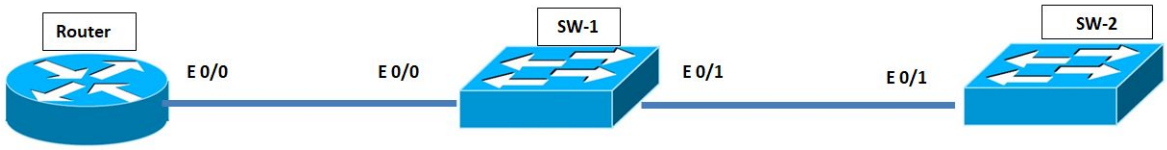
Question 67:
What are the minimum parameters that must be entered on an active interface to make OSPFV2 work? (Choose two.)

A. OSPF process ID
B. OSPF MD5 authentication key
C. OSPF stub flag
D. lPv6 address
E. OSPF area

Answer: A, E.

Explanation
OSPF Basic Configuration Enter global configuration mode -->router#configure terminal Create an OSPF routing process and enter router configuration mode.-->router(config)#router ospf process-id Configure the interfaces that OSPF will be enabled on.-->router(config-router)#network network wildcard-mask area area-id

Question 68:
See the exhibition. What commands are required to add a subinterface to Ethernet0/0 on R1 to allow VLAN 30 with IP address 10.30.30.1/24?



Router	SW-1	SW-2
interface Ethernet0/0 no ip address!	interface Ethernet0/0 switchport trunk encapsulation dot1q switchport mode trunk ! interface Ethernet0/1 switchport trunk allowed vlan 7 switchport trunk encapsulation dot1q switchport mode trunk !	interface Ethernet0/1 switchport trunk encapsulation dot1q switchport mode trunk ! interface Ethernet0/3 switchport access vlan 30 switchport mode access !

A. Router(config)#interface ethernet0/0 Router(config)#encapsulation dot1q 30 Router(config)#ip address 10.30.30.1 255.255.255.0

B. Router(conflg)#interface ethernet0/0.30 Router(config)#encapsulation dot1q 30 Router(config)#ip address 10.30.30.1 255.255.255.0
C. Router(config)#interface ethernet0/0.30 Router(config)#ip address 10.30.30.1 255.255.255.0
D. Router(config)#interface ethernet0/0 Router(config)#ip address 10.30.30.1 255.255.255.0

Answer: B.

Explanation
To add a subinterface to Ethernet0/0 on the router, you need to enter encap dot1q 20 otherwise you won't be able to enable 802.1q (and you'll have vlan crosstalk). The next step would be to add your local subinterface. This requires "encap dot1q x local" with x being the local vlan. Local vlans are not assigned IP addresses. The physical interface is opened and no ip is assigned to it.

Question 69:
According to the Router output in the picture, what does the router use as the OSPF router ID?

Router# ip interface brief

Interface	IP-Address	OK?	Method	Status	Protocol
FastEthernet	unassigned	YES	NVRAM	administratively down	down
GigabitEthernet2/1	192.168.100.1	YES	NVRAM	up	up
GigabitEthernet3/1	121.10.10.10	YES	manuel	up	up
GigabitEthernet4/1	121.10.100.20	YES	manuel	up	up
GigabitEthernet5/1	unassigned	YES	NVRAM	administratively down	down
Loopback0	172.26.12.10	YES	manuel		

A. 121.10.10.10
B. 121.10.100.20
C. 172.26.12.10
D. 192.168.100.1

Answer: C.

Explanation
OSPF uses the following criteria to select the router ID: 1. Manual configuration of the router ID (via the command ‚€router-id x.x.x.x under

OSPF router configuration mode). 2. The highest IP address on the loopback interface. 3. Highest IP address on a loopback and active (no shutdown) interface.

Question 70:
When OSPF learns multiple routes to a network, how does it choose one?

A. For each available interface, it adds the metric from the source router to the destination to calculate the lowest bandwidth route.
B. Counts the number of hops between the source router and the destination to determine the route with the lowest metric.
C. Divide a reference bandwidth of loo Mbps by the actual bandwidth of the available interface to calculate the least cost route.
D. Multiplies the active K values by 256 to calculate the route with the lowest metric.

Answer: C.

Explanation
OSPF uses Least cost route to make routing decisions

Question 71:
When a floating static route is configured, what action ensures that the backup path is used when the primary path fails?

A. The administrative distance must be higher on the primary route so that the backup route becomes secondary.
B. The default-information originate command must be configured for the route to be installed into the routing table.
C. The floating static route must have a lower administrative distance than the primary route so it is used as a backup.
D. The floating static route must have a higher administrative distance than the primary route so it is used as a backup

Answer: D.

Explanation

By default, IOS treats static routes better than OSPF-learned paths. By default, IOS gives static routes 1 administrative distance A floating static route enters and exits the IP routing table depending on whether the better (lower) management distance route learned by the routing protocol is available.

Question 72:
A network technician configured OSPF and advertised the Gigabit Ethernet interface in OSPF. By default, what type of OSPF network does this interface belong to?

A. point-to-multipoint
B. point-to-point
C. broadcast
D. non-broadcast

Answer: C.

Explanation
Broadcast network type is the default for an OSPF enabled ethernet interface (Point to Point is the default OSPF network type for Serial interface with HDLC and PPP encapsulation).

Question 73:
What attribute does a router use to choose the best route when there are two or more different routes to the same destination from two different routing protocols in a network?

A. dual algorithm
B. metric
C. administrative distance
D. hop count

Answer: C.

Explanation
Administrative distance is the feature used by routers to choose the best route when there are two or more different routes from different routing

protocols to the same destination. Administrative distance defines the reliability of a routing protocol.

Question 74:
What is the administrative distance of the route to be established in the routing table?

A. 20
B. 90
C. 110
D. 115

Answer: B.

Explanation
EIGRP's Administrative distance (AD) is 90 while OSPF's AD is 110, so the EIGRP route will be selected to load into the routing table.

Question 75:
What action affects the EIGRP route selection process on a network device? (Choose two.)

A. The advertised distance is calculated by a downstream neighbor to inform the local router of the bandwidth on the link.
B. The router calculates the feasible distance of all paths to the destination route.
C. The router must use the advertised distance as the metric for any given route.
D. The router calculates the best backup path to the destination route and assigns it as the feasible successor.
E. The router calculates the reported distance by multiplying the delay on the existing interface by 256.

Answer: B, D.

Explanation
The declared distance (or the advertised distance) is the cost from the neighbor to the destination. It is calculated from the router advertising the

route to the network.

Question 76:
Which of the following are predictable behaviors for HSRP? (Choose two.)

A. The two routers negotiate one router as the active router and the other as the standby router.
B. The two routers share the same interface IP address, and default gateway traffic is load-balanced between them.
C. The two routers synchronize configurations to provide consistent packet forwarding.
D. Each router has a different IP address, both routers act as the default gateway on the LAN, and traffic ¡s load-balanced between them.
E. The two routers share a virtual IP address that is used as the default gateway for devices on the LAN.

Answer: A, E.

Explanation
Hot Redundant Router Protocol (HSRP) A Cisco proprietary protocol that allows two (or more) routers to share the duties of being the default router in a subnet with one active/standby model acting as the default router and the other as the default router first router fails on HSRP if so, sitting around waiting to take on that role.

Question 77:
When using HSRP on a network, how does HSRP provide first-hop redundancy?

A. It load-balances Layer 2 traffic along the path by flooding traffic out all interfaces configured with the same VLAN.
B. It uses a shared virtual MAC and a virtual IP address to a group of routers that serve as the default gateway for hosts on a LAN.
C. It forwards multiple packets to the same destination over different routed links in the data path.
D. It load-balances traffic by assigning the same metric value to more than one route to the same destination in the IP routing table.

Answer: B.

Explanation
This virtual IP address is in the same subnet as the interface IP address, but is a different IP address. The router then automatically generates the virtual MAC address. All cooperating HSRP routers know these virtual addresses, but only the HSRP active router uses these addresses at any given time. The virtual router is responsible for host communications, such as an ARP request for the host's default gateway. Technically this is served by the active router as it hosts the virtual router. However, it is the IP address and MAC address of the virtual router used for outgoing packets.

Question 78:
What command should you enter to ensure a higher priority HSRP router becomes the HSRP primary router after reinstallation?

A. standby 10 preempt
B. standby 10 version 1
C. standby 10 priority 150
D. standby 10 version 2

Answer: A.

Explanation
The preempt command makes the HSRP router with the highest priority immediately become the active router.

Question 79:
What command should you enter to verify the priority of a router in the HSRP group in a network?

A. show hsrp
B. show sessions
C. show interfaces
D. show standby

Answer: D.

Explanation
on the contrary if the question is vrrp, command is: show vrrp and for GLBP, show glbp

Question 80:
Which of the dynamic routing protocols are Distance Vector routing protocols? (Choose two)

A. IS-IS
B. EIGRP
C. OSPF
D. BGP
E. RIP

Answer: B, E.

Explanation
EIGRP is sometimes referred to as a hybrid routing protocol because it has features of both distance vector and link state protocols. For example, EIGRP does not send link state packets as OSPF does; instead, it sends traditional distance vector updates containing information about networks and the cost of reaching them from the ad router's point of view. And EIGRP also has link state features; it initially synchronizes routing tables between neighbors and then only sends specific updates when topology changes occur. This makes EIGRP suitable for very large networks. EIGRP's maximum hop count is 255 (default value is set to 100).

Question 81:
What action can the network technician take to fix the problem in the least annoying way?

A. Reload the OSPF process
B. Specify a Ioopback address
C. Reboot the router
D. Save the router configuration

Answer: A.

Explanation
Once an OSPF Router ID is selected, it remains there even if you remove it or configure another OSPF Router ID. So the least annoying way is to fix it using the clear ip ospf process command.

Question 82:
What command would you use to view the error log in an EIGRP environment for IPv6?

A. show ipv6 eigrp neighbors
B. show ipv6 eigrp topology
C. show ipv6 eigrp traffic
D. show ipv6 eigrp events

Answer: D.

Explanation
show ip eigrp events To display the Enhanced Interior Gateway Routing Protocol (EIGRP) event log, use the show ip eigrp events command in user EXEC or privileged EXEC mode.

Question 83:
Which statements about external routing protocols are true? (Choose two.)

A. They determine the optimum within an autonomous system.
B. They determine the optimal path between autonomous systems.
C. BGP is the current standard external routing protocol.
D. Most modern networking supports both EGP and BGP for external routing.
E. Most modern network routers support both EGP and EIGRP for external routing.

Answer: B, C.

Explanation

External Gateway Protocols (EGP): Used for routing between autonomous systems. Also called inter-AS routing. Service providers and large companies can be interconnected using an EGP. Border Gateway Protocol (BGP) is the only currently valid EGP and is the official routing protocol used by the Internet.

Question 84:
What do you need to do to load balance your EIGRP routes?

A. Change max paths to 2
B. Change the configuration so that both have the same appropriate distance
C. Change the variance of the path with the applicable distance between 3072 and 2
D. Change IP addresses so both routes have the same source IP address

Answer: B, C.

Explanation
Eigrp supports unequal path measurements (cost) using the Variance command. both B and C represent the same thing, so changing the variance to 2 will allow the value to be the same(2*3072=6144) which C & B cases change the configuration to get the same workable distance as given the variance of both will also have the same applicable distance.

Question 85:
Under what conditions can it prevent two routers from establishing an OSPF neighbor? (Choose two.)

A. mismatched autonomous system numbers
B. an ACL blocking traffic from multicast address 224.0.0.10
C. mismatched process IDs
D. mismatched hello timers and dead timers
E. use of the same router ID on both devices

Answer: D, E.

Explanation

OSPF detected one with the same id. Action—must be an ID from OSPF ID. Make sure all the designs in the area have their identity.

Question 86:
Which explains the reasons why large OSPF networks use a hierarchical design? (Choose three.)

A. to speed up convergence
B. to reduce the routing overhead
C. reducing costs by replacing routers with distribution layer switches
D. reduce latency by increasing bandwidth
E. to limit network instability to single areas of the network
F. to reduce the complexity of router configuration

Answer: A, B.

Explanation
OSPF's hierarchical design (which basically means you can split larger networks into smaller networks called domains) helps us build a network with all the features listed above (reduces routing overhead, speeds up convergence, limits network instability to single domains of the network).

Question 87:
What value is used by default to determine the active router in an HSRP configuration?

A. Router Ioopback address
B. Router IP address
C. Router priority
D. Router tracking number

Answer: B.

Explanation
The priority field is used to select the active router and backup router for the particular group. In case of equal priority, the router with the highest IP address for the respective group is actively selected. Also, if there are more

than two routers in the group, the second highest IP address determines the standby router and the other router(s) is in a listening state.

Question 88:
What command can you apply to an HSRP router so that its local interface becomes active if all other routers on a network fail?

A. no additional config is required
B. standby 1 track ethernet
C. standby 1 preempt
D. standby 1 priority 250

Answer: A.

Explanation
Simply this will not preserve attributes such as priority or priority as this will be the default behavior that routers will follow if all other routers in the HSRP group fail. In summary, what prefetching does is ensure that the configured Priority is always respected on all routers within the same HSRP group.

Question 89:
Which statement about eBGP neighbor relations is true? (Choose two.)

```
R-1# show ip route
Codes: C-connected, S-static, R-RIP, M-Mobile, B-BGP
       D-EIGRP, EX-EIGRP external, 0-OSPF, IA-OSPF inter area
       E1-OSPF external type 1, E2- OSPF external type 2
       i-IS-IS, su-IS-IS summary, L1-IS-IS level-1, L2-IS-IS level-2
       ia-IS-IS  inter area, *-candidate default, U-per-user static route
       o-DDR, P-periodic downloaded static route

Gateway of last resort is 192.168.110.1 to network 0.0.0.0
       22.0.0.0/24 is subnettted, 3 subnets
C          22.0.22.0  is directly connected, Ethernet0/1
D          22.0.23.0 [90/2195456] via 192.168.1.2, 00:5:08, Serial0
D          22.0.24.0 [90/2195456] via 192.168.3.1, 00:5:08, Serial1
C          192.168.1.0/24 is directly connected, Serial0
D          192.168.2.0/24 [90/2588456] via 192.168.1.2, 00:5:08, Serial0
                          [90/2588456] via 192.168.3.1, 00:5:08, Serial1
C          192.168.3.0/24 is directly connected, Serial1
C          192.168.4.0/24 is directly connected, Serial2
```

A. The two devices must be in different autonomous systems
B. Neighbors must be specifically specified in the configuration of each device.
C. They can be dynamically created after the network expression is configured.
D. The two devices must be in the same autonomous system
E. The two devices must have matching timer settings

Answer: A, B.

Explanation
Since IGPs are within autonomous systems, BGP is between autonomous systems and needs to be configured manually.

Question 90:
According to the output in the picture, how is the router expected to handle a packet sent for 192.120.2.156?

A. The router will forward the packet via SerialO or Serial1.
B. The router sends the packet back to its source.
C. The router will forward the packet via Serial2.
D. The router will drop the packet.

Answer: C.

Explanation
Router forwarded default router to 192.168.4.1 and this subnet is connected via serial 2 interface. The router has no router for 192.120.2.156. so it will use the default gateway 192.168.4.1. The default route defines the gateway IP address to which the router sends all IP packets for which it does not have a learned or static route.

Question 91:
What is the definition of OSPF routing protocol? (Choose three.)

A. Supports VLSM.
B. Used for routing between autonomous systems.
C. Limits network instability to one area of the network.
D. It increases the routing load on the network.
E. Provides comprehensive control of routing updates.
F. Easier to configure than RIP v2.

Answer: A, C.

Explanation
The OSPF protocol is based on link state technology, which differs from the Bellman-Ford vector-based algorithms used in traditional Internet routing protocols such as RIP. OSPF introduced new concepts such as authentication of routing updates, Variable Length Subnet Masks (VLSM), route summarization and so on. OSPF uses overflow to switch link state updates between routers. Any change in routing information is forwarded to all routers on the network. Fields were introduced to put a limit on the explosion of link state updates. The overflow and calculation of the Dijkstra algorithm on a router is limited to changes in one domain.

Question 92:
Which command is used to view the OSPF collection of connection states?

A. show ip ospf link-state
B. show ip ospf Isa database
C. show ip ospf neighbors
D. show ip ospf database

Answer: D.

Explanation
The "show ip ospf database" command displays the link states.

Question 93:
If all OSPF routers in a single network are configured with the same priority value, what value will a router use for the OSPF router ID when there is no loopback interface?

A. IP address of the first Fast Ethernet interface
B. IP address of console management interface
C. Highest IP address among active interfaces
D. Lowest IP address among active interfaces
E. priority value until a Ioopback interface is configured

Answer: C.

Explanation
A router ID is determined in the following order: 1. Using the router ID command under OSPF operation to statically configure the router ID. 2. Using the highest IP address of the router's loopback interfaces. 3. Using the highest IP address of the active physical interfaces of the router.

Question 94:
What tasks does the OSPF Hello protocol perform? (Choose two.)

A. Provides dynamic neighbor discovery.
B. Detects unreachable neighbors at 90 second intervals.
C. Maintains neighborly relations.

D. Negotiates accuracy parameters between neighboring interfaces.
E. Uses timers to select the router with the fastest connections as the designated router.
F. Broadcasts hello packets between networks to discover all routers running OSPF.

Answer: A, C.

Explanation
DEAD timer defaults to 40 seconds, hello timer is 10 seconds for ethernet networks

Question 95:
What are the requirements for an HSRP group? (Choose two.)

A. exactly one active router
B. one or more standby routers
C. one or more redundant virtual routers
D. exactly a standby active router
E. a full backup virtual router

Answer: A, B.

Explanation
Exactly one active router: Only one Active Router will be selected per HSRP group based on highest priority. In case of equal priority, the Highest IP address will be selected as Active Router. One or more redundant routers: There can be one or more Standby Routers.

Question 96:
What information can you learn by examining the routing table? (Choose two.)

A. whether an ACL was applied inbound or outbound to an interface
B. the EIGRP or BGP autonomous system
C. whether the administrative distance was manually or dynamically configured
D. which neighbor adjacencies are established

E. the length of time that a route has been known

Answer: C, E.

Explanation
C is correct because from this command you can see the AD values of the routes. If they match the default values, they are not manually configured and the length of a route's duration can be known.

Question 97:
What route type does the Code D routing protocol represent according to the output in the image?

```
      12.0.0.0/24 is subnettted, 1 subnets
C           12.0.0.0 is directly connected, FastEthernet0/1
C           172.168.0/16 is directly connected, FastEthernet0/0
D           192.168.2.0/24 [90/2588456] via 172.168.1.2, 00:00:08, FastEthernet0/0
```

A. statically assigned route
B. route learned through EIGRP
C. /24 route of a locally configured IP
D. internal BGP route

Answer: B.

Explanation
D = EIGRP, O = OSPF, L = Local, S = Static, C = Direct Coupled EIGRP uses the DUAL (D) algorithm to perform its calculations.

Question 98:
A network technician should configure an OSPF neighbor relationship between router R-1 and R-4. The authentication configuration is configured and the connection interfaces are on the same 192.168.11.0/30 subnet. What are the next two steps to complete the configuration? (Choose two.)

A. Configure interfaces as active OSPF on both sides

B. configure both interfaces with same field ¡d
C. configure hello and dead timers to match on both sides
D. Configure same process ID for router OSPF process
E. configure same router ID in both routing processes

Answer: A, B.

Explanation
"configure interfaces with OSPF enabled" refers to adding OSPF configuration to the interface instead of network expressions. ie Int g0/0, ip ospf 1 field 0

Question 99:
Which device performs stateful inspection of traffic?
A. router
B. firewall
C. access point
D. wireless controller

Answer: B.

Explanation
Health checking, also known as dynamic packet filtering, is a firewall technology that monitors the status of active connections and uses this information to determine which network packets to allow through the firewall.

Question 100:
What software-defined architectural plane provides Layer 2 accessibility and Layer 3 routing information to assist network devices in making packet forwarding decisions?
A. management plane
B. control plane
C. data plane
D. policy plane

Answer: B.

Explanation
The control plane is the part of a network that controls how data is transmitted, while the data plane controls the actual transmission process. Making packet forwarding decisions is 'how the data is transmitted'.

Chapter 4: CCNA 200-301 Full Mock Test 3

Question 1:
A network technician has enabled port security on a switch interface connected to a printer. What is the next step to make the port learn the printer's MAC address and automatically add it to the table?

A. enable dynamic MAC address learning
B. implement static MAC addressing
C. enable sticky MAC addressing
D. implement auto MAC address learning

Answer: C.

Explanation
You can configure an interface to convert dynamic MAC addresses to sticky secure MAC addresses and add them to the running configuration by enabling sticky learning. Enter switchport port-security mac-address sticky to enable sticky learning

Question 2:
Which mechanism supports encryption and carries multicast traffic between remote sites in a network topology?

A. ISATAP
B. IPsec over ISATAP
C. GRE
D. GRE over IPsec

Answer: D.

Explanation
IPsec cannot encapsulate multicast, broadcast, or non-IP packets, and GRE cannot authenticate and encrypt packets. Based on the same principle, these

applications encapsulate the packets as IP packets using GRE and then forward the packets over IPsec tunnels.

Question 3:
When Site-to-Site VPN is configured between remote locations in a network, which IPsec mode ensures that the entire original IP packet is encapsulated and encrypted?

A. IPsec tunnel mode with AH
B. lPsec transport mode with AH
C. IPsec tunnel mode with ESP
D. lPsec transfer mode with ESP

Answer: C.

Explanation
Encapsulating Security Payload (ESP) is a member of the Internet Protocol Security (IPsec) protocol group that encrypts and authenticates data packets between computers using a Virtual Private Network (VPN). The focus and layer on which ESP works makes it possible for VPNs to operate securely.

Question 4:
What is the purpose of physical access control?

A. access to specific networks based on business function
B. access to servers to prevent malicious activities
C. access to computer networks and file systems
D. access to network equipment and facilities

Answer: D.

Explanation
Physical access control regulates the measures taken to prevent unauthorized access to network devices and their environments.

Question 5:
Which protocols need to be disabled to improve the security of management connections to a Wireless LAN Controller? (Choose two.)

A. HTTPS
B. SSH
C. HTTP
D. Telnet
E. TFTP

Answer: C, D.

Explanation
HTTP and Telnet are both insecure. That's why we have HTTPS and SSH. TFTP is not used for WLC threads. Just simple file transfer, unencrypted.

Question 6:
What is the benefit of using FHRP in a network?

A. balancing traffic across multiple gateways in proportion to their loads
B. reduced management overhead on network routers
C. reduced ARP traffic on the network
D. higher degree of availability

Answer: D.

Explanation
First-hop redundancy protocol (FHRP) is a computer networking protocol designed to maintain the default gateway used in a subnet by allowing two or more routers to provide backup for that address; If there is an active router, the backup router address usually takes over within a few seconds. In practice, such protocols can be used to protect not only routers but also other services running on a single IP address.

Question 7:
On a computer running Microsoft Windows operating system, which protocol provides the default gateway?

A. DHCP
B. STP
C. SNMP
D. DNS

Answer: A.

Explanation
Dynamic Host Configuration Protocol (DHCP) is a client/server protocol that automatically provides an Internet Protocol (IP) host with its IP address and other relevant configuration information such as subnet mask and default gateway.

Question 8:
After a network administrator installs a new Cisco ISE server on the corporate network, what task must he perform on the Cisco WLC to connect wireless clients to a specific VLAN based on their credentials?

A. Enable Authorized MIC APs against authorization list or AAA.
B. Enable Allow AAA Override
C. Disable LAG Mode or Next Restart.
D. Enable Event Driven RRM.

Answer: B.

Explanation
The SSID office_hq is configured under the "WLANs" section in WLC. Configures SSID with WPA2/AES+dot1x and AAA override. The "Dummy" interface is selected for the WLAN, as the appropriate vlan will already be assigned via RADIUS. This dummy interface must be created in WLC and given an ip address, but the ip address need not be valid and the vlan it is placed on may not be created on the uplink switch, so if there is no VLAN the assigned client can't go anywhere.

Question 9:
What can be done to reduce VLAN hopping attacks?

A. enable dynamic ARP inspection
B. manually implement trunk ports and disable DTP
C. activate all ports and place in the default VLAN
D. configure extended VLANs

Answer: B.

Explanation
To avoid exploiting VLAN hopping, we can do the following mitigations: Disable DTP to ensure ports are not set to auto-negotiate loops: NEVER use VLAN 1. Disable unused ports and place them in an unused VLAN ▪ Always use a unique VLAN ID for all home ports.

Question 10:
What is the role of the firewall in a network?

A. Forwards packets based on stateless packet inspection.
B. Processes unauthorized packets and allows passage to less secure segments of the network.
C. determines which packets are allowed to cross from unsecured to secured networks.
D. explicitly denies all packets from entering an administrative domain.

Answer: C.

Explanation
The firewall ensures which packets are allowed to pass from unsecured networks to secure networks on the network where it is used. In addition, Firewall provides security by blocking unwanted packets.

Question 11:
What is the benefit of network automation used in a network? (Choose two.)

A. reduced hardware footprint
B. reduced operational costs
C. faster changes with more reliable results
D. fewer network failures
E. increased network security

Answer: B, C.

Explanation

Multiple processes are performed from simple automation and results are delivered in a timely and cost-effective manner. Therefore, the operating cost is reduced.

Question 12:
Which of the following is a task of the Cisco DNA Center Health Dashboard?

A. It provides a summary of the top 10 global issues.
B. It provides detailed activity logging for the 10 devices and users on the network.
C. It summarizes the operational status of each wireless device on the network.
D. It summarizes daily and weekly Cpu usage for servers and workstations in the network.

Answer: A.

Explanation
One of the primary goals of Cisco DNA Center is to automate workflows and deployments between different systems to streamline transactions across domains.

Question 13:
Which of the following protocols requires authentication to transfer a backup configuration file from a router to a remote server?

A. DTP
B. FTP
C. SMTP
D. TFTP

Answer: B.

Explanation
When transferring files with FTP, username and password are used as authentication mechanisms. In this way, the authentication process is done.

Question 14:
What QoS is used to optimize voice traffic in a network where data traffic takes precedence?

A. FIFO
B. WFQ
C. PQ
D. WRED

Answer: C.

Explanation
PQ guarantees absolute priority as it allows some kind of traffic to be sent.

Question 15:
Where is the interface between the control plane and the data plane when using software defined network (SDN) architecture?

A. control layer and infrastructure layer
B. application layer and infrastructure layer
C. application layer and management layer
D. control layer and application layer

Answer: C.

Explanation
Software-defined networking (SDN) architecture (or SDN architecture) describes how a network and computing system can be built using a combination of open, software-based technologies and commercial networking hardware. between the application layer and the management layer.

Question 16:
The software team requests a network administrator to configure VLANS 10, 11 and 12 for a new application. Some ports must be assigned to the new unused VLANS. What action should be taken for unused ports?

A. configure port in the native VLAN

B. configure ports in a black hole VLAN
C. configure in a nondefault native VLAN
D. configure ports as access ports

Answer: B.

Explanation
Black hole VLAN: Security best practice is to define a black hole VLAN as a synthetic VLAN different from all other VLANs defined in the switched LAN. All unused switch ports are assigned to the black hole VLAN, thus preventing any unauthorized device connecting to an unused switch port from communicating beyond the switch to which it is connected.

Question 17:
Why is the RFC 1918 address space defined in a network?

A. keep public lPv4 addressing
B. Protect the public lPv6 address space
C. reduce instances of overlapping IP addresses
D. Support NAT protocol

Answer: A.

Explanation
RFC 1918, or the publicly non-routable IP Address space, is one of those "gaps" that arose from the need to extend the IPv4 space along with NAT, which has become the de facto standard for many network operators, both for security and primitive. for asset tracking purposes.

Question 18:
What HTTP status code is returned after a successful REST API request?

A. 200
B. 301
C. 404
D. 500

Answer: A.

Explanation
Codes starting with 2xx indicate that the client's request was successfully accepted.

Question 19:
What are the risks of network endpoints?

A. act as routers to connect a user to the service prowler network
B. a threat to the network if they are compromised
C. support inter-VLAN connectivity
D. enforce policies for campus-wide traffic going to the internet

Answer: B.

Explanation
An endpoint is a remote computing device that communicates back and forth with a network to which it is connected. Endpoint examples include: Desktop computers. Laptops. Smart phones.

Question 20:
What events occur automatically when a device is added to Cisco DNA Center? (Choose two.)

A. The device is placed in the Managed state.
B. The device is placed in the Unmanaged state.
C. The device is assigned to the Local site.
D. The device is assigned to the Global site.
E. The device is placed in the Provisioned state.

Answer: A, D.

Explanation
Device in Global Site—When you successfully add, import, or discover a device, DNA Center puts the device in Managed state and assigns it to the Global site by default. Even if you have defined the Syslog and SNMP

server settings for the global site, DNA Center does not change the Syslog and SNMP server settings on the device.

Question 21:
What severity level should be set on the syslog server to receive informative logs?

A. Warning
B. critical
C. notice
D. debugging

Answer: C.

Explanation
Warning: Normal but important conditions. Conditions that are not error conditions but may require special handling

Question 22:
What is the role of the controller in controller-based networking?

A. It serves as the centralized management point of an SDN architecture.
B. It centralizes the data plane for the network.
C. It is the card on a core router that maintains all routing decisions for a campus.
D. It is a pair of core routers that maintain all routing decisions for a campus.

Answer: A.

Explanation
A controller or SDN controller centralizes control of network devices. The degree of control and type of control vary greatly. For example, the controller can perform all control plane functions by changing the distributed control plane of the devices.

Question 23:

What is the advantage of controller-based networking compared to traditional networking? (Choose two.)

A. Controller-based network increases bandwidth usage while lightening the load on the traditional network
B. Increases traditional error probability while reducing controller-based network configuration complexity
C. controller-based increases traditional failure rates while allowing fewer network failures
D. Controller- based requires traditional, distributed management functions while enabling centralization of core IT functions
E. Reduces traditional, individual licensing costs while increasing controller based software costs

Answer: B, D.

Explanation
It reduces the complexity of controller-based network configuration while increasing the probability of traditional failure. controller-based, enabling centralization of core IT functions while requiring traditional, distributed management functions

Question 24:
What severity level logs informational messages when deploying the syslog?

A. 0
B. 2
C. 4
D. 6

Answer: D.

Explanation
Some fixes to note on the number of days of messages. To the log of the specified level or numerically modest. Violence is:

- 0 —emergency: No access to the system
- 1 —warning: Urgent action required

- 2 —critical: Critical state—default level
- 3 —error: Error
- 4 —warning: Information
- 5 —notice: Normal but important condition
- 6 —informational: Informational message only
- 7—bug breeding: House bug appears in

Question 25:
How are the switches interconnected in a network designed in a backbone and leaf topology?

A. Each leaf switch is connected to one of the spine switches.
B. Each leaf switch is connected to two spine switches, making a loop.
C. Each leaf switch is connected to each spine switch.
D. Each leaf switch is connected to a central leaf switch, then uplinked to a core spine switch.

Answer: B.

Explanation
A backbone-leaf architecture is a data center network topology that consists of two switching layers (a backbone and a leaf). The leaf layer consists of access switches that collect traffic from servers and connect directly to the backbone or network core. Backbone switches interconnect all leaf switches in a full network topology.

Question 26:
What device is used for DHCP to forward requests and responses between client and server when client and server are not on the same physical network?

A. DHCP relay agent
B. DHCP server
C. DHCP DISCOVER
D. DHCPOFFER

Answer: A.

Explanation
A DHCP relay agent is any TCP/IP host used to forward requests and responses between a DHCP server and a client when the server is present on a different network. Relay agents receive DHCP messages and then create a new DHCP message to send over another INTERFACE. Additionally, the DHCP relay agent adds a giaddr (gateway address of the packet) field and also the Relay agent info option 82 if enabled. The options field is removed when the server response is forwarded to the host.

Question 27:
What is the plane centralized by the SDN controller?

A. management plane
B. control plane
C. data plane
D. services-plane

Answer: B.

Explanation
SDN Architecture The SDN control plane is centralized while the data plane is distributed. The centralized nature of the control plane makes the network flexible and improves forward decision making. The SDN controller resides in the control plane of an externally programmable SDN architecture.

Question 28:
What purpose does an API server serve in a controller-based network architecture?

A. Communicates between the controller and physical network hardware.
B. Reports device errors to a controller.
C. Generates statistics for network hardware and traffic.
D. It facilitates communication between the controller and applications.

Answer: D.

Explanation
In a controller-based network architecture, the API is used to enable communication between the controller and applications.

Question 29:
In controller-based architectures, which API is used to interact with edge devices?

A. southbound
B. overlay
C. northbound
D. underlay

Answer: A.

Explanation
Northbound APIs are used to enable communication between the controller and applications in a controller-based network architecture. The southbound interface is the link between the controller and the physical network hardware.

Question 30:
How do traditional campus device management and Cisco DNA Center device management differ in terms of deployment?

A. Cisco DNA Center device management can be implemented at a lower cost than most traditional campus device management options.
B. Traditional campus device management schemes can typically deploy patches and updates more quickly than Cisco DNA Center device management.
C. Cisco DNA Center device management can deploy a network more quickly than traditional campus device management.
D. Traditional campus device management allows a network to scale more quickly than with Cisco DNA Center device management.

Answer: C.

Explanation

Cisco DNA Center features help simplify initial setup, simplify the job of implementing traditionally challenging configuration features, and use tools to help you spot problems faster.

Question 31:
What are the two important foundations of virtualization? (Choose two.)

A. Allows logical network devices to carry traffic between virtual machines and the rest of the physical network.
B. Allows multiple operating systems and applications to run independently on a single physical server.
C. Allows a physical router to directly connect NICs from each virtual machine to the network.
D. Requires some servers, virtual machines, and network equipment to be available on the Internet.
E. The environment must be configured with a hypervisor that only serves as the network manager to monitor SNMP traffic.

Answer: A, B.

Explanation
Every virtualization solution has virtual switches (logical network), these virtual switches allow virtual machines to communicate on the network. We also assign vlan tags to these switches or make trunks. The main purpose of Server Virtualization is to run many VMs on the same physical server.

Question 32:
A network technician needs to configure the IPv6 address 2001:0db8:0000:0000:0700:0003:400F:572B on the serial1/1 interface of the HQ router and wants to use compression for easier configuration. What command should be given in the router interface?

A. ipv6 address 2001 :db8::700:3:400F:572B
B. ipv6 address 2001 :db8:0::700:3:4F:572B
C. ipv6 address 2001 :0db8::7:3:4F:572B
D. ipv6 address 2001 ::db8:0000::700:3:400F:572B

Answer: A.

Explanation
ipv6 address 2001:db8::700:3:400F:572B

Question 33:
Which of the following describes the operation of virtual machines?

A. Virtual machines are responsible for managing and allocating host hardware resources.
B. In a virtual machine environment physical servers must run one operating system at the same time.
C. Virtual machines are physical hardware that supports a virtual environment
D. Virtual machines are instances of operating systems separated from the server hardware.

Answer: B.

Explanation
In a virtual machine environment, only one operating system runs at a time on the physical server on which the virtual servers run. In case of different operating systems on the physical server, the switch is made by selecting the operating system while opening the physical server.

Question 34:
Which facilitates a Telnet connection between devices by entering the device name?

A. SNMP
B. DNS lookup
C. syslog
D. NTP

Answer: B.

Explanation

Generally speaking, a DNS lookup is the process of returning a DNS record from a DNS server. Connected computers, servers, and smartphones need to know how to translate email addresses and domain names that people use into meaningful numeric addresses. A DNS lookup performs this function.

Question 35:
Why use Traffic shaping?

A. to be a marking mechanism that identifies different streams
B. to provide fair queue for buffered streams
C. To reduce latency on slow links
D. to limit the bandwidth a stream can use

Answer: D.

Explanation
The main reasons you use traffic shaping are to control access to available bandwidth, to regulate traffic flow to ensure that traffic complies with the policies established for it, and to prevent congestion that can occur when sent traffic exceeds reach. far, the speed of the target interface.

Question 36:
Which of the following configuration management mechanisms uses TCP port 22 by default when communicating with managed nodes?

A. Ansible
B. Python
C. Puppet
D. Chef

Answer: A.

Explanation
Ansible: - uses SSH (port 22) for remote device communication - uses YAML for fundamental configuration Chef: - uses TCP port 10002 for configuration push jobs - uses Ruby for fundamental configuration elements Puppet: - uses TCP 8140 for communication - fundamental configuration elements are stored in a manifest

Question 37:
Which of the following is the CRUD operation corresponding to the HTTP GET method?

A. read
B. update
C. create
D. delete

Answer: A.

Explanation
This method retrieves information identified by the request URI. In the context of RESTful web services, this method is used to retrieve resources. This is the method used for read operations (R in CRUD).

Question 38:
According to the OSI model, the layer header contains the address of a destination host located on another network?

A. Application
B. Session
C. Transport
D. Mountain
E. Data connection
F. Physical

Answer: D.

Explanation
Only the network address contains this information. To transmit packets, the sender uses the network address and a data link address. The layer 2 address simply represents the address of the next hop device to the sender. It is changed in each tab. The network address remains the same.

Question 39:
In the OSI model, what layer can RSTP use to avoid loops?

A. Physical
B. Data link
C. Network
D. Transport

Answer: B.

Explanation
RSTP and STP operate on switches and are based on the exchange of Bridge Protocol Data Units (BPDUs) between switches. One of the most important areas in BPDUs is Bridge Priority, where the MAC address is used to select the Root Bridge. RSTP operates at Layer 2 – Data Link.

Question 40:
Which helps to resolve a network issue experiencing a broadcast storm? (Choose two).

A. A bridge
B. A router
C. A center
D. Layer 3 switch
E. An access point

Answer: B, D.

Explanation
Routers and layer 3 switches do not propagate broadcast traffic beyond the local segment, so using these devices is the best method for eliminating broadcast storms.

Question 41:
What is the OSI layer that divides data from a computer into smaller partitions of large files to prevent transmission errors?

A. Session
B. Presentation
C. Application
D. Transport

Answer: D.

Explanation
The transport layer provides the necessary control to segment data and reassemble these chunks in various communication streams. Its primary responsibilities are to monitor individual communication between applications on source and target hosts, partition data and manage each chunk, reassemble partitions into application data streams, and identify different applications.

Question 42:
What is the purpose of partitioning a network with a router? (Choose two).

A. A router processes data faster than switches.
B. Filtering can take place based on layer 3 information.
C. A router reduces the number of conflict areas.
D. Adding a router to the network reduces latency.
E. Broadcasts are not transmitted over the router.

Answer: B, E.

Explanation
By default, routers split broadcast domains and do not roam the network. Routers can also filter traffic using packet filtering using Access Control Lists.

Question 43:
A network technician cannot connect to a remote router using SSH. Part of the show interfaces command is shown. R-1#show interfaces Serial0/1/0 is up, line protocol is down At which OSI layer should the technician begin troubleshooting?

A. physical
B. data link
C. network
D. transport

Answer: B.

Explanation
"Serial0/1/0 is up, line protocol down" in the router output, the first output (Serial0/1/0 is up,) refers to the physical layer. In this case, it indicates that the physical connection is working or alive. The second output (line protocol off) refers to the data link layer (line protocol). Causes a common, incompatible data link layer encapsulation (HDLC vs PPP) or clocking (DCE to DTE).

Question 44:
What process is used to set up a connection-oriented virtual circuit between two computers?

A. Flow control
B. Sequencing
C. Windowing
D. Three-way handshake
E. Duplexing

Answer: D.

Explanation
The TCP/IP transport protocol is a connection-oriented protocol, meaning a reliable connection must be received and confirmed before any data can be transmitted. A three-way handshake in Transmission Control Protocol, in which three messages shake hands to negotiate and initiate a TCP session between two computers. The TCP handshake mechanism is designed so that two computers trying to communicate can negotiate the parameters of the network TCP socket connection before transmitting data such as SSH and HTTP web browser requests.

Question 45:
The receiving computer calculates the checksum on a frame and determines that the frame is damaged, and the frame is then discarded. At which OSI layer does this process occur?

A. Session
B. Transport
C. Network
D. Data link
E. Physical

Answer: D.

Explanation
The Data Link layer provides the physical transmission of data and manages error notification, network topology, and flow control. The Data Link layer divides the message into parts, each called a data frame, and adds a customized header containing the hardware destination and source address.

Question 46:
Which one satisfies the multi-factor authentication requirement?

A. The user enters a username and password, and then re-enters credentials on a second screen.
B. The user swipes a keychain and then clicks an email link.
C. The user enters a username and password, and then clicks a notification in an authentication app on the mobile device.
D. The user enters a PIN into an RSA token and then the RSA key is displayed on a login screen.

Answer: C.

Explanation
This is an example of how two factor authentication (2FA) works: 1. The user logs in to the website or service with his username and password. 2. The password is verified by an authentication server and if correct, the user is eligible for the second factor. 3. The authentication server sends a unique code to the user's second factor method (such as a smartphone app). 4. The user confirms their identity by providing additional authentication for the second factor method.

Question 47:
What feature on the Cisco Wireless LAN Controller, when enabled, restricts management access from certain networks?

A. TACACS
B. CPU ACL
C. Flex ACL
D. RADIUS

Answer: B.

Explanation
A CPU ACL is used when you want to control which devices can talk to the main CPU. Note: CPU ACLs only filter traffic to the CPU, not traffic that exists or is generated by the CPU.

Question 48:
What configuration is required to generate an RSA key for SSH on a router?

A. Configure VTY access.
B. Configure the version of SSH.
C. Assign a DNS domain name.
D. Create a user with a password.

Answer: C.

Explanation
Two conditions must be met for SSH to function normally on a Cisco IOS switch The Cisco IOS image used to support SSH must be a k9(crypto) image. Step 2: Configure the DNS domain of the router

Question 49:
A network technician wants to configure a WLAN using the strongest encryption type for WPA2-PSK. Which password satisfies this operation requirement?

A. WEP
B. AES

C. RC4
D. TKIP

Answer: B.

Explanation
Many routers provide WPA2-PSK (TKIP), WPA2-PSK (AES), and WPA2-PSK (TKIP/AES) as options. TKIP is actually an older encryption protocol that was introduced with WPA to replace the then very insecure WEP encryption. TKIP is actually quite similar to WEP encryption. TKIP is no longer considered secure and is now deprecated. In other words, you shouldn't use it. AES is a more secure encryption protocol introduced with WPA2 and is currently the strongest encryption type for WPA2-PSK/.

Question 50:
Which one accurately compares traditional networks and controller-based networks?

A. Only controller-based networks separate the control plane from the data plane.
B. Traditional and controller-based networks abstract policies from device configurations.
C. Only traditional networks natively support centralized management.
D. Only traditional networks offer a central control plane.

Answer: A.

Explanation
Most traditional devices use a distributed architecture where each control plane resides on a network device. Therefore, in order to work correctly, they must communicate with each other via messages. Unlike distributed architecture, centralized (or controller-based) architectures gather control of network devices in a single device called an SDN controller.

Question 51:
What encoding methods do REST APIs support? (Choose two.)

A. SGML

B. YAML
C. XML
D. JSON
E. EBCDIC

Answer: C, D.

Explanation
Application Policy Infrastructure Controller (APIC) The REST API is a programmatic interface that uses the REST architecture. The API accepts and returns HTTP (not enabled by default) or HTTPS messages containing JavaScript Object Notation (JSON) or Extensible Markup Language (XML) documents.

Question 52:
What is characteristic of a controller-based network? (Choose two.)

A. It uses Telnet to report system issues.
B. The administrator can make configuration updates from the CLI.
C. It uses northbound and southbound APIs to communicate between architectural layers.
D. It decentralizes the control plane, which allows each device to make its own forwarding decisions.
E. It moves the control plane to a central point.

Answer: C, E.

Explanation
controller-based networking style of building computer networks using a controller that centralizes some features and provides application programming interfaces (APIs) that allow software interactions between applications and controllers (northbound APIs) and between controller and network devices (southbound). APIs). centralized control plane An approach to the architecture of network protocols and products that places control plane functions in a centralized function rather than distributing functionality among network devices.

Question 53:
What is the virtual MAC address used by VRRP group 1?

A. 50.403.674.921
B. 0007.c061.bc01
C. 0050.0c05.ad81
D. 0000.5E00.0101

Answer: D.

Explanation
A virtual MAC address is created by the virtual router based on the virtual router identity. The virtual MAC address format is 00-00-5E-00-01-{VRID} (VRRP) and 00-00-5E-00-02-{VRID}.

Question 54:
What type of address is the public IP address of the NAT device used in a network?

A. outside the global
B. outside local
C. inside the global
D. inside local
E. outside local
F. inside public

Answer: C.

Explanation
NAT uses four types of addresses: Internal local address - The IP address assigned to a host on the internal network. The address is not usually an IP address assigned by the Internet Network. Information Center (InterNIC) or service provider. This address is most likely an RFC 1918 private address. Internal global address - A legitimate IP address assigned by the InterNIC or service provider and representing one or more local IP addresses to the outside world. External local address - The IP address of an external host as known to hosts on the internal network. External global address - The IP

address assigned to a host on the external network. The host's owner assigns this address.

Question 55:
What feature or protocol determines whether QOS is sufficient to support IP services?

A. LLDP
B. CDP
C. IP SLA
D. EEM

Answer: C.

Explanation
IP SLA allows an IT professional to gather information about network performance in real time. Therefore, it helps to determine whether the QoS in the network is sufficient for IP services. Cisco IOS Embedded Event Manager (EEM) is a powerful and flexible subsystem that provides real-time network event detection and embedded automation. It gives you the ability to tailor the behavior of your network devices to your business needs.

Question 56:
When examining excessive traffic on the network, a network technician finds that all incoming packets on an interface are allowed, even if the IPv4 ACL is applied to the interface. What misconfiguration would cause this behavior? (Choose two.)

A. The ACL is empty
B. A matching permit statement is too broadly defined
C. The packets fail to match any permit statement
D. A matching deny statement is too high in the access list
E. A matching permit statement is too high in the access list

Answer: B, E.

Explanation

There is an exception to the statement that an ACL always has any implicit negation at the bottom. And this exception is when the ACL is empty. If you use the ip access group to enforce an ACL and that ACL has no expression, all traffic is allowed.

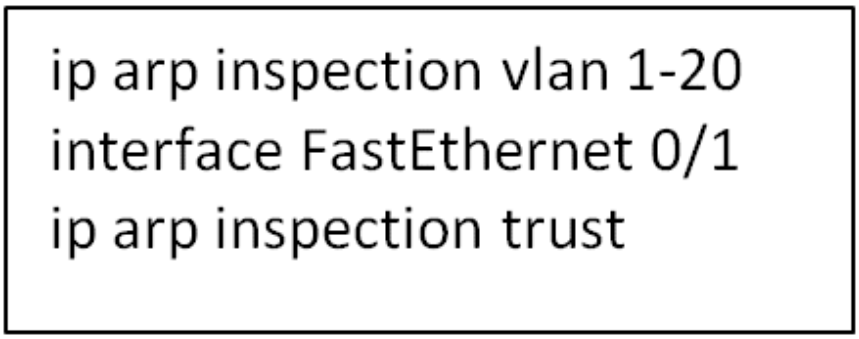
Question 57:
Which WPA3 enhancement protects against people trying to view traffic on the Wi-Fi network?

A. SAE encryption
B. TKIP encryption
C. encrypted encryption key
D. AES encryption

Answer: A.

Explanation
The third version of the Wi-Fi Alliance standard, introduced in 2018, requires pre-shared key or 802.1x authentication, GCMP, SAE, and forward secrecy. Concurrent Authentication (SAE): A strong authentication method used in WPA3 to prevent dictionary attacks to authenticate wireless clients and APs and discover pre shared keys.

Question 58:
According to the situation in the picture, what kind of device should be connected to the fastethernet 0/1 interface if the network environment is working normally?



A. DHCP client
B. access point

C. router Most Voted
D. PC

Answer: D.

Explanation
If the port is secure, it can work by connecting the router Top Rated to the port.

Question 59:
What two formats can be selected when configuring a WLAN with WPA2 PSK in the Cisco Wireless LAN Controller GUI? (Choose two.)

A. decimal
B. ASCII
C. hexadecimal
D. binary
E. base64

Answer: B, C.

Explanation
If you selected PSK in step 7, select ASCII or HEX from the PSK Format drop-down list, and then enter a pre-shared key in the blank text box. WPA pre-shared keys must contain 8 to 63 ASCII text characters or 64 hexadecimal characters. The PSK parameter is a set parameter only. The value set for the PSK key is not visible to the user for security reasons. For example, if you selected HEX as the key format when setting the PSK key, and later view the parameters of this WLAN, the value shown is the default. Default is ASCII

Question 60:
A network technician is asked to protect unused ports configured in the default VLAN on a switch. Which of the following can fulfill this request? (Choose two.)

A. Configure ports as master ports.
B. Enable Cisco Discovery Protocol.

C. Configure the port type as access and place it in VLAN 99.
D. Close ports administratively.
E. Configure ports on an EtherChannel.

Answer: C, D.

Explanation
All ports are on vlan 1 which is known to everyone by default. Vlan 99 in the answer is an unused VLAN in production.

Question 61:
What can be done to prevent network ports from being exploited when placed in an office space outside of a network cabinet? (Choose two.)

A. enable the PortFast feature on ports
B. configure static ARP entries
C. configure ports to a fixed speed
D. implement port-based authentication
E. shut down unused ports

Answer: D, E.

Explanation
To ensure the security of network ports outside the cabinet, unused ports can be closed and the connected device can be controlled by selecting identity-based authentication.

Question 62:
A port security breach has occurred by exceeding the maximum number of previously specified MAC addresses on a switch port. Which command should be configured to increase the number of security breaches and forward an SNMP trap?

A. switchport port-security violation access
B. switchport port-security violation protect
C. switchport port-security violation restrict
D. switchport port-security violation shutdown

Answer: C.

Explanation
Protection - leaves the packet with unknown source address until you remove a secure mac address that will drop below the maximum value. trap is not sent. Constraint - same but violation increments and TRAP sent to SNMP manager. shutdown- disables the interface and sends a trap to the administrator

Question 63:
Where in a switch is the DHCP snooping information kept?

A. In the CAM table
B. In the frame forwarding database
C. In the MAC address table
D. In the binding database

Answer: D.

Explanation
A DHCP table is created containing the source MAC address of a device on an untrusted port and the IP address assigned to that device by the DHCP server. MAC address and IP address are linked. Therefore, this table is called the DHCP snooping binding table.

Question 64:
Which Cisco IOS command can you show that the GigabitEthernet 0/0 interface is configured via DHCP?

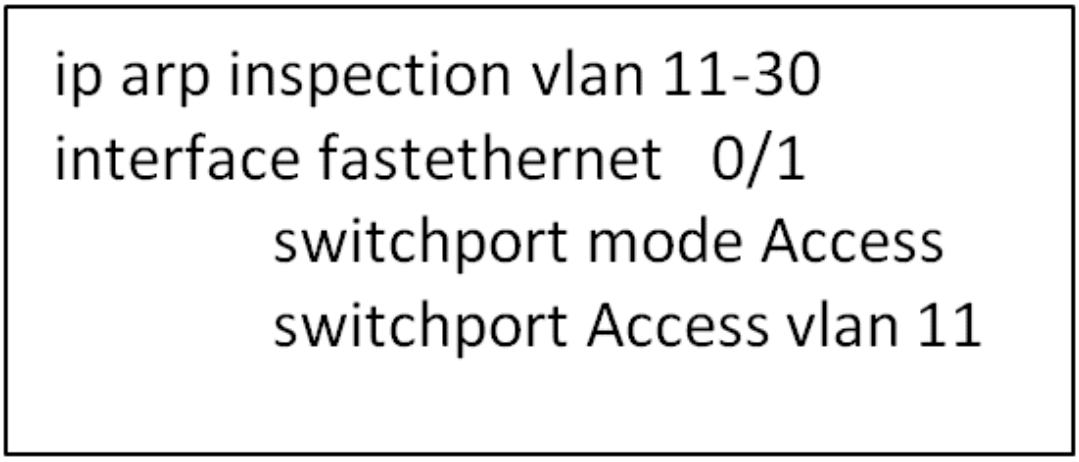
A. show ip interface GigabitEthernet 0/0 dhcp
B. Show GigabitEthernet interface 0/0
C. show ip interface dhcp
D. show ip interface GigabitEthernet 0/0
E. show ip interface summary GigabitEthernet 0/0

Answer: D.

Explanation

"show ip interface" shows all IP specific settings.

Question 65:
According to the output in the picture, what is the effect of this configuration?



A. The switch discards all ingress ARP traffic with invalid MAC-IP address bindings.
B. All ARP packets are dropped by the switch.
C. Egress traffic is only passed if the destination is a DHCP server.
D. All ingress and egress traffic is interrupted because the interface is not trusted.

Answer: A.

Explanation
Dynamic ARP Inspection (DAI) is a security feature that verifies Address Resolution Protocol (ARP) packets on a network. DAI allows a network administrator to block, log, and discard ARP packets with invalid MAC addresses on IP address bindings.

Question 66:
Which protocol is responsible for transporting user data when using a site-to-site VPN?

A. IPsec
B. IKEv1

C. MD5
D. IKEv2

Answer: A.

Explanation
Site-to-site VPN allows offices in multiple fixed locations to establish secure connections with each other over a public network such as the Internet. from site to site VPN means that two sites create a VPN tunnel by encrypting and sending data between two devices. A set of rules for creating a site-to-site VPN is defined by IPsec.

Question 67:
What type of wireless encryption is used for WPA2 in pre-shared key mode?

A. AES-128
B. TKIP with RC4
C. AES-256
D. RC4

Answer: A.

Explanation
WPA 2 implements the Advanced Encryption Standard (AES) encryption algorithm recommended by the National Institute of Standards and Technology (NIST) with the use of Counter Mode with Cipher Block Chaining Message Authentication Code Protocol (CCMP). AES Counter Mode is a block cipher that encrypts data blocks of 128 bits at a time with a 128 bit encryption key. The CCMP algorithm generates a message integrity code (MIC) for the wireless frame that provides data source authentication and data integrity.

Question 68:
What security program element involves installing badge readers on data center doors to allow employees to enter and exit based on their job description?

A. physical access control
B. biometrics
C. role-based access control
D. multi factor authentication

Answer: A.

Explanation
Physical access control systems (PACS) are a type of physical security designed to restrict or allow access to a particular area or building. Examples of physical access control of credentials include key fobs and keycard entry systems, encrypted badges, mobile credentials, PIN codes and passwords.

Question 69:
Which command prevents passwords from being stored in plain text on a router or switch?

A. enable secret
B. enable password
C. service password-encryption
D. username cisco password encrypt

Answer: C.

Explanation
service password-encryption - For all passwords stored in plain text in the configuration, this command changes them to be stored as hashes.

Question 70:
In what way does a system administrator reduce the likelihood of user passwords being stolen? (Choose two.)

A. Encourages users to create stronger passwords
B. Uses a built-in firewall to protect the password store from unauthorized access
C. Stores password storage on local workstation with built-in antivirus and anti malware functionality

D. Automatically provides a second authentication factor unknown to the original user
E. Protects against keystroke logging on a compromised device or website

Answer: A, E.

Explanation
It encourages users to create stronger passwords, and the "compromised" device here is the website the user needs to log in to. Protects against password theft by preventing logging of keystrokes.

Question 71:
What could be targeted using private IPv4 addressing on a network?

A. Provides an additional level of protection against Internet exposure
B. Provides a reduction in the size of the routing table in network routers
C. Allows communication with other private networks over the Internet
D. allows servers and workstations to communicate across public network boundaries

Answer: A.

Explanation
By default, we only use one Default Route to traverse the Internet, so it provides additional protection against attacks from the Internet.

Question 72:
What type of attack does the Dynamic ARP feature reduce?

A. DDoS
B. malware
C. man-in-the-middle
D. worm

Answer: C.

Explanation

Dynamic ARP inspection (DAI) is a security feature that rejects invalid and malicious ARP packets. This feature prevents man-in-the-middle attacks where a non-hostile station cuts off traffic for other stations by poisoning the ARP caches of its unsuspecting neighbors.

Question 73:
What is the function of a VPN when accessing a corporate network remotely?

A. establishes a secure tunnel between two branch sites
B. uses cryptographic tunneling to protect the privacy of data for multiple users simultaneously
C. uses exclusively when a user is connected to a company's internal network
D. allows the users to access company internal network resources through a secure tunnel

Answer: D.

Explanation
VPN means "Virtual Private Network" and can be used throughout public networks without being connected. VPN tools hide your belongings, passwords and identity from the internet. It becomes difficult to track and display your movements from the display settings. Encryption in real time.

Question 74:
An organization has decided to migrate their systems to cloud technology. Which cloud service enables the organization to install its own operating system on a virtual machine?

A. platform-as-a-service
B. network-as-a-service
C. software-as-a-service
D. infrastructure-as-a-service

Answer: D.

Explanation

IaaS (Infrastructure as a Service): Self-service models for accessing, monitoring and managing remote data center infrastructures such as compute (virtualized or bare metal), storage, networking, and network services (e.g. firewalls). Instead of purchasing hardware directly, users can purchase IaaS based on consumption, similar to their electricity or other utility bills. In general, IaaS provides hardware so that an organization can install its own operating system.

Question 75:
A network technician wants to configure SSH for remote access to his Router router. For configuration, it is requested to use a public and private key pair to encrypt management traffic to and from the connecting client. What configuration requirements does it meet?

A. Router#enable Router#configure terminal Router(config)#ip domain-name cisco.com Router(config)#crypto key generate ec keysize 1024
B. Router#enable Router#configure terminal Router(config)#ip domain-name cisco.com Router(config)#crypto key generate ec keysize 2048
C. Router#enable Router#configure terminal Router(config)#ip domain-name cisco.com Router(config)#crypto key encrypt rsa name myKey
D. Router#enable Router#configure terminal Router(config)#ip domain-name cisco.com Router(config)#crypto key generate rsa modulus 1024

Answer: D.

Explanation
modulus modulus-size, By default, the modulus of a certification authority (CA) key is 1024 bits. The recommended modulus for a CA key is 2048 bits. The range of a CA key modulus is from 350 to 4096 bits

Question 76:
What is the role of the DHCP snooping process?

A. listens to multicast traffic for packet forwarding
B. rate-limits certain traffic
C. propagates VLAN information between switches
D. provides DDoS mitigation

Answer: B.

Explanation
Step 1. Enable DHCP snooping by using the "ip dhcp snooping" global configuration command. Step 2. On trusted ports, use the "ip dhcp snooping trust" interface configuration command. Step 3. Limit the number of DHCP discovery messages that can be received per second on untrusted ports by using the "ip dhcp snooping limit rate (rate in secs)" interface configuration command. Step 4. Enable DHCP snooping by VLAN, or by a range of VLANs, by using the "ip dhcp snooping vlan (vlan or vlan range)" global configuration command.

Question 77:
What are the southbound APIs? (Choose two.)

A. Savings
B. DSC
C. SOUP
D. NETCONF
E. Open Flow

Answer: D, E.

Explanation
OpenFlow is a well-known southbound API. OpenFlow defines how the SDN Controller should interact with the routing plane to make adjustments to the network so that it can better adapt to changing business needs. Network Configuration Protocol (NetConf) uses Extensible Markup Language (XML) to load, modify, and delete configuration on network devices. Other southbound APIs are: onePK: a Cisco proprietary SBI for examining or modifying network element configuration without hardware upgrades. OpFlex: an open standard, distributed control system. Sends digest policy to network items.

Question 78:

What distinguishes Cisco DNA Center from traditional network management applications and management of networks?

A. Its modular design allows someone to implement different versions to meet the specific needs of an organization.
B. It only supports auto-discovery of network elements in a greenfield deployment.
C. It does not support high availability of management functions when operating in cluster mode.
D. It abstracts policy from the actual device configuration.

Answer: D.

Explanation
Automation: Using controllers and open APIs, Cisco DNA simplifies network management through abstraction and centralized policy enforcement that allows IT to focus on business purpose and consistently enforce configurations to improve service and keep operations secure from core to end in a consistent manner.

Question 79:
What type of API allows SDN controllers to make changes to the network dynamically?

A. northbound API
B. REST API
C. SOAP API
D. Southbound API

Answer: D.

Explanation
Software-defined southbound application program interfaces (SDN southbound APIs) are used to communicate between the SDN Controller and the network's switches and routers. They can be open source or proprietary.

Question 80:

What benefits does controller-based networking offer compared to traditional networking?

A. allows configuration and monitoring of the network from one centralized point
B. provides an added layer of security to protect from DDoS attacks
C. combines control and data plane functionality on a single device to minimize latency
D. moves from a two-tier to a three-tier network architecture to provide maximum redundancy

Answer: A.

Explanation
It allows the network to be configured and monitored from a single central point.

Question 81:
What advantage does the Cisco DNA Center platform have over traditional campus device management?

A. It is designed primarily to provide network assurance.
B. It supports numerous extensibility options, including cross-domain adapters and third-party SDKs.
C. It supports high availability for management functions when operating in cluster mode.
D. It enables easy auto discovery of network elements in a brownfield deployment.

Answer: B.

Explanation
It supports numerous extensibility options, including cross-domain adapters and third-party SDKs.

Question 82:
Which is the definition of API?

A. a contract that describes how the various components communicate and exchange data with each other
B. an architectural style (versus a protocol) for designing applications
C. a stateless client-server model
D. Request a specific data type by specifying the URL path that models the data

Answer: A.

Explanation
An API is a set of definitions and protocols for building and integrating applications. It is sometimes referred to as a contract between an information provider and an information user, which specifies the content requested from the consumer (call) and the content required by the producer (response).

Question 83:
How can Cisco DNA Center collect data from its network?

A. Devices use the call-home protocol to periodically send data to the controller
B. Devices establish an IPsec tunnel to exchange data with the controller
C. The Cisco CLI Analyzer tool gathers data from each licensed network device and streams it to the controller
D. Network devices use different services like SNMP, syslog, and streaming telemetry to send data to the controller

Answer: D.

Explanation
LAN Telemetry: Cisco DNA Center collects data from several different sources and protocols on the local network, including: traceroute; system log; net flow; Authentication, Authorization and Accounting (AAA); routers; Dynamic Host Configuration Protocol (DHCP); telnet; Wireless devices; Command Line Interface (CLI); Object IDs (OIDs); IP SLA; DNS; ping; Simple Network Management Protocol (SNMP); IP Address Management (IPAM); MIB; Cisco Connected Mobile Experiences (CMX);

and AppDynamics ®. The breadth and depth of big data collection allows Cisco DNA Center to provide a clearer picture of the state of the network, clients, and applications. This data is held locally (where you are) on the Cisco DNA Center device and is available for a period of 14 days. LAN Telemetry is not moved to another server or sent to the cloud.

Question 84:
Which data type in the JSON programming language is an unordered set of attribute-value pairs?

A. string
B. array
C. Boolean
D. object

Answer: D.

Explanation
An object is an unordered set of name/value pairs. An object starts with {left brace and ends with }right brace. Each name is followed by a :colon, and name/value pairs are separated by commas.

Question 85:
What feature of Cisco DNA Center makes it extensible? (Choose two.)

A. REST APIs that allow external applications to natively interact with Cisco DNA Center
B. Adapters that support all families of Cisco lOS software
C. SDKs that support interaction with third-party network equipment
D. modular design that can be upgraded as needed
E. Customized versions for small, medium and large businesses

Answer: A, C.

Explanation
Cisco DNA Center offers 360-degree expandability through four different types of platform features: Purpose-based APIs leverage the controller and enable business and IT applications to present purpose to the network and

gather network analytics and insights. Process adapters built on integration APIs allow integration with other IT and network systems to streamline IT operations and processes. Domain adapters built on integration APIs allow integration with other infrastructure domains such as data center, WAN, and security to provide a consistent purpose-built infrastructure across the entire IT environment. SDKs allow management to be extended to third-party vendor's network devices to offer support for different environments.

Question 86:
Which of the following is true about JSON?

A. uses predefined tags or angle brackets o to delimit markup text
B. used to describe structured data containing arrays
C. used to store information
D. Similar to HTML more verbose than XML

Answer: B.

Explanation
JSON data is written as name/value pairs. A name/value pair consists of a field name (in double quotes), followed by a colon, and then a value:Name:Mark It can use JSON arrays. Array values must be of type string, number, object, array, boolean, or null.

Question 87:
Which in the JSON programming language is used as the encoding of the dictionary or hash?

A. {key:value}
B. [key, value]
C. {key, value}
D. (key:value)

Answer: A.

Explanation
{key:value}

Question 88:
What role does a hypervisor provide for virtual machines in server virtualization?

A. infrastructure-as-a-service
B. Software-as-a-service
C. control and distribution of physical resources
D. services as a hardware controller

Answer: C.

Explanation
The hypervisor creates and manages virtual machines on a host and allocates physical system resources to them.

Question 89:
Which of Create, Read, Update, Delete changes an existing table or view?

A. read
B. update
C. replace
D. create

Answer: B.

Explanation
Update (SQL UPDATE): PUT - Update a resource using a full representation. It can also be used to create resources. The full representation requirement is a big caveat, see below.

Question 90:
In software-defined architectures, what is the name of the plane responsible for distribution and forwarding of traffic?

A. management plane
B. policy plane
C. data plane
D. control plane

Answer: C.

Explanation
Network devices operate on two planes; data plane and control plane. The control plane maintains the Layer 2 and Layer 3 forwarding mechanisms using the CPU. The data plane transmits traffic flows.

Question 91:
Which uses HTTP messages to transfer data from applications located on different computers?

A. OpenStack
B. OpFIex
C. RESTful
D. OpenFlow

Answer: C.

Explanation
RESTful API is an architectural style for an application programming interface (API) that uses HTTP requests to access and use data. This data can be used for data types GET, PUT, POST and DELETE, which means reading, updating, creating and deleting operations related to resources

Question 92:
What protocol is used in Software Defined Access (SDA) to create a tunnel between two end nodes of different natures?

A. General Router Encapsulation (GRE)
B. Virtual Local Area Network (VLAN)
C. Virtual Extensible LAN (VXLAN)
D. Point-to-Point Protocol (PPP)

Answer: C.

Explanation

The SD(Cisco® Software-Defined Access)-Access fabric uses the VXLAN data plane to transmit the full original Layer 2 frame, and also uses LISP as the control plane to resolve from end-to-end (EID to RLOC). The SD-Access fabric replaces sixteen (16) of the reserved bits in the VXLAN header to carry up to 64,000 SGTs using a modified VXLAN-GPO (sometimes called VXLAN-GBP).

Question 93:
What is the aaa new model configuration command used for?
Enables AAA services on the device.
Configures the device to connect to a RADIUS server for AAA.
Associates a RADIUS server with the group.
Configures a local user on the device.

Answer: A.

Explanation
To enable AAA, you must configure the aaa new model command in the global configuration.

Question 94:
According to the configuration in the picture, if packets from an unknown Source address arrive after the interface has learned the maximum number of secure MAC addresses, what event will occur on the interface? (Choose two.)

```
Port Security     : Enabled
Port Status       : Secure-up
Violation Mode : Protect
Aging Time        : 0 mins
Aging Type        : Absolute
SecureStatic Address     : 6
Total MAC Address        :5
Configured MAC Address:1
Sticky MAC Address       :3
Last Source Address Vlan: A512:B3C7:1234:2
Security Vioaltion Count: 0
```

A. The security violation counter does not increment
B. The port LED turns off
C. The interface is error-disabled
D. A syslog message is generated
E. The interface drops traffic from unknown MAC address

Answer: A, E.

Explanation
protection—drops packets with unknown source addresses until you remove enough secure MAC addresses to drop below the maximum value. restrict—drops packets with unknown source addresses until you remove enough secure MAC addresses to drop below the maximum value and cause the SecurityViolation counter to increase. shutdown—Immediately disables the interface and sends an SNMP trap notification.

Question 95:

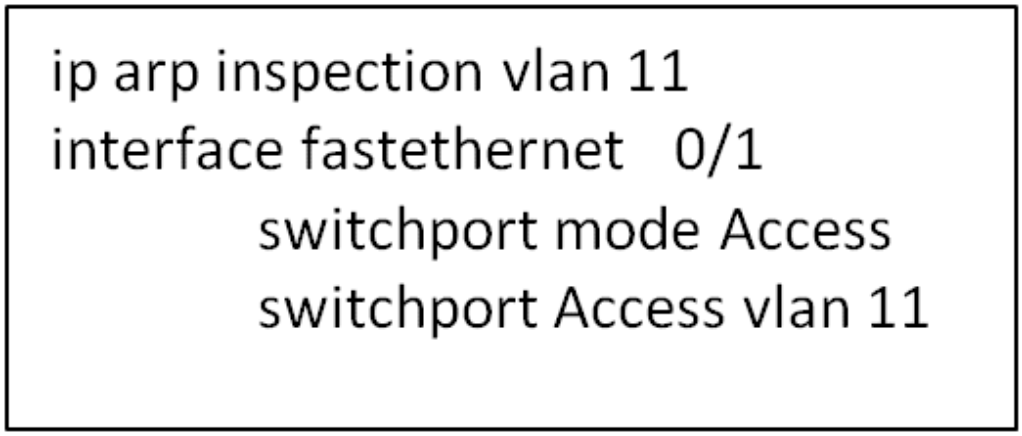
What technology should be applied to configure network device monitoring with the highest security?

A. IP SLA
B. syslog
C. NetFlow
D. SNMPv3

Answer: C.

Explanation
Network Monitoring: Businesses and users can use flow-based analysis techniques with NetFlow to visualize traffic patterns across the entire network. With this comprehensive view of traffic flow, network operations (NetOps) and security operations (SecOps) teams can monitor when and how often users access an application on the network. In addition, teams can use NetFlow data to monitor and profile a user's use of network and application resources to detect potential security or policy violations.

Question 96:
What is the effect of the configuration in the picture?



A. The switch port remains administratively down until the interface is connected to another switch.
B. Dynamic ARP Inspection is disabled because the ARP ACL is missing.
C. The switch port interface trust state becomes untrusted.

D. The switch port remains down until it is configured to trust or untrust incoming packets.

Answer: C.

Explanation
Dynamic ARP inspection (DAI) is a security feature that verifies ARP packets on a network. Captures, logs, and discards ARP packets with invalid IP-MAC address bindings. This ability protects the network from certain man-in-the-middle attacks. After enabling DAI, all ports become untrusted ports.

Question 97:
A company secures its network with multi-factor authentication using an authenticator app on employee smartphones. How to ensure the security of the application in case a company employee's smartphone is lost or stolen?

A. The application requires the user to enter a PIN before it provides the second factor
B. The application requires an administrator password to restart after a configured interval
C. The application verifies that the user is in a specific location before it provides the second factor
D. The application challenges a user by requiring an administrator password to restart when the smartphone is rebooted

Answer: A.

Explanation
In the question, the company uses multi-factor authentication. In this case, if the user loses or steals the phone, multi-factor authentication components will be used and it will not be possible to log in without a PIN code.

Question 98:
What command sequence can you enter to create VLAN 10 and assign it to an interface on a switch?

A. Switch(config)#vlan 10 Switch(config)#lnterface gig x/y Switch(config-if)#switchport access vlan 10
B. Switch(config)#lnterface gig x/y Switch(config-if)#vlan 10 Switch(config-vlan)#switchport access vlan 10
C. Switch(config)#vlan 10 Switch (config)#lnterface vlan 10 Switch(config-if)#switchport trunk native vlan 10
D. Switch(config)#vlan 10 Switch(config)#lnterface vlan 10 Switch(config-if)#switchport access vlan 10

Answer: A

Explanation
To create a VLAN on a Cisco Switch, enter the global configuration mode, execute the vlan 10 command. This will create VLAN 10 on the Switch. The next step is to assign an interface to this VLAN. Enter the interface you want and it will assign this interface to VLAN 10 using switchport access vlan 10 command.

Question 99:
What technology can enable multiple VLANs to communicate with each other?

A. intra-VLAN routing using a Layer 3 switch
B. inter-VLAN routing using a Layer 3 switch
C. inter-VLAN routing using a Layer 2 switch
D. intra-VLAN routing using router on a stick

Answer: B.

Explanation
VLANs fragment broadcast domains, routing must be available through a Router or Layer 3 Switch for hosts in one VLAN to communicate with hosts in a different VLAN. This is about router configuration on stick.

Question 100:
What command can you enter to view the ports assigned to VLAN 11?

A. Sw1#show ip interface brief

B. Sw1#show interface vlan 11
C. Sw1#show ip interface vlan 11
D. Sw1#show vlan id 11

Answer: D.

Explanation
When show vlan id 11 is used, the output will show the VLAN (11) and which ports are currently assigned to this vlan.

Chapter 5: CCNA Bonus Tests

5.1 CCNA 200-301 Bonus Test 1

Question 1:
You have run several debugs on your router and need to turn them all off. Which command will achieve this?

A. Undebug all
B. No debug
C. No debug all
D. Cancel debug all

Answer: A.

Question 2:
Which command will add a public DNS server to your router config?

A. Name server 4.2.2.2
B. Ip name 4.2.2.2
C. Ip name-server 4.2.2.2
D. Ip dns-server 4.2.2.2

Answer: C.

Question 3:
When a ping command is issued, an _____ echo request is sent to the destination.

A. IGRP
B. ICMP
C. TCP
D. UDP

Answer: B.

Question 4:

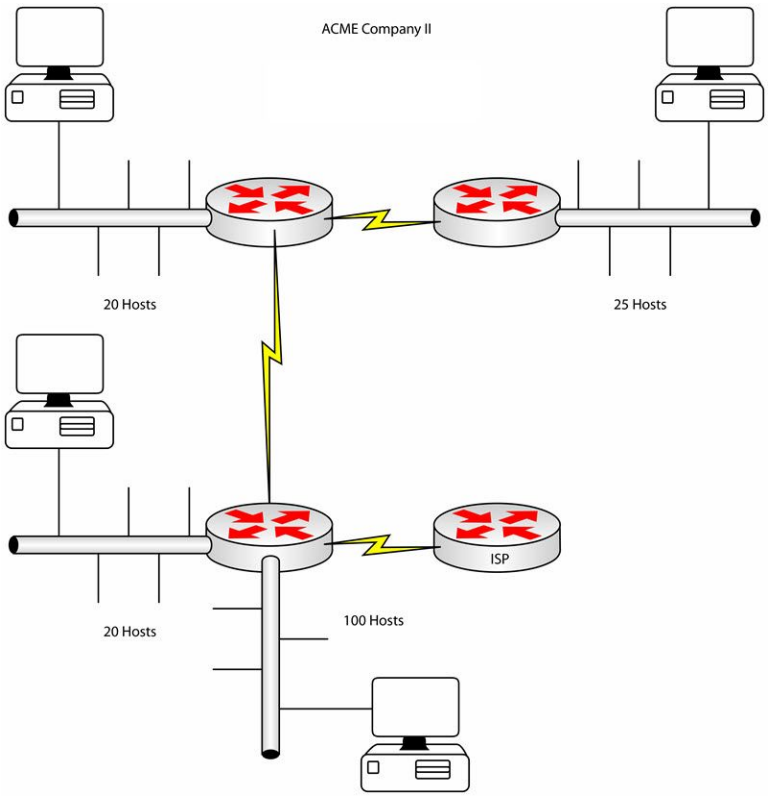
You issue a 'show arp' command on your router and see that your hosts all have the same exit interface. How can this be?

```
Router#show arp
Protocol  Address          Age (min)  Hardware Addr   Type   Interface
Internet  192.168.1.1            -   0060.5C67.B901  ARPA   FastEthernet0/0
Internet  192.168.1.2            0   0009.7C21.6090  ARPA   FastEthernet0/0
Internet  192.168.1.3            0   0001.63BB.3E60  ARPA   FastEthernet0/0
Internet  192.168.1.4            0   0001.6409.33A6  ARPA   FastEthernet0/0
Router#
```

A. The router is connected to a DHCP server
B. The router is connected to a server
C. The router is connected to a switch
D. The ARP cache needs clearing out

Answer: C.

Question 5:
Your boss hands you the below network diagram. He asks you what is the best subnet mask to apply to the WAN links so there is zero waste of host addresses. What do you tell her?



A. /27

B. /28
C. /30
D. /29

Answer: C.

Explanation
/30 gives you 2 hosts per subnet. Ideal for WAN links.

Question 6:
Without using ARP, a router running IPv6 can discover the layer 2 address of connected devices using Neighbor Discovery Protocol (NDP)

A. False
B. True

Answer: B.

Question 7:
Using layer 2 switches to create fewer users per segment is known as?

A. macro division
B. microsegmentation
C. macro segmentation
D. micro division

Answer: B.

Question 8:
You need to disable LLDP globally on your router. Which command do you use?

A. lldp disable
B. disabled IIdp all
C. no lldp all
D. no lldp run

Answer: D.

Question 9:
After all the data is sent between the two hosts, the session can be closed. Host sends a segment with the _____ bit set, letting the other host know that it wants to end the TCP session.

A. SYN
B. RST
C. FIN
D. ACK

Answer: C.

Question 10:
Your boss hands you the below list of subnets and asks you to work out which summary route you can advertise. What do you tell him?
192.168.100.128/27
192.168.100.160/27
192.168.100.192/27
192.168.100.224/27

A. 192.168.100.128/26
B. 192.168.0.0/24
C. 192.168.100.128/24
D. 192.168.100.1/25
E. 192.168.100.128/25

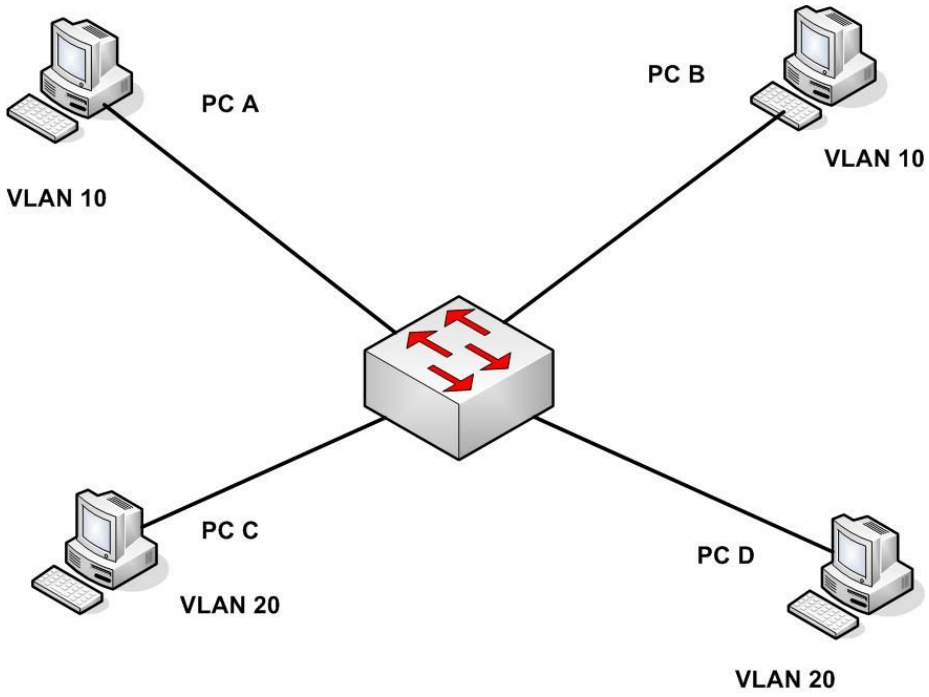
Answer: E.

Question 11:
Which OSI layer "Establishes end-to-end connection; uses virtual circuits, buffering,windowing, and flow control." ?

A. Transport
B. Data Link
C. Session
D. Application

Answer: A.

Question 12:
In reference to the diagram. A frame sent from the switch to PC A collides with a frame leaving PC A. Which devices receive the collided/damaged frame?



A. PC B
B. PC D
C. PC C
D. All of them
E. None of them.

Answer: E.

Explanation
Each port is a collision domain so the frame won't pass through the port. Full duplex actually negates the chances of a frame colliding in modern networks.

Question 13:

Your boss asks you why there is a dash instead of a minute number value in the ARP table for address 192.168.1.1. What do you tell them?

```
Router>en
Router#show arp
Protocol  Address          Age (min)  Hardware Addr   Type   Interface
Internet  192.168.1.1            -   0060.5C67.B901  ARPA   FastEthernet0/0
Internet  192.168.1.2          164   0009.7C21.6090  ARPA   FastEthernet0/0
Internet  192.168.1.3          164   0001.63BB.3E60  ARPA   FastEthernet0/0
Internet  192.168.1.4          163   0001.6409.33A6  ARPA   FastEthernet0/0
Router#
```

A. That interface is directly attached so won't age out
B. That device has aged out
C. That device is connected to a switch
D. That device is behind a firewall

Answer: A.

Question 14:
Your network switch has failed. As an emergency, which cable type can you use to connect router to router?

A. Rollover
B. Crossover
C. USB A to USB B
D. Straight through

Answer: B.

Question 15:
All IPv6 routers must join the all-hosts multicast group of _____ and the all-routers multicast group of _____.

A. FF02::10
B. FF02::5
C. FF02::1
D. FF02::2

Answer: C, D.

Question 16:

Your boss hands you a design for subnet 192.168.1.0 /27. What is true about this? (choose all that apply)

A. 8 subnets
B. 16 subnets
C. 30 hosts per subnet
D. 4 subnets
E. 60 hosts per subnet
F. 62 hosts per subnet
G. 32 hosts per subnet

Answer: A, C.

Question 17:
Which UDP port(s) does SNMP use? (choose all which apply)

A. 162
B. 164
C. 161
D. 163

Answer: A, C.

Question 18:
Which of the following is true about network switches.

A. They can store frames in buffer memory to be forwarded when the wire is clear
B. They build a table mapping MAC addresses to port numbers
C. Each port is a broadcast domain
D. Each port is a collision domain

Answer: A, B, D.

Explanation
Every port on the switch is in the same broadcast domain but isn't a broadcast domain in itself.

Question 19:

Data at the OSI Transport layer is referred to as?

A. Packets
B. Frames
C. Segments
D. Bits
E. Data

Answer: C.

Question 20:
You enable IPv6 EUI-64 addressing on the interface below. What IPv6 address is created?

FastEthernet0/0 is up, line protocol is down
Hardware is Gt96k FE, address is 0011.aabb.ccdd (bia 0011.aabb.ccdd)
Router(config)# interface f0/0
Router(config-if)#ipv6 address 2001:aa::/64 eui-64

A. 2001:AAAA::211:AAFF:FEBB:CCDD
B. 2001:AA::211:AAFF:FEBB:CCDD
C. 2001:AA::201:AAFF:FEBB:CCDD
D. 2001:AA::211:AAFF:FFBB:CCDD

Answer: B.

Question 21:
The OSI data link layer consists of which two sub-layers?

A. MAC
B. PPP
C. UDP
D. RPC
E. LLC

Answer: A, E.

Question 22:

LLDP is enabled by default on Cisco routers. You need to add IP addresses in order for it to work.

A. True
B. False

Answer: B.

Explanation
You need to enable LLDP on all devices and 'no shut' any interfaces; there is no need to add any IP addresses because LLDP runs at Layer 2.

Question 23:
Tick the three layers of the Cisco network design model.

A. Core
B. Internet
C. Access
D. Network
E. Distribution

Answer: A, C, E.

Question 24:
Data at the OSI Network layer is referred to as?

A. Packets
B. Frames
C. Bits
D. Data

Answer: A.

Question 25:
Your colleague asks you what the rules are for IPv6 link-local addressing. What do you tell her?

A. Link-local addresses are assigned from the FE80::/10 prefix
B. Link-local addresses are assigned from the FEF0::/10 prefix
C. Link-local addresses are assigned from the FEFE::/10 prefix

D. Link-local addresses are assigned from the FE80::/12 prefix

Answer: A.

Question 26:
You need to convert hex value F to decimal and binary. Which values do you choose? (choose two)

A. 15 in decimal
B. 14 in decimal
C. 1111 in binary
D. 1011 in binary
E. 14 in decimal
F. 1110 in binary

Answer: A, C.

Question 27:
Binary value: 1110. What is decimal and hex? (choose two)

A. 15 in decimal
B. 14 in decimal
C. E in hex
D. D in hex

Answer: B, C.

Question 28:
Which 802 standard refers to wireless networking?

A. 802.8
B. 802.9
C. 802.11
D. 802.10

Answer: C.

Question 29:
The CSMA/CD does what if a collision is detected on the wire?

A. Deletes the frame
B. Alters the frame size
C. Retransmits the frame
D. Sends a jamming signal

Answer: D.

Explanation
1. The device wanting to transmit a frame listens for a carrier signal on the wire. No signal means that it is clear to send the frame.
2. The frame is put onto the wire.
3. The sending device listens to discover whether a collision has occurred.
4. If there was a collision, all sending devices send a jamming signal to announce the fact that there was a collision.
5. A random timer runs and no frames can be sent by the original devices until it expires.
6. The device starts back at step 1.

Question 30:
Which command will produce the output in the figure?

```
-------------------------
Device ID: R2.lab.local
Entry address(es):
  IP address: 192.168.1.2
Platform: Cisco 3725, Capabilities: Router Switch IGMP
Interface: FastEthernet0/0, Port ID (outgoing port): FastEthernet0/0
Holdtime: 161 sec
Version:
Cisco IOS Software, 3700 Software (C3725-ADVENTERPRISEK9-M), Version
15.1(15)T7, RELEASE SOFTWARE (fc3)
advertisement version: 2
VTP Management Domain: ‘’
Duplex: half
```

A. show cdp neighbor
B. show neighbor detail cdp
C. show cdp neighbor detail
D. show cdp all

Answer: C.

Question 31:
You suspect that there is an issue with ARP traffic on your network. Which command will debug ARP on your router?

A. debug ip arp
B. debug tcp arp
C. debug arp
D. debug udp arp

Answer: C.

Question 32:
These are sent in response to IPv6 Neighbor Solicitation (NS) messages.

A. Router Advertisement (RA)
B. Router Solicitation (RS)
C. Neighbor Advertisement (NA)
D. Redirects

Answer: C.

Question 33:
Your colleague has typed a line of configuration on the router. He asks you which shortcut he can use to move to the beginning of the line.

A. Shift+A
B. Shift+P
C. Control+A
D. Control+B

Answer: C.

Question 34:
Your boss asks you how to flush the ARP table on his router. What do you tell him?

A. clear arp-cache
B. reload the router is the only way
C. flush arp

D. erase arp

Answer: A.

Explanation
or 'clear arp' for short

Question 35:
Proxy ARP is turned on in Cisco routers by default.

A. False
B. True

Answer: B.

Question 36:
IPv6 multicast addresses are assigned from the _____ IPv6 prefix

A. FF00::/8
B. F000::/8
C. FFEE::/8
D. FE00::/8

Answer: A.

Question 37:
You have an IP address 192.168.1.1/24 allocated to an interface. Your boss tells you to allocate a secondary IP address to it for testing purposes. Which command do you apply?

A. Router(config-if)#secondary ip address 192.168.2.1 255.255.255.0 secondary
B. Router(config-if-sec)#ip address 192.168.2.1 255.255.255.0
C. Router(config-if)#ip address 192.168.2.1 255.255.255.0 secondary
D. Router(config-if)#ip address 192.168.2.1 255.255.255.0
E. This can't be done. Only one IP address per interface.

Answer: C.

Explanation
You can assign an unlimited number of addresses using the ip address [ip address] [subnet mask] secondary command.

Question 38:
You need to ping the IPv6 loopback address from your PC. Which address do you ping?

A. ::1
B. 127:0:0:1
C. ::127:0:0:1
D. 127:0:0:1::1

Answer: A.

Question 39:
Your boss issues a ping command to a remote device and asks you what the ! character indicates. What do you say?

A. Packet blocked by firewall
B. Unreachable destination
C. Could not fragment packet
D. Successful ping

Answer: D.

Question 40:
You are asked to enter the bits per second (bps) for a console connection to a router. What setting do you use?

A. 19200
B. 1200
C. 3600
D. 9600

Answer: D.

Question 41:

Tick which of the below operate at the OSI Application Layer.

A. SMTP
B. SQL
C. Telnet
D. WWW
E. UDP

Answer: A, C, D.

Question 42:
What IPv6 messages are generated in order to request the data link address from another router and for Duplicate Address Detection (DAD).

A. Router Solicitation (RS)
B. Neighbor Solicitation (NS)
C. Router Advertisement (RA)
D. Neighbor Advertisement (NA)

Answer: B.

Question 43:
A UDP connection must start with a three-way handshake.

A. Only for frames larger than 1024 bits
B. True
C. False

Answer: C.

Explanation
UDP is connectionless. It numbers and sends packets but never forms a connection or checks for successful delivery.

Question 44:
10.0.0.0/24 generates how many hosts-per-subnet?

A. 126
B. 30

C. 254
D. 62

Answer: C.

Question 45:
You are handed network design 172.16.0.0 /19. What is true about this design?

A. 4094 hosts per subnet
B. 8 subnets
C. 16 subnets
D. 4 subnets
E. 8190 hosts per subnet
F. 32 subnets
G. 126 hosts per subnet
H. 30 hosts per subnet

Answer: B, E.

Question 46:
If the receiver is sent more information than it can process, it will ask the sender to stop for a short while. An example of when this can occur is when both sides are using different speeds (e.g., one side is using broadband while the other is using a dial-up modem). This is an example of TCP?

A. Buffering
B. Flow control
C. Acknowledgement
D. Windowing

Answer: B.

Question 47:
You are shown a design sheet with subnet 192.168.200.0 /29. You are then given host addresses 192.168.200.17 - 192.168.200.22. Which subnet are these hosts from?

A. 1st
B. 5th
C. 4th
D. 2nd
E. 3rd
F. 6th

Answer: E.

Question 48:
_____ are messages indicating the successful receipt of TCP segments. If a sender does not receive acknowledgments for the segments sent after a certain period, then it knows there is something wrong.

A. Synchronizations
B. Buffers
C. Resets
D. Acknowledgments

Answer: D.

Question 49:
Which protocol/service uses TCP port 110.

A. SMTP
B. SNMP
C. ICMP
D. POP3

Answer: D.

Question 50:
The first three bits of a Class C IP address in binary are always?

A. 101
B. 1110
C. 110
D. 011

Answer: C.

Question 51:
The binary value 11111000 is what in decimal?

A. 240
B. 192
C. 248
D. 252

Answer: C.

Question 52:
Your colleague is trying to configure IPv6 but has forgotten how to enable IPv6 routing on the router. Which command will do this?

A. R1(config)#ipv6 unicast
B. R1(config)#ipv6 enable
C. R1(config)#ipv6 routing
D. R1(config)#ipv6 unicast-routing

Answer: D.

Question 53:
Your colleague is counting up in hex. What is the next value? 0 1 2 3 4 5 6 7 8 9 A B C D E F __ ?

A. 11
B. G
C. 10
D. 1A

Answer: C.

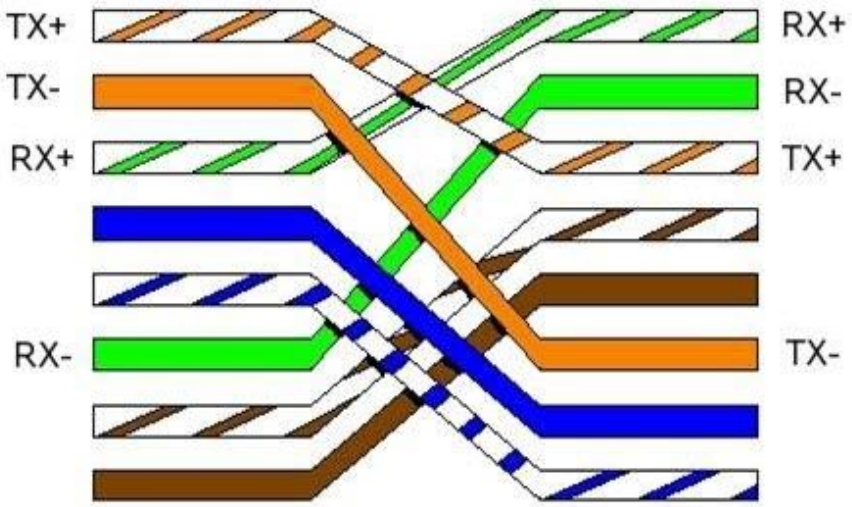
Question 54:
Your boss asks you to run a debug on FTP traffic on your router. Which command do you use?

A. debug udp ftp

B. debug ip ftp
C. debug ftp
D. debug tcp ftp

Answer: B.

Question 55:
Which sort of cable does the image represent?



A. Straight through
B. Rollover
C. Crossover
D. Trunk

Answer: C.

Question 56:
Changing the configuration register to _____ tells the router to ignore it so that it will boot with a blank configuration.

A. 0x2111
B. 0x2142
C. 0x2122
D. 0x2102

Answer: B.

Question 57:
When a host needs to communicate with another host, it sends an ___ request for the MAC address of the host.

A. RST
B. UDP
C. ARP
D. TCP

Answer: C.

Question 58:
Your boss gives you subnet 172.16.0.0. He asks you what subnet mask you need to apply in order to generate 16 subnets with 4094 hosts-per-subnet

A. /18
B. /21
C. /17
D. /20
E. /19

Answer: D.

Question 59:
Your boss asks you to compress the IPv6 address 0000:0000:0000:0000:0000:0000:0000:00FF. What do you tell him?

A. 0::::ff
B. 0:0:0:0:0:0:0:00ff
C. 0:0:0:0:0:0:0:ff
D. ::ff

Answer: D.

Question 60:
You are given subnet 192.168.100.0 /26. Your boss tells you to use the host addresses from the second available subnet. Which host addresses

can you use?

A. 192.168.100.129 - 192.168.100.190
B. 192.168.100.65 - 192.168.100.126
C. 192.168.100.193 - 192.168.100.254
D. 192.168.100.1 - 192.168.100.62

Answer: B.

Question 61:
For secure communication, HTTP can be encrypted using Secure Sockets Layer (SSL) or Transport Layer Security (TLS). This secure HTTP (HTTPS) uses TCP port ___.

A. 22
B. 443
C. 166
D. 80

Answer: B.

Question 62:
The _____ protocol uses UDP to resolve hostnames mapped to IP addresses.

A. Reverse Address Resolution Protocol (RARP)
B. Domain Name System (DNS)
C. Gratuitous ARP (GARP)
D. Address Resolution Protocol (ARP)

Answer: B.

Question 63:
You are handed network design 10.0.0.0/9. Which subnets does this generate? (choose all that apply)

A. 10.0.0.0
B. 10.32.0.0
C. 10.224.0.0
D. 10.128.0.0

E. 10.64.0.0

Answer: A, D.

Question 64:
You need to quickly check that a remote device has all 7 layers of the OSI model working. Which command do you use?

A. show arp
B. ping
C. tracert
D. telnet

Answer: D.

Explanation
Telnet will test all 7 layers.

Question 65:
You are allocated 172.16.32.0 /19 and told to use this subnet for hosts on your subnet. Which range of host addresses can you use?

A. 172.16.128.1 - 172.16.159.254
B. 172.16.96.1 - 172.16.127.254
C. 172.16.32.1 - 172.16.195.254
D. 172.16.32.1 - 172.16.63.254
E. 172.16.32.1 - 172.16.127.254

Answer: D.

Question 66:
Your boss hands you IPv6 address 3FFF:1234:ABCD:0000:020C:CDFF:00A7:F3A0 and asks you to work out the compressed format. What do you tell him?

A. 3fff:1234:abcd:0:020c:cdff:a7:f3a0
B. 3fff:1234:abcd:00:020c:cdff:a7:f3a0
C. 3fff:1234:abcd::0:20c:cdff:a7:f3a
D. 3fff:1234:abcd::20c:cdff:a7:f3a0

Answer: D.

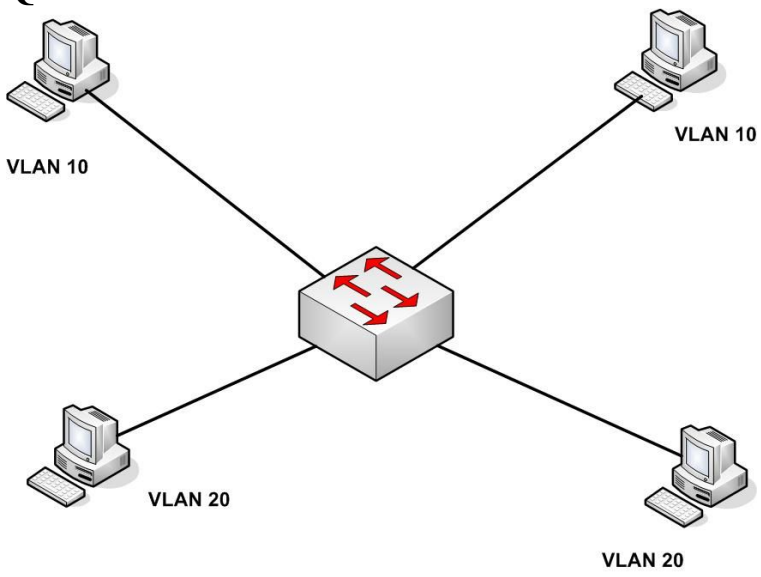
Question 67:
When a network hub receives a frame what action does it take?

A. Multicasts it out of the relevant ports
B. Forwards it out of all ports
C. Blocks it
D. Forwards it out of the correct port

Answer: B.

Explanation
Hubs contain no memory so simply forward frames out of all ports which have a device connected.

Question 68:



In reference to the image. Tick which is correct in respect to broadcast and collision domains.

A. 2 broadcast domains
B. 4 collision domains
C. 2 collision domains
D. 4 broadcast domains
E. 1 broadcast domain

F. 1 collision domain

Answer: A, B.

Explanation
Each device attached to a switch will be in a collision domain. Each VLAN creates a new broadcast domain.

Question 69:
You are handed subnet design 192.168.1.0/30. How many hosts-per-subnet will this permit?

A. 16
B. 2
C. 8
D. 4

Answer: B.

Question 70:
Your boss hands you a network design using 172.16.0.0 / 20. What is true about this? (choose all that apply)

A. Hosts in first subnet - 172.16.0.1 - 172.31.15.254
B. 1022 hosts per subnet
C. 16 available subnets
D. 1024 hosts per subnet
E. 4,096 hosts per subnet
F. Hosts in first subnet - 172.16.0.1 - 172.16.15.254
G. 4,094 hosts per subnet
H. 32 available subnets

Answer: C, F, G.

Question 71:
Regarding the Traceroute facility. At each hop, the TTL (time to live) is incremented and if it gets to 255, an ICMP error (time exceeded) message is sent back to the sender.

A. False
B. True

Answer: A.

Explanation
At each hop, the TTL is decremented and if it gets to 0, an ICMP error (time exceeded) message is sent back to the sender.

Question 72:
By default, routers do what with broadcast packets?

A. Stores them in a buffer
B. Converts them to multicast packets
C. Forwards them
D. Drops them

Answer: D.

Explanation
Routers will not forward broadcast packets but switches do.

Question 73:
The three-way TCP handshake is identified by which three packet types?

A. SYN ACK
B. RST ACK
C. ACK ACK
D. SYN
E. ACK SYN
F. ACK

Answer: A, D, F.

Question 74:
Which is true of Telnet?

A. UDP port 53

B. UDP port 23
C. TCP port 21
D. TCP port 23

Answer: D.

Question 75:
As a packet traverses the network, the source and destination MAC addresses will never change in the packet (unless NAT is in use). The IP address will have to change from hop to hop though.
A. True
B. False

Answer: B.

Explanation
As a packet traverses the network, the source and destination IP addresses will never change in the packet (unless NAT is in use). The MAC address will have to change from hop to hop though.

Question 76:
Traffic sent using Telnet is in clear text so it is insecure.
A. True
B. False

Answer: A.

Explanation
You should use SSH for secure remote connections.

Question 77:
Your boss wants to enable an IPv6 link-local address on an interface without adding an actual IPv6 address. Which command will achieve this?
A. R1(config-if)#ipv6 active
B. R1(config-if)#ipv6 unicast-routing

C. R1(config-if)#ipv6 address enable
D. R1(config-if)#ipv6 enable

Answer: D.

Question 78:
Tick which of the below operate at the OSI Session Layer.
A. TCP
B. NFS
C. Telnet
D. RPC
E. SQL

Answer: B, D, E.

Question 79:
Your colleague is planning on the network transition from IPv4 to IPv6. Which type of addresses do you tell him IPv6 supports? (choose all that apply)
A. Anycast
B. Multicast
C. Broadcast
D. Unicast
E. Loopback

Answer: A, B, D, E.

Explanation
Not all IPv6 address types are listed here.

Question 80:
Your boss asks you if there is a secure way to send traffic via FTP. What do you tell her to use?
A. SSL over HTTP
B. SSH File Transfer Protocol
C. MD5 with FTP

D. VTP with FTP

Answer: B.

Explanation
SFTP was devised by the Internet Engineering Task Force (IETF). SFTP provides the same service as FTP (i.e., file access, transfer, and management) but does so securely.

Question 81:
The ping service uses which protocol?

A. SMTP
B. IGMP
C. ICMP
D. SNMP

Answer: C.

Question 82:
You need the router to ping ip address 192.168.1.2 when you type 'ping routerb' at the command prompt. What do you type?

A. RouterA(config)#ip host 192.168.1.2 routerb
B. RouterA(config)#ip host 192.168.1.2 routerb
C. RouterA(config)#routerb ip host 192.168.1.2
D. RouterA(config)#ip host routerb 192.168.1.2

Answer: D.

5.2 CCNA 200-301 Bonus Test 2

Question 1:
You want to configure a switch port to permit mac address 0001.14ac.3298. Which commands will you need to apply? (choose all which apply)

A. Switch(config-if)#port-security
B. Switch(config-if)#switchport port-security
C. Switch(config-if)#switchport port-security 0001.14ac.3298
D. Switch(config-if)#switchport port-security mac-address 0001.14ac.3298
E. Switch(config)#switchport port-security

Answer: B, D.

Question 2:
You want the switch port to permit the first host connected to it and add the address to the running-configuration. Which command will achieve this?

A. switchport port-security sticky
B. switchport port-security address sticky
C. switchport port-security mac-address sticky
D. switchport port-security sticky mac-address

Answer: C.

Question 3:
Which command will permit only three hosts to connect to a switch port?

A. switchport port-security mac-address 3
B. switchport port-security 3
C. switchport port-security maximum 3
D. 3 addresses are always learned by default

Answer: C.

Question 4:
If you add any port security to a voice VLAN, you must enable at least ___ MAC addresses as a maximum.

A. 1
B. 2
C. 3
D. 4

Answer: B.

Explanation
One for the PC and one for the voice phone.

Question 5:
Which three options can a port configured with switch security take?

A. Protect the port
B. Reboot the port
C. Reboot the switch
D. Restrict the port
E. Shut down the port

Answer: A, D, E.

Question 6:
Which command will reveal the port security settings for the entire switch?

A. show security
B. show switchport-security
C. show port-security
D. show switchport port-security

Answer: C.

Question 7:

Your boss asks you to configure a switch port security to protect mode. Which command will achieve this?

A. Switch (config-if)#switchport port-security protect
B. Switch(config-if)#switchport port-security violation protect
C. Switch(config-if)#switchport port-security violation-mode protect
D. Switch(config-if)#switchport port-security mode protect

Answer: B.

Question 8:
Your boss asks you to configure the aging type on your port security settings. Which are the two options you need to ask her to choose from?

A. absolute
B. inactivity
C. max-frame
D. min-frame
E. active

Answer: A, B.

Question 9:
There has been a port security violation and the port is shut down. You see the below output but how do you recover the port?

Switch# show interface f0/10
FastEthernet0/10 is down, line protocol is down (err-disabled)

A. shut and then no shutdown the port
B. change the aging time to absolute
C. you have to reload the switch
D. you have to remove the offending mac address from the running configuration
E. you have to add the offending mac address to the running configuration

Answer: A.

Question 10:
Your boss tells you she has heard there is some way to automatically recover a port that has been shutdown due to a security violation. Which command is she thinking of?

A. errdisable recovery cause security-violation
B. errdisable recovery cause port-violation
C. errdisable recovery cause psecure-violation
D. there is no such command, you have to shut and no shut the port (bounce it)

Answer: C.

Question 11:
Which command will produce the output below?

```
Port Security: Enabled
Port status: SecureUp
Violation mode: Shutdown
Maximum MAC Addresses: 5
Total MAC Addresses: 5
Configured MAC Addresses: 3
Aging time: 20 mins
Aging type: Inactivity
SecureStatic address aging: Enabled
Security Violation count: 0
```

A. Switch#show interface FastEthernet0/1
B. Switch#show interface FastEthernet0/1 switchport-security
C. Switch#show port-security
D. Switch#show port-security interface FastEthernet0/1

Answer: D.

Question 12:
You keep seeing the below error message being printed on your screen. Which command will rectify this issue?

00:06:14: %CDP-4-DUPLEX_MISMATCH: duplex mismatch discovered on

FastEthernet0/11 (not full duplex), with Switch1 FastEthernet0/11 (full duplex).

A. full duplex
B. duplex full
C. duplex auto
D. auto duplex

Answer: B.

Question 13:
You need to check whether the correct ports are associated with the respective VLAN. Which command do you issue?

A. show vlan config
B. show interfaces vlan
C. show vlan
D. show vlan switchport

Answer: C.

Explanation
or 'show vlan brief'

Question 14:
A previous engineer has blocked VLAN 5 from passing your trunk link. Which command will rectify this?

A. switchport trunk allowed add 5
B. switchport trunk vlan add 5
C. switchport trunk allowed vlan add 5
D. switchport trunk vlan 5 add

Answer: C.

Question 15:
Which command will print a list of all your trunk interfaces as well as which VLANs are allowed to cross them?

A. show trunk

B. show interfaces trunk
C. show trunk vlan
D. show trunk switch port

Answer: B.

Question 16:
When using wireless bridging functionality in a point-to-point mode, the two buildings/areas must have line-of-sight.

A. True
B. False

Answer: A.

Question 17:
In WLAN environments, Access Points can perform which roles. (choose all that apply)

A. Mesh topologies
B. Perform dynamic trunking
C. Bridges
D. Repeaters

Answer: A, C, D.

Question 18:
Lightweight Access Points (LWAPs) focus solely on RF transmissions and real-time control operations, such as beaconing, probing, and buffering.

A. True
B. False

Answer: A.

Question 19:
Wireless Access points (APs) do not use CSMA/CD. Instead they use what?

A. Carrier Sense Multiple Access with Collision Prevention (CSMA/CP)
B. Carrier Sense Multiple Access with Collision Removal(CSMA/CR)
C. Carrier Sense Multiple Access with Collision Avoidance (CSMA/CA)
D. Carrier Sense Multiple Access with Collision Mitigation (CSMA/CM)

Answer: C.

Question 20:
Wireless access points can function as repeaters, accepting a weak RF signal, strengthening (amplifying) it, and resending it.

A. True
B. False

Answer: A.

Question 21:
Wireless access points come in which two varieties?

A. Standalone
B. Man-in-the-middle
C. Lightweight
D. Distribution
E. Core

Answer: A, C.

Question 22:
A very important advantage of wireless layer 3 inter-controller roaming is that users can maintain their original IP address.

A. False
B. True

Answer: B.

Question 23:
Wireless Inter-controller roaming can operate only in layer 2.

A. True
B. False

Answer: B.

Explanation
Wireless Inter-controller roaming can operate in either layer 2 or layer 3.

Question 24:
LAN switches perform which three main functions?
A. Preventing loops in the network
B. Authenticating users
C. Learning MAC addresses
D. Filtering and forwarding frames
E. Filtering packets
F. Buffering frames for sending when the line ¡s clear

Answer: A, C, D.

Question 25:
Switches store MAC addresses of hosts indefinitely or until it is reloaded.
A. True
B. False

Answer: B.

Explanation
The switch will store a table of MAC addresses for a limited amount of time. If no traffic is heard from that port for a predefined period of time, then the entry is purged from memory.

Question 26:
The command you would use to see the CAM table of a switch is?
A. show address table
B. show cam-table

C. show mac-address-table
D. show ip table L2
E. show mac

Answer: C.

Question 27:
Your boss asks you to flush the mac address table on your switch. Which command do you use?

A. Can only be done by reloading the switch
B. flush mac table
C. clear mac-address-table
D. clear mac address all

Answer: C.

Question 28:
Your boss asks you why more than one MAC address is associated with an interface on your switch. What do you tell her?

```
          Mac Address Table
-------------------------------------------
Vlan    Mac Address       Type        Ports
----    -----------       --------    -----
1       0001.42dd.eca1    DYNAMIC     Fa0/1
1       0050.0fde.8ca1    DYNAMIC     Fa0/3
1       0090.0c63.9e31    DYNAMIC     Fa0/2
1       00e0.a30e.1c04    DYNAMIC     Fa0/1
1       00e0.f9de.e036    DYNAMIC     Fa0/1
```

A. The switch needs to be reloaded
B. The mac address table should be flushed
C. That port has a secure VLAN attached
D. The port is a trunk port
E. There is a VLAN attack in progress

Answer: D.

Question 29:

This switching method is the fastest because the frame is only examined to determine its destination MAC address.

A. Cut-through
B. Store-and-forward
C. Fragment-free
D. None of the above

Answer: A.

Question 30:
This method reads the entire frame, copies it into a buffer, performs a cyclic redundancy check (CRC), then forwards the frames only if the check passes.

A. Cut-through
B. Store-and-forward
C. Fragment-free
D. None of the above

Answer: B.

Question 31:
This switching method examines the first 64 bytes of a frame for any errors, and if none are detected the frame is passed.

A. Cut-through
B. Store-and-forward
C. Fragment-free
D. None of the above

Answer: C.

Question 32:
By default, all ports on a switch are in VLAN 1 in the same broadcast domain, so it's up to you as the network administrator to configure more VLANs and add switch ports to them.

A. False
B. True

Answer: B.

Question 33:
Adding VLANs decreases the number of broadcast domains but increases the size of the domains.

A. True
B. False

Answer: B.

Explanation
Adding VLANs increases the number of broadcast domains but decreases the size of the domains.

Question 34:
Some VLANs are reserved and cannot be used. Tick which this applies to.

A. 1000
B. 1001
C. 1002
D. 1003
E. 1004
F. 1005

Answer: C, D ,E ,F.

Question 35:
A trunk link can also be used to carry traffic between. (choose all that apply)

A. Two switches
B. Switch to a router
C. Switch to a server
D. Switch to a hub
E. Switch to a PC

Answer: A, B, C.

Question 36:
All frames in the native VLAN (VLAN 1) are tagged by default. Other VLAN frames remain untagged.

A. True
B. False

Answer: B.

Explanation
All frames using 802.1Q are tagged with VLAN information. The exception to this is the native VLAN, which by default is VLAN 1. All frames inside the native VLAN remain untagged.

Question 37:
Your boss asks you if the native VLAN must match on either side of a trunk link in order for a trunk to form. What do you tell him?

A. They must match
B. There is no need for them to match

Answer: A.

Question 38:
Your colleague asks you what the minimum speed required on the interface is in order for a trunk link to form. What do you tell them?

A. 10 Mbps
B. 100 Mbps
C. 1 Mbps
D. 1000 Mbps

Answer: A.

Explanation
Some books insist on 100 Mbps but it can be done on a 10 Mbps link. Try it for yourself.

Question 39:
You issue a 'show interface f0/1 switchport' command on two connected switches (see below). They both have the same configuration. Will a trunk link form between them?

```
Switch#show interface f0/1 switchport
Name: Fa0/1
Switchport: Enabled
Administrative Mode: dynamic auto
```

A. Yes
B. No

Answer: B.

Explanation
dynamic auto is passive so no.

Question 40:
You issue a 'show interface switchport f0/1' on two switches and see the below output. Will a trunk form between them?

```
Switch#show int f0/1 switchport
Name: Fa0/1
Switchport: Enabled
Administrative Mode: dynamic desirable
```

A. Yes
B. No

Answer: A.

Explanation
Desirable will actively seek to become a trunk so as long as one side is thus a trunk will form.

Question 41:

You connect two switches together and add the below configuration to both. Will a trunk form between them?
Switch(config)#int f0/1
Switch(config-if)#switchport mode trunk
Switch(config-if)#switchport nonegotiate

A. Yes
B. No.

Answer: A.

Explanation
Both are manually set to trunk so yes. You have just turned off DTP messages.

Question 42:
Looking at the below output. Which commands have been added to the switch. (Tick all that apply).

```
Switch#show int f0/1 switchport
Name: Fa0/1
Switchport: Enabled
Administrative Mode: trunk
Operational Mode: trunk
Administrative Trunking Encapsulation: dot1q
Operational Trunking Encapsulation: dot1q
Negotiation of Trunking: Off
Access Mode VLAN: 1 (default)
Trunking Native Mode VLAN: 1 (default)
Voice VLAN: none
```

A. switchport mode trunk
B. switchport nonegotiate
C. switchport native vlan 1
D. switchport
E. switchport mode dynamic auto
F. switchport mode dynamic desirable

Answer: A, B.

Question 43:
Your boss shows you the below output and asks how you fix it. What do you tell him?

%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered on
FastEthernet0/1 (1), with Switch FastEthernet0/1 (10).

A. The local switch interface needs changing to VLAN 1 as the native VLAN.
B. The local switch interface needs changing to VLAN 10 as the native VLAN.
C. The remote switch interface needs changing to VLAN 10 as the native VLAN.
D. The remote switch interface needs changing to 'switchport nonegotiate'.
E. The remote switch interface needs changing to use DTR

Answer: B.

Explanation
The remote switch is using VLAN 10 so change the local switch interface to the same. I don't give the option of changing the remote switch to VLAN 1 but that would fix the error message also.

Question 44:
Which command will change the native VLAN on your switch to 100?
A. switchport trunk 100 native vlan
B. switchport trunk vlan 100 native
C. switchport trunk native vlan 100
D. native vlan 100 switchport

Answer: C.

Question 45:
Your boss is trying to configure switch port security settings but discovers he needs to enable switch port security first. Which command must he apply?

A. Switch(config)#switchport port-security
B. Switch(config-if)#switchport port-security
C. Switch(config-security)#switchport port-security
D. Switch#switchport port-security

Answer: B.

Question 46:
Wireless roaming can be divided into which two categories?

A. Intra-controller roaming
B. Hub-to-controller roaming
C. Inter-controller roaming (layer 2 or layer 3)
D. Random-switch roaming

Answer: A, C.

Question 47:
You need to print a list of the mac addresses learned by the switch dynamically (as opposed to any static entries. Which command will achieve this?

A. show mac address-table arp only
B. show mac address-table no static
C. show mac address-table dynamic
D. show mac address-table learned

Answer: C.

Question 48:
It's worth noting that the switch mac address table is composed of source MAC addresses and destination addresses.

A. True

B. False

Answer: B.

Explanation
Only the source. Destination address will often be a broadcast address.

Question 49:
Ideally, each VLAN should be in the same subnet to improve routing, conserve addresses and increase speed.

A. True
B. False

Answer: B.

Explanation
For the purposes of the CCNA exam and best practices, each VLAN should have its own network or subnet address.

Question 50:
The switch must tag the frame with the VLAN ID before forwarding it to the host.

A. True
B. False

Answer: B.

Explanation
The switch strips the tag of the VLAN ID frame at the destination before sending it on to the recipient host, so the process is transparent to the end device.

5.3 CCNA 200-301 Bonus Test 3

Question 1:
Bellman-Ford algorithms are used by which type of routing protocols?

A. Static
B. Distance vector
C. Link-state
D. Floating static

Answer: B.

Question 2:
RIP sends routing updates using?

A. UDP port 120
B. UDP port 110
C. TCP port 520
D. UDP port 520

Answer: D.

Question 3:
You are configuring EIGRP for network 10.0.0.0/8. Which commands will add this network under the EIGRP routing process?

A. R1(config-router)#network 10.0.0.0 0.255.255.255
B. R1(config-router)#network 10.0.0.0 255.0.0.0
C. R1(config-router)#network 10.0.0.0
D. All of the above.

Answer: D.

Explanation
EIGRP is smart enough to determine the mask from the interface or swap wildcard masks for subnet masks.

Question 4:
You issue the below command. What speed interface is OSPF running on?
R1#show ip ospf int f0/0
FastEthernet0/0 is up, line protocol is up
Internet Address 192.168.1.1/24, Area 0
Process ID 1, Router ID 10.0.0.1, Network Type BROADCAST, Cost: 10
Transmit Delay is 1 sec, State DR, Priority 1

A. 10Mbps Ethernet
B. Fast Ethernet
C. T1 (1.544 Mbps)
D. 56K

Answer: A.

Question 5:
Which command will output a list of only static routes on your routing table?

A. show route static
B. show ip route static
C. show static ip route
D. show static route

Answer: B.

Question 6:
A passive interface in terms of routing is unable to receive or send any routing updates.

A. True
B. False

Answer: B.

Explanation
A passive interface in terms of routing is still able to receive updates but is unable to send any routing updates.

Question 7:
Your colleague shows you the below line of configuration and asks you what the 110 at the end of the line indicates. What do you tell her?
RouterA(config)#ip route 172.168.1.0 255.255.255.0 192.16.1.2 110

A. It's a floating static route and 110 is the administrative distance
B. 110 indicates that the route is learned via OSPF
C. It refers to an access list the route is checked against
D. 110 is the Time to Live (TTL) attached to the packet

Answer: A.

Question 8:
You issue a 'show ip protocols' for RIP and see the below output. When was the last update sent?
next due in 15 seconds

A. 15 seconds ago
B. 45 seconds ago
C. 75 seconds ago
D. 105 seconds ago

Answer: A.

Question 9:
Which route will be most preferred by the router by administrative distance?

A. 1
B. 0
C. 255
D. 254

Answer: B.

Question 10:
Routers use the shortest prefix match rule when determining which of the routes placed into the routing table should be used to forward

traffic to a destination network or node.

A. True
B. False

Answer: B.

Explanation
Routers use the longest prefix match rule when determining which of the routes placed into the routing table should be used to forward traffic to a destination network or node.

Question 11:
Which of the below commands will configure the EIGRP router ID.

A. R1(config-router)#eigrp router-id 1.1.1.1
B. R1(config-router)#eigrp 10 router-id 1.1.1.1
C. R1(config-router)#router-id 1.1.1.1
D. R1(config-router)#router-id 1.1.1.1 eigrp 10

Answer: A.

Question 12:
You see the below line of configuration on your router. What does it mean?
R1#(config-if)#interface Serial0/0
R1#(config-if)#ip unnumbered FastEthernet0/0

A. IP addresses are being self-assigned by the router
B. S0/0 is using the same IP address as F0/0
C. You are using DHCP to assign IP addresses to router interfaces
D. F0/0 is using the same IP address as S0/0

Answer: B.

Question 13:
You can manually override the cost on an OSPF interface with the _____ interface command.

A. ip ospf cost [1-65535]

B. cost [1 -65535]
C. ip cost [1 -65535]
D. ospf cost [1 -65535]

Answer: A.

Question 14:
You have RIP configured on your network. You want to upgrade to RIPv2. What steps do you take?

A. Add the 'no auto-summary' command
B. You need to configure the networks from scratch
C. Configure RIPv2 and then remove the RIP networks
D. Add the 'version 2' command

Answer: D.

Question 15:
You see the below configuration on your router. What does it indicate?
R1#show ip protocols
Routing Protocol is "rip"
Redistributing: rip
Automatic network summarization is not in effect

A. The 'no auto-summary' command has been applied
B. The 'no auto-summary' command has NOT been applied
C. RIP is running
D. RIPv2 is running
E. The 'no auto-summary' command cannot be applied

Answer: A.

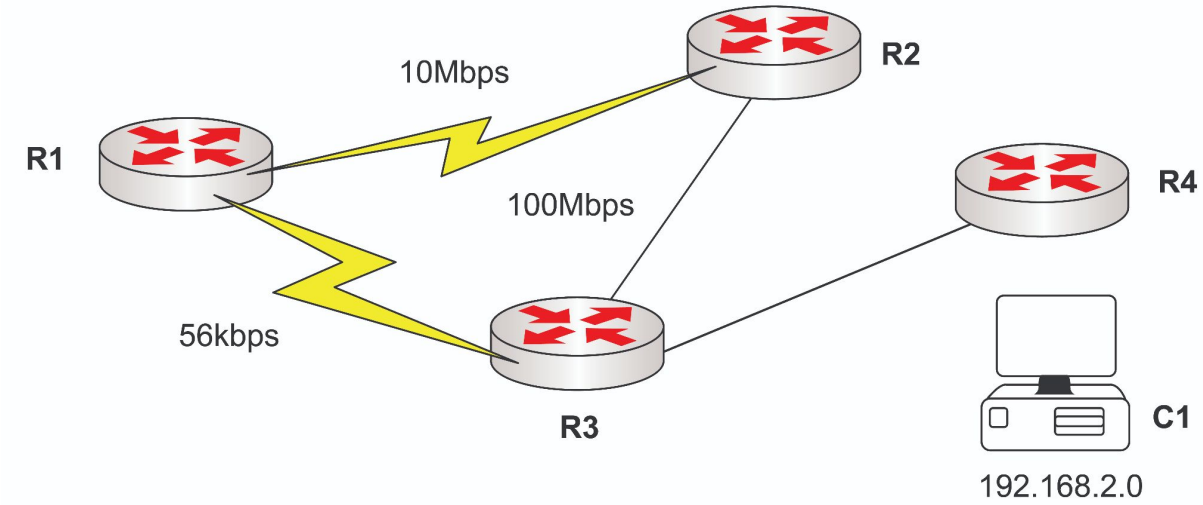
Question 16:
Your boss asks you what the relevance of the 'permanent' means in the below line of config. What do you tell her?
ip route 172.16.0.0 255.255.0.0 10.1.1.1 permanent

A. It will take priority over any other route even if a better route to that network is received

B. It will give the route an administrative distance of 255 so it is always used first
C. It will put the route into startup configuration even if you don't issue a 'copy run start' command
D. It will retain the route in the routing table even if the interface goes down.

Answer: D.

Question 17:
Looking at the network diagram, which path with RIP takes to get from R1 to the host attached to R4?



A. R1-R3-R4
B. It will load balance over both links
C. R1-R2-R3-R4
D. R1-R2

Answer: A.

Explanation
RIP will count hop-count only so it will take the shortest path even though it is slower. You can of course configure it to take the faster path.

Question 18:

Convergence for link state protocols happens a lot faster because as soon as a network topology changes, only that specific information is sent to the routers in a given area.

A. True
B. False

Answer: A.

Question 19:
Your colleague sends you the below debug output. He wants to know if RIP is running or RIPv2. What do you tell him?
Mar 1 00:05:27.819: RIP: sending flash update to 255.255.255.255 via FastEthernet0/0 (192.168.1.1)
Mar 1 00:05:27.819: RIP: build flash update entries
Mar 1 00:05:27.819: network 172.16.0.0 metric 1

A. RIPv2 as it's sending a broadcast
B. RIPv2 as the metric is included
C. RIPv1 as the interface is included
D. RIPv1 as there is no subnet advertised

Answer: D.

Explanation
RIPv1 is classfull, so no subnet is advertised.

Question 20:
You see the below line of configuration on your router. What does it indicate?
ip route 172.16.0.10 255.255.255.255 192.168.1.1

A. It will turn any packets to the 192.168.1.1 host into broadcasts
B. The route should be changed to a network i.e. 172.16.0.0 255.255.0.0
C. It will turn any packets to the 172.16.0.10 host into broadcasts
D. It's a static host route and will create a /32 route in the routing table

Answer: D.

Question 21:
Your colleague asks you why you have an exit interface configured on the below static route as well as a next-hop. What do you tell him?
R1(config)#ipv6 route fec0::/64 FastEthernet0/0
FE80::C001:8FF:FE01:0

A. Serial and Ethernet networks must have exit interfaces specified for lPv6 static routes to save having to wait for ARP replies.
B. The configuration is incorrect and the exit interface needs to be removed.
C. Broadcast networks (such as Ethernet), need an exit interface for lPvG static routes because routers will not respond to a neighbor solicitation for a network or host it has a route to.
D. The exit interface is added if you are using loopback interfaces elsewhere on your router.

Answer: C.

Question 22:
Components of the composite metrics are bandwidth, delay (of the line), reliability, and load. EIGRP uses _____ and _____ by default.

A. bandwidth/delay
B. reliability/load
C. load/delay
D. bandwidth/load

Answer: A.

Explanation
EIGRP uses bandwidth and delay by default (metric = [bw + delay] x 256)

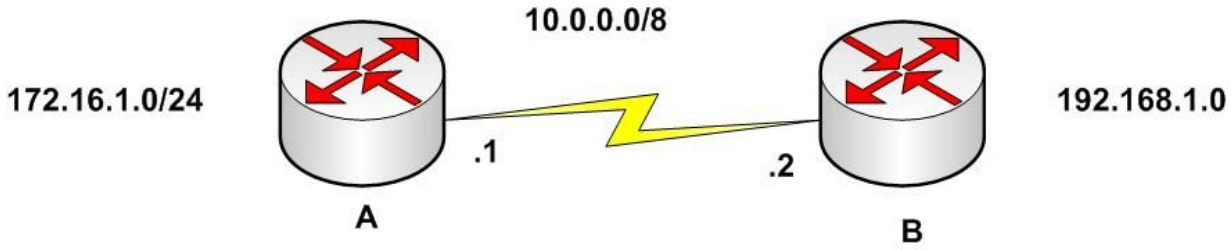
Question 23:
Tick which of the below are valid static IP route configurations.

A. Router(config)#ip route 0.0.0.0 0.0.0.0 Serial0
B. Router(config)#ip route 255.255.255.255 255.255.255.255 Serial0
C. Router(config)#ip route 0.0.0.0 0.0.0.0 Serial0

D. Router(config-router)#ip route 0.0.0.0 0.0.0.0 Serial0
E. Router(config)#ip route 0.0.0.0 0.0.0.0 192.168.1.2

Answer: C, E.

Question 24:
You are configuring a static route on Router A to reach the 192.168.1.0 network. What would you have as the next hop?

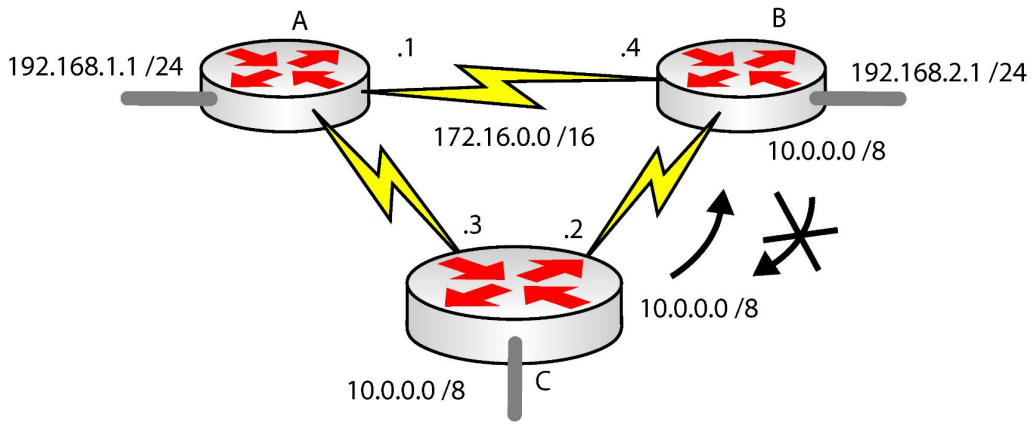


A. 172.16.1.0
B. 10.0.0.2
C. 10.0.0.0
D. 10.0.0.1
E. 192.168.1.0

Answer: B.

Explanation
You can also specify an exit interface but we were asking for the next hop in this question.

Question 25:
The _____ rule prevents any information or route learned on an interface from a router from being advertised back out of the same interface to the same router.



A. time-to-live
B. split-horizon
C. max-hop-count
D. count-to-infinity

Answer: B.

Question 26:
Which one of the following are False about the routing process when the router received a frame/packet.

A. When a router receives a frame, it first checks the FCS field. If an error is found, there is no point in moving to the next step, so the packet is discarded.
B. The routing table should include the exit interface as well as the next-hop IP address. This information is required to correctly encapsulate the frame. Layer 2 and 3 addresses are also required.
C. If there is no entry for the destination in the routing table, the packet will be dropped.
D. If the TTL value is less than 255, then the packet is discarded.
E. The HL field must then be decremented and a new header checksum calculated.
F. If the TTL value is less than 1, then the packet is discarded.
G. If there is no entry for the destination in the routing table, the packet will be broadcast.

Answer: D, G.

Question 27:
You want to advertise the OSPF interface 192.168.1.1/24. Which command(s) will achieve this? (choose all that apply)

A. Router(config)#router ospf 1
B. R2(config-router)#network 192.168.1.0 0.0.0.255 area 0
C. R1(config-if)#router ospf 1 area 0
D. Router(config)#router ospf 1 area 0
E. R1(config-if)#ip ospf 1 area 0

Answer: A, B, E.

Explanation
You can configure OSPF on the interface or use the network command along with adding the OSPF process ID separately.

Question 28:
The DR and BDR are elected when the OSPF process starts. The router with the lowest OSPF priority is selected. If the OSPF priority is the same, then the router with the lowest router ID (RID) is elected.

A. False
B. True

Answer: A.

Explanation
The DR and BDR are elected when the OSPF process starts. The router with the highest OSPF priority is selected. If the OSPF priority is the same, then the router with the highest router ID (RID) is elected.

Question 29:
Once they have been elected, even if a router with a higher priority joins the network, a replacement for the OSPF DR and BDR will not be

selected. They will only be replaced in the event that the DR and the BDR routers fail.

A. True
B. False

Answer: B.

Question 30:
A router is typically divided into three planes of operation and each plane serves a specific role. The three planes are?

A. the backup plane
B. the routing plane
C. the management plane
D. the switching plane
E. the data plane
F. the control plane

Answer: C, E, F.

Question 31:
You have set an interface as passive but want routing updates to be unicast to a neighbor router. Which command can you use?

A. R1(config-router)#neighbor 192.168.1.10
B. R1(config-rip)#neighbor 192.168.1.10
C. R1(config)#neighbor 192.168.1.10
D. R1(config-if)#neighbor 192.168.1.10

Answer: A.

Question 32:
_____ allows a router to set the distance to a network as infinity to allow the rest of the network to converge without receiving inaccurate updates.

A. Route poisoning
B. Split-horizon
C. Count-to-infinity

D. Time-to-live

Answer: A.

Question 33:
Dijkstra's algorithm is typically used by?

A. Border gateway protocols
B. Link-state protocols
C. Distance vector protocols
D. Static routes only

Answer: B.

Question 34:
EIGRP attempts to find neighbors by sending Hello packets every _____ seconds using multicast address _____ (if it is using a broadcast media such as Ethernet)

A. 5/224.0.0.9
B. 10/224.0.0.10
C. 10/224.0.0.9
D. 5/224.0.0.10

Answer: D.

Question 35:
Link state protocols function using the routing-by-rumor technique, where every router relies on its neighbors to maintain correct routing information, meaning the entire routing table is sent periodically to neighbors.

A. False
B. True

Answer: A.

Explanation
Distance vector protocols do this. Link state sees every link using LSAs.

Question 36:
Your boss calls you in a panic. He tells you to set all interfaces on your EIGRP router to passive. Which command do you use?

A. R1(config-router)#passive-interface default
B. R1(config)#passive-interface default
C. R1(config-router)#passive-interface*
D. R1(config-router)#passive-interface all

Answer: A.

Question 37:
If a Designated router (DR) is elected on your OSPF network you must also have a backup designated router (BDR).

A. True
B. False

Answer: B.

Explanation
You can have a BDR but it isn't mandatory.

Question 38:
Your boss asks you to set an interface as passive on your router. Which command do you apply?

A. R1(config-router#fast0/0 passive
B. R1(config)#passive-interface fast0/0
C. R1(config-router)#passive-interface fast0/0
D. R1(config-if)#passive-interface fast0/0

Answer: C.

Question 39:
Your colleague wants to know the meaning of 'delay' in terms of routing metrics. What do you tell her?

A. No fixed definition of this value; it reflects a less or more preferred route
B. The amount of time it takes a packet to traverse a path
C. The amount of traffic using the link; the lowest loaded link is chosen
D. The fastest link speed is chosen

Answer: B.

Question 40:
All of your OSPF routers have the default priority. Your boss asks you to force one to become the Designated Router. Which command do you use?

A. R1(config-if)#ip ospf priority 1
B. R1(config-if)# ospf priority 0
C. R1(config-if)# ospf priority 0
D. R1(config-if)# ospf priority 01
E. R1(config-if)#ip ospf priority 200
F. R1(config-if)#ospf priority 200

Answer: E.

Explanation
The highest is most likely to be elected and 1 is the default priority.

Question 41:
Your gateway router to the internet needs to advertise a default route to the other RIP routers on your network. Which command do you apply?

A. R1(config-router)#default-information originate
B. R1(config-router)#default-information 0.0.0.0
C. R1(config-router)#default-network originate
D. R1(config-router)#default-network 0.0.0.0

Answer: A.

Question 42:

When OSPF is configured on a router, it begins to send Hello packets out of all OSPF interfaces using the _____ address of _____.

A. multicast/224.0.0.5
B. broadcast/224.0.0.5
C. unicast/224.0.0.5
D. anycast/224.0.0.5

Answer: A.

Question 43:
EIGRP uses _____ to ensure that packets are delivered, received, ordered, and acknowledged. This is how EIGRP guarantees the delivery and reliability of its routing packets.

A. User Datagram Protocol (UDP)
B. Reliable Transport Protocol (RTP)
C. Transmission Control Protocol (TCP)
D. Link State Advertisements (LSAs)

Answer: B.

Explanation
It doesn't use TCP or UDP for this process. LSAs are for link state protocols!

Question 44:
RIPv1 updates are sent via?

A. Unicast
B. Broadcast
C. Anycast
D. Multicast

Answer: B.

Question 45:
Which show command will produce the output below?

```
FastEthernet0/0 is up, line protocol is up
  Internet Address 10.0.12.2/24, Area 0
  Process ID 1, Router ID 2.2.2.2, Network Type BROADCAST, Cost: 10
  Enabled by interface config, including secondary ip addresses
  Transmit Delay is 1 sec, State DR, Priority 1
  Designated Router (ID) 2.2.2.2, Interface address 10.0.12.2
  Backup Designated router (ID) 1.1.1.1, Interface address 10.0.12.1
  Timer intervals configured,Hello 10,Dead 40, Wait 40, Retransmit 5
[output truncated]
```

A. Show ip protocols interface f0/0
B. Show ip ospf neighbor f0/0
C. Show ospf interface
D. Show ip ospf interface f0/0

Answer: D.

Question 46:
In order for an adjacency to form, OSPF neighbors must agree on parameters such as Hello interval, Dead interval, area ID, password (if used), and authentication type.

A. True
B. False

Answer: A.

Explanation
They can become neighbors but won't form an adjacency until all these parameters agree.

Question 47:
RIPv2 updates are sent using _____ by default.

A. Unicast
B. Multicast
C. Anycast
D. Broadcast

Answer: B.

Question 48:
In EIGRP, routers must be in different autonomous systems (AS) if they are to exchange routing information.

A. True
B. False

Answer: B.

Explanation
In EIGRP, routers must be in the same AS if they are to exchange routing information.

Question 49:
Below is the output of your routing table. The router receives a packet destined for host 80.1.1.1. Which route will it use?

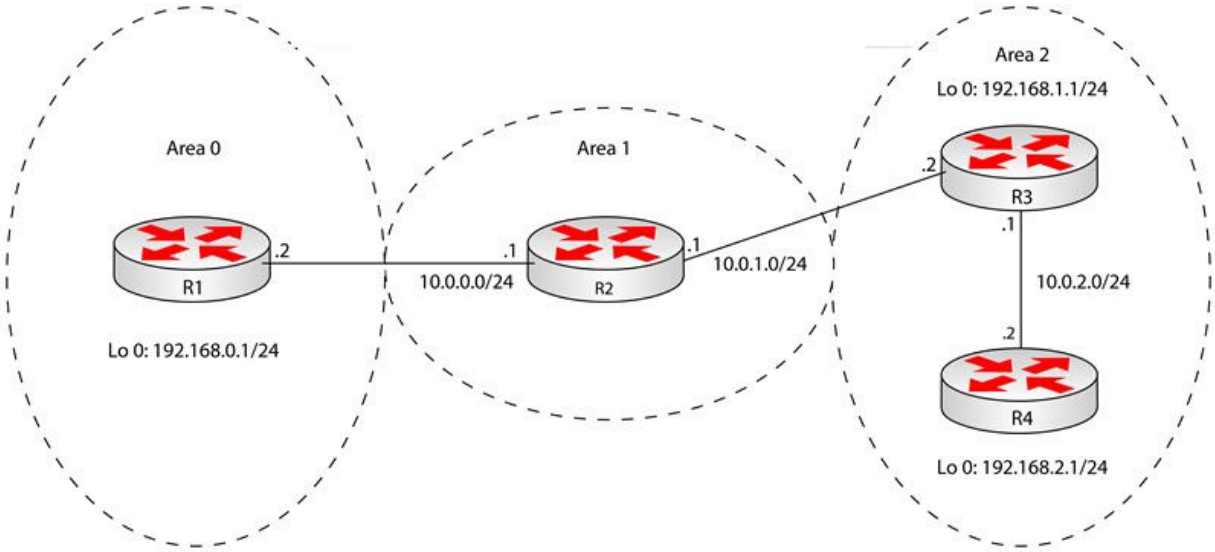
R1#show ip route
Codes: C - connected, S - static, R - RIP, M - mobile, B—BGP,
D - EIGRP, EX - EIGRP external, O - OSPF,
IA - OSPF inter area, N1 - OSPF NSSA external type 1,
N2 - OSPF NSSA external type 2, E1 - OSPF external type 1,
E2 - OSPF external type 2, i - IS-IS, L1 - IS-IS level-1,
L2 - IS-IS level-2, ia - IS-IS inter area,
**** - candidate default, U - per-user static route, o—ODR,***
P - periodic downloaded static route
Gateway of last resort is not set
R 80.1.1.0/24 [120/1] via 10.1.1.2, 00:00:04, Ethernet0/0.1
D 80.0.0.0/8 [90/281600] via 10.1.1.2, 00:02:02, Ethernet0/0.1
O E2 80.1.0.0/16 [110/20] via 10.1.1.2, 00:00:14, Ethernet0/0.1

A. It will broadcast the packet
B. EIGRP
C. RIP
D. It will drop the packet
E. OSPF

Answer: C.

Explanation
The longest match rule applies so the RIP route will be used.

Question 50:
Your boss shows you the below topology for the OSPF network he wants to install. What do you tell him?



A. This will all work fine
B. He will need to add a virtual link between Area 0 and Area 2
C. He will need to add a GRE tunnel between Area 0 and Area 2
D. He will need to add a VPN between Area 0 and Area 2

Answer: B.

Explanation
All non zero OSPF areas should connect to Area 0. If this isn't the case you will need to use virtual links.

Question 51:
Using only static routes improves network security inasmuch that bogus dynamic routes can't be injected into the network by an attacker.
A. False

B. True

Answer: B.

Question 52:
OSPF is a _____ routing protocol and it maps to IP protocol _____.

A. Classless/88
B. classless/89
C. classful/89
D. classful/88

Answer: B.

Question 53:
Tick the correct protocol to administrative distance.

A. EIGRP - 90
B. OSPF - 110
C. OSPF - 100
D. RIP - 110
E. EIGRP -110
F. RIP -120

Answer: A, B, F.

Question 54:
Your boss calls you with an urgent request. He wants you to set all interfaces on your router to passive. What do you do?

A. R1(config)#passive-interface default
B. You have to configure passive interface on each individual interface
C. R1(config-router)#passive-interface default
D. R1(config-router)#passive-interface all
E. It can't be done. At least one interface must have a protocol actively running

Answer: C.

Question 55:
You have an OSPF network running. Your boss asks you to manually change a router's OSPF ID. What command do you add and what is the next step?

A. Use 'Router(config-router)#ospf router-id 192.168.100.100' command and 'clear ip ospf process'
B. Use 'Router(config-router)#router-id 192.168.100.100' command and clear 'clear ip ospf*
C. Use 'Router(config-router)#router-id 192.168.100.100' command and 'clear ip ospf*
D. Use 'Router(config-router)#router-id 192.168.100.100' command and the ID will change.

Answer: A.

Explanation
You could also save config and reload the router or 'clear ip ospf [process id]'

Question 56:
You need to run a debug on RIP packets. Which command do you apply?

A. Debug rip udp
B. Debug udp rip
C. Debug ip rip
D. Debug rip

Answer: C.

Question 57:
You issue the below command on your router. What does it tell you?
R1#show ip route
172.16.1.1 [110/11] via 192.168.1.2, 00:01:21, FastEthernet0/0

A. Router protocol is OSPF and 172.16.1.1 has a cost of 11
B. Routing protocol is RIP and 172.16.1.1 is 11 hops away

C. Routine protocol is OSPF and 172.16.1.1 is connected to an interface running at 11Mbps
D. Routine protocol is EIGRP and 172.16.1.1 is 11 hops away

Answer: A.

Question 58:
If a router receives the 10.0.0.0/8 network via RIP, OSPF, External EIGRP and internal BGP which one will be installed in the routing table?

A. OSPF
B. RIP
C. External EIGRP
D. Internal BGP
E. 110 will be the lowest AD so installed.

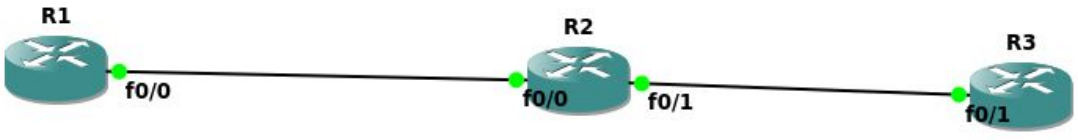
Answer: A.

Question 59:
RIPv2 multicasts updates to _____.

A. 224.0.0.10
B. 224.0.0.11
C. 224.0.0.8
D. 224.0.0.9

Answer: D.

Question 60:
R1 pings the closest interface of R3. What will the time to live (TTL) value when it reaches the interface on R3?



A. 255

B. 253
C. 254
D. 252

Answer: C.

Explanation
R2 will receive as 255 and forward as 254. R3 will receive as 254. If it forwarded it, it would decrement by 1 to 253.

Question 61:
You issue the below command on your OSPF router. What will the router ID be?

Router#show ip interface brief
Interface IP-Address OK? Method Status Protocol
Ethernet0 unassigned YES unset administratively down down
Loopback0 172.16.1.1 YES manual up up
Serial0 192.168.1.1 YES manual up up
Serial1 200.1.1.1 YES unset administratively down down

A. None of these
B. 192.168.1.1
C. 172.16.1.1
D. 200.1.1.1

Answer: C.

Explanation
The router will choose the router ID (RID) from the highest IP address on the router or the router's Loopback address if it has one. The Loopback address will be chosen above any other IP address.

Question 62:
Which command will clear all the IP routes from your routing table?

A. R2(config)#clear ¡p route *
B. R2#clear ¡p route *

C. R2(config-router)#clear ip route *
D. Can only be done by reloading the router
E. R2#clear ip route all

Answer: B.

Question 63:
You have network 172.16.1.0 /30 on your WAN but the neighbor router is receiving route 172.16.0.0 via RIPv2. Which command will allow it to receive network 172.16.1.0?

A. R1(config)#no summary
B. R1(config-router)#no summary
C. R1(config-router)#no auto-summary
D. R1(config)#no auto-summary

Answer: C.

Question 64:
You have sent the below debug messages to Cisco TAC. They tell you that the Maximum Transmission Unit (MTU) must be adjusted to 1500 in order to resolve the problem. What do you configure?

```
R2#deb ip ospf adj
OSPF adjacency events debugging is on
*Mar  1 00:56:43.155: OSPF: Send DBD to 1.1.1.1 on FastEthernet0/0 seq
0x12D9 opt 0x52 flag 0x7 len 32
*Mar  1 00:56:43.155: OSPF: Retransmitting DBD to 1.1.1.1 on
FastEthernet0/0 [6]
*Mar  1 00:56:43.859: OSPF: Rcv DBD from 1.1.1.1 on FastEthernet0/0 seq
0x1D31 opt 0x52 flag 0x7 len 32  mtu 1000 state EXSTART
*Mar  1 00:56:43.859: OSPF: Nbr 1.1.1.1 has smaller interface MTU
*Mar  1 00:56:43.863: OSPF: First DBD and we are not SLAVE
```

A. R1(config-if)#ospf mtu 1500
B. R1(config-if)#mtu 1500
C. R1(config-router)#mtu 1500
D. R1(config)#mtu 1500

Answer: B.

Explanation
MTU is configured per interface. You can also use the 'R1(config-if)#ip ospf mtu-ignore' command.

Question 65:
Distance vector protocols function using the routing-by-rumor technique, where every router relies on its neighbors to maintain correct routing information, meaning the entire routing table is sent periodically to neighbors.

A. True
B. False

Answer: A.

Question 66:
Which of the following support MD5 authentication?

A. RIPv2
B. Neither
C. Both RIP and RIPv2
D. RIP

Answer: A.

Question 67:
Your boss asks you to set F0/0 as passive for your OSPF network. Which command do you apply?

A. R1(config-if)#passive-interface
B. R1(config-router) #passive-interface fast0/0
C. R1(config-if)#passive-interface ospf 1
D. R1(config-router)#passive-interface

Answer: B.

Question 68:
The ip default-gateway command is only used on routers without IP routing enabled.

A. False
B. True

Answer: B.

Question 69:
The EIGRP router ID process is similar to that in OSPF. The highest IP address configured on the router is chosen if no loopback is present or router-id configured.

A. True
B. False

Answer: A.

Question 70:
Your boss asks you about using RIP on your network. He is concerned about the maximum paths it can load balance traffic over. What do you tell him?

A. No load balancing by default but maximum of 4
B. Only RlPv2 can load balance
C. 2 by default up to maximum of 8
D. RIP can't load balance
E. 4 by default up to maximum of 16

Answer: E.

Question 71:
RIPv2 uses _____ as a metric for path selection, with a maximum hop count of __.

A. hop count /16
B. bandwidth/i 5
C. cost/15
D. cost/255
E. hop count /15

Answer: E.

Question 72:
The ip default-gateway command is used on routers that have IP routing enabled and works best alongside routing protocols.

A. True
B. False

Answer: B.

Explanation
The ip default-network command is used on routers that have IP routing enabled and works best alongside routing protocols.

Question 73:
Tick which of the below are classful routing protocols.

A. RIPv2
B. ISIS
C. OSPF
D. RIP
E. IGRP

Answer: D, E.

Question 74:
By default, OSPF will load balance over __ equal costs paths but can do so over ___ if required.

A. 2/8
B. 32/64
C. 8/32
D. 4/16

Answer: D.

5.4 CCNA 200-301 Bonus Test 4

Question 1:
Extended numbered IP access lists are numbered from?

A. 1 - 999
B. 100 - 199
C. 1000 - 999
D. 1 - 99

Answer: B.

Question 2:
Your boss asks you which ports will be forwarded if you add a helper address for DHCP. Tick those which will be forwarded (other than those associated with DHCP).

A. Telnet (23)
B. TFTP (69)
C. POP3 (110)
D. TACACS (49)
E. Time (37)
F. DNS (53)

Answer: B, D, E, F.

Question 3:
Standard IP (expanded range) are numbered from?

A. 100 - 199
B. 1300 - 1999
C. 1000 - 1999
D. 1 - 99

Answer: B.

Question 4:

Your colleague has heard that there are specific permit/deny statements which appear at the end of every IPv6 access list. You tell him there are. Which do you state are always on? (choose all that apply)

A. permit icmp any any
B. deny ipv6 any any
C. permit icmp any any nd-na
D. permit icmp any any nd-ns
E. permit arp any any

Answer: B, C, D.

Question 5:
You can influence the HSRP primary gateway election by configuring a lower HSRP priority on the router or switch you want to act as the primary gateway.

A. False
B. True

Answer: A.

Explanation
You can influence the HSRP primary gateway election by configuring a higher HSRP priority on the router or switch you want to act as the primary gateway.

Question 6:
Which port do you look for when searching for TACACS traffic on your logs?

A. 47
B. 49
C. 48
D. 46

Answer: B.

Question 7:

Referencing the below access list. Which host addresses will be blocked by it?
access-list 10 deny 192.168.100.32 0.0.0.31

A. 192.168.100.33
B. 192.168.100.65
C. 192.168.100.61
D. 192.168.100.1
E. 192.168.100.62

Answer: A, C, E.

Explanation
hosts 33-62 blocked

Question 8:
You want to configure a router with HSRP into group 1 with an virtual IP address of 10.0.0.3 and priority of 120. Which two commands do you apply to the interface?

A. standby ip 10.10.10.3 1 /standby priority 120 1
B. standby ip 1 10.10.10.3 1 /standby priority 1 120
C. standby 1 ip 10.10.10.3/standby 1 priority 120
D. standby ip 10.10.10.3/standby priority 120

Answer: C.

Question 9:
Which bits indicate that the packet is a response packet to a TCP request made from your network and thus it is safe. (choose all that apply)

A. REQ
B. RST
C. ACK
D. SYN
E. RPT

Answer: B, C.

Question 10:
Valid DHCP packet types include? (choose all that apply)

A. DHCP Ack
B. DHCP Request
C. DHCP Discover
D. DHCP Offer
E. DHCP Refuse
F. DHCP Repeat

Answer: A, B, C, D.

Question 11:
The default HSRP priority value is _____ and can go up to 255. If both routers use the same priority, the election will be won by the router with the _____ IP address.

A. 1/higher
B. 100/higher
C. 100/lower
D. 1/lower

Answer: B.

Question 12:
The DHCP server can allocate many parameters as well as IP address including default gateway, lease duration and subnet mask but the DNS server address must be added to hosts manually.

A. False
B. True

Answer: A.

Explanation
The DNS server address can be allocated automatically.

Question 13:

Which command will add a default gateway to be allocated to hosts by the router acting as DHCP server?

A. R1(dhcp-config)#default-gateway 192.168.1.1
B. R1(dhcp-config)#default-gateway 192.168.1.1
C. R1(dhcp-config)#ip default-router 192.168.1.1
D. R1(dhcp-config)#default-router 192.168.1.1

Answer: D.

Question 14:
In relation to QoS, the quality of a network is determined by which four factors?

A. Bandwidth (speed and capacity of a link)
B. Packet Loss (normally due to congestion)
C. Time to Recovery (TTR) (how long the standby routers take to assume control in the event of an outage)
D. Jitter/Delay variation (difference between delay in packets)
E. Delay (time between packets sent and received)
F. Convergence (speed the routing protocols agree on network topology)

Answer: A, B, D, E.

Question 15:
You need to swap internal IP address 172.16.1.1 for routable address 80.1.1.1 using NAT. Which line of configuration will achieve this result?

A. RouterA(config)#access- list 101 permit ip nat inside source static 172.16.1.1 80.1.1.1 any
B. RouterA(config)#ip flat inside source static 172.16.1.1 80.1.1.1
C. RouterA(config)#ip nat pool cisco permit 172.16.1.1 80.1.1.1
D. RouterA(config)#access- list 101 permit ¡p 172.16.1.1 80.1.1.1 eq nat

Answer: B.

Question 16:
The default HSRP Hello interval is ___ seconds and there is a __-second Dead interval timer.

A. 3/30
B. 1/3
C. 2/10
D. 3/10

Answer: D.

Question 17:
Your colleague is trying to find Network Time Protocol (NTP) packets in a sniffer file. What do you tell her to look for?

A. TCP port 45
B. UDP port 123
C. TCP port 122
D. UDP port 121

Answer: B.

Question 18:
You need to configure an access list to permit EIGRP on your network. Which command will achieve this?

A. access-list 101 permit tcp any any eq eigrp
B. access-list 101 permit eigrp any any
C. access-list 101 permit ip eigrp any any
D. access-list 101 permit tcp eigrp any any

Answer: B.

Question 19:
Your boss tells you that an access list is a mess due to additions and deletions. She asks you to resequence the 'CCNA' access control list so the sequence numbers start at 200 and are incremented at 15 for each line. What do you configure?

A. R1(config-acl)#resequence CCNA 200 15
B. R1(config)#ip access-list resequence CCNA 200 15
C. R1(config)#ip access-list resequence CCNA step 200 order 15
D. R1(config)#ip access-list CCNA resequence 200 15

Answer: B.

Question 20:
You see the below line of config on your router. What does it indicate?
R1(dhcp-config)#lease 1 1 1

A. Lease time of 1 hour 1 minute 1 second
B. Lease time of 1 month 1 day 1 hour
C. Lease time of 1 year 1 month 1 day
D. Lease time of 1 day 1 hour 1 minute

Answer: D.

Question 21:
You need to test if a DHCP server is allocating IP addresses. Which command do you apply to your router interface connected to the DHCP server?

A. R2(config-if)#ip address dhcp
B. R2(config-if)#ip dhcp
C. R2(config-if)#ip address auto
D. R2(config-if)#ip address auto-assign dhcp

Answer: A.

Question 22:
Your boss asks you to write out the range of private IP addresses you can use for NAT via RFC 1918. What do you tell him? (choose all that apply)

A. 192.168.0.0 - 192.168.255.255
B. 192.168.0.0 - 192.168.100.255
C. 172.16.0.0 - 172.31.255.255
D. 127.0.0.0
E. 10.0.0.0 - 10.255.255.255
F. 10.0.0.0 - 10.100.255.255

Answer: A, C, E.

Question 23:
You need to run a NAT debug in order to troubleshoot an issue. Which command do you issue?

A. debug nat
B. debug ip nat
C. debug ip packet nat
D. debug ip nat translations

Answer: B.

Question 24:
Standard IP access lists are numbered?

A. 0-99
B. 1-199
C. 1-99
D. 1-299

Answer: C.

Question 25:
The characteristics of cloud computing defined in the NIST document include? (choose all that apply)

A. On-demand self-service (create and remove as needed)
B. Resource pooling (can be used by others)
C. Rapid elasticity (can easily scale [e.g., add more RAM with a click of a button])
D. Broad network access (accessible from tablets, phones, PCs, etc.)
E. Measured service (provision is monitored, usually for billing purposes)
F. All of the above.

Answer: F.

Question 26:

Your boss thinks that somebody has manually allocated an IP address from the DHCP pool. Which router command do you run to see if this has happened?

A. Router#show ip dhcp pool
B. Router#show ip dhcp conflict
C. Router#show dhcp conflict
D. Router#show ip interface brief

Answer: B.

Question 27:
Which command is missing from the below config in order to change it from dynamic NAT to NAT overload?
Router(config)#ip nat inside source list 1 pool PAT_Pool

A. nat-overload
B. pat
C. overload-pool
D. overload

Answer: D.

Question 28:
There are three models of cloud computing defined in the NIST document. Tick them.

A. Security as a Service (SaaS)
B. QoS as a Service (QaaS)
C. Infrastructure as a Service (IaaS)
D. Software as a Service (SaaS)
E. Platform as a Service (PaaS)

Answer: C, D, E.

Question 29:
In HSRPv1, the layer 2 address that is used by the virtual IP address will be a virtual MAC address composed of _____, where xx is the

HSRP group number in hexadecimal value and is based on the respective interface.

A. 0000.0C07.BBxx
B. 0000.0C07.CCxx
C. 0000.0C07.AAxx
D. 0000.0C07.ACxx

Answer: D.

Question 30:
HSRPv2 uses a new MAC address range of _____ to _____ for the virtual gateway address.

A. 0000.0C9F.E000 to 0000.0C9F.EEFF
B. 0000.0C8F.F000 to 0000.0C8F.FFFF
C. 0000.0C9F.F000 to 0000.0C9F.FFEE
D. 0000.0C9F.F000 to 0000.0C9F.FFFF

Answer: D.

Question 31:
Your NAT pool isn't working. You realize you need to permit NAT on inside and outside interfaces. Which commands do you apply to the two interfaces? (choose all that apply)

A. ip nat inside
B. ip nat pool permit
C. ip nat permit
D. ip nat overload
E. ip nat pool
F. ip nat outside

Answer: A, F.

Question 32:
You were away from your desk and somebody entered a router command from your console session. Which command did they issue?

```
Vlan172 - Group 100 (version 2)
  State is Active
    5 state changes, last state change 00:19:06
  Virtual IP address is 172.16.31.254
  Active virtual MAC address is 0000.0C9F.0000
    Local virtual MAC address is 0000.0C9F.F064 (v2 default)
  Hello time 3 sec, hold time 10 sec
    Next Hello sent in 2.467 secs
  Preemption disabled
  Active router is local
  Standby router is 172.16.31.2
  Priority 105 (configured 105)
  Group name is hsrp-Vl1-100 (default)
```

A. show standby
B. show hsrp
C. show virtual ip
D. show active

Answer: A.

Explanation
This is a 'show standby' command for HSRP.

Question 33:
You need to configure your router to get its time from an NTP server on the network. Which line of config do you use?

A. R1(config)#ntp server 192.168.1.2
B. R1(config)#'time server 192.168.1.2
C. R1(config)#ip ntp server 192.168.1.2
D. R1(config-ntp)#server 192.168.1.2

Answer: A.

Question 34:
Your boss calls you and asks you to urgently clear all NAT translations on the router. What do you do?

A. clear ip nat translation *
   *

B. this can only be done by reloading the router
C. delete ip nat translations
D. clear ip nat table

Answer: A.

Question 35:
By default, all traffic not specified in the access list is permitted.

A. False
B. True

Answer: A.

Explanation
All traffic not specifically permitted is denied.

Question 36:
Which line of config allocates a DNS server address to your DHCP router configuration.

A. R1(dhcp-config)#name-server 8.8.8.8
B. R1(dhcp-config)#domain-server 8.8.8.8
C. R1(dhcp-config)#dns-server 8.8.8.8
D. R1(dhcp-config)#ip dns-server 8.8.8.8

Answer: C.

Question 37:
Which command will produce the output below?

```
Interface Serial0/0 queueing strategy: fair
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: weighted fair
  Output queue: 0/1000/64/0 (size/max total/threshold/drops)
     Conversations 0/0/256 (active/max active/max total)
     Reserved Conversations 0/0 (allocated/max allocated)
     Available Bandwidth 1158 kilobits/sec
```

A. R1#show int s0/0 queueing
B. R1#show queueing int s0/0

C. R1#show int s0/0 qos
D. R1#show qos mt sO/O

Answer: B.

Question 38:
DHCP uses UDP ports? (choose all that apply)
A. 66
B. 65
C. 67
D. 69
E. 68

Answer: C, E.

Question 39:
The IP address 172.32.1.100 is routable on the internet.
A. False
B. True

Answer: B.

Explanation
It's a public routable address so yes.

Question 40:
Which keyword can you add to the end of an extended access list to only permit traffic instigated from inside the network?
A. syn-ack
B. inside
C. established
D. log

Answer: C.

Explanation

The established keyword checks for the ACK (acknowledged) bit in the packet. If the ACK or RST (reset) bit is set, then this indicates that the packet is a response packet to a TCP request made from your network and thus it is safe.

Question 41:
A previous network engineer added a DHCP server on a different subnet to where the hosts reside. Your router won't forward broadcast traffic so DHCP isn't working. Which command do you apply?

A. ip dhcp helper 192.168.1.1
B. You can’t fix this. You need to move the DHCP server to the same subnet
C. ip helper-address 192.168.1.1
D. ip forward broadcast

Answer: C.

Question 42:
You are running HSRP on your routers. The router with priority 150 goes down and the one with priority 100 takes over. When the 150 router reloads it doesn't become the active gateway. Which command must you enable for this to happen. The HSRP group is 100.

A. Sw1(config-hsrp)#standby 100 preempt
B. Sw1(config-if)#standby 100 active
C. Sw1(config-if)#standby 100 master
D. Sw1(config-if)#standby 100 preempt

Answer: D.

Question 43:
Cisco IOS-based routers can be configured as either DHCP servers or DHCP clients (per interface).

A. True
B. False

Answer: A.

Question 44:
_____ - strict priority servicing; packets in this queue have priority over packets in any other queue. This queue would be used for voice and streaming video.

A. Back Door Queuing (BDQ)
B. Weighted Fair Queuing (WFQ)
C. Low Latency Queuing (LLQ)
D. First in First Out (FIFO)

Answer: C.

Question 45:
When the host first boots up, if it has been enabled to use DHCP (which is the default in most operating systems), it will send a _____ message asking for its IP information.

A. multicast
B. unicast
C. broadcast
D. dhcp_cast

Answer: C.

Question 46:
Which wildcard will match subnet 255.255.192.0?

A. 0.0.127.255
B. 0.0.31.255
C. 0.0.7.255
D. 0.0.63.255

Answer: D.

Question 47:
With a recursive lookup, the DNS server will fully answer the query by either providing the IP address or giving an error.

A. True

B. False

Answer: A.

Explanation
With an iterative query, the DNS server can provide information, give an error, or direct the requester to another DNS server.

Question 48:
Your colleague comes to you asking for help troubleshooting his NAT config which isn't working. Which line of configuration is missing?

Router(config)#interface f0/0
Router(config-if)#ip nat inside
Router(config-if)#ip address 192.168.1.1 255.255.255.0
Router(config-if)#interface s0/0
Router(config-if)#ip address 80.1.1.1 255.0.0.0
Router(config-if)#ip nat outside
Router(config-if)#exit
Router(config)#ip nat inside source list 1 interface s0/0 overload

A. Router(config)#access-list 1 permit 192.168.1.0 0.0.0.255
B. Router(config-nat)#access-list 1 permit 192.168.1.0 0.0.0.255 nat
C. Router(config)#source-list 1 permit 192.168.1.00.0.0.255
D. Router(config)#access-list 1 permit all

Answer: A.

Question 49:
The "show access-lists" command will display all IPv4 and IPv6 ACLs.
A. False
B. True

Answer: B.

Question 50:

Which wildcard mask will match subnet 192.168.1.0 255.255.255.224?

A. 0.0.0.31
B. 0.0.0.127
C. 0.0.0.15
D. 0.0.0.63

Answer: A.

Question 51:
The virtualization software that allows a host to be split into virtual machines is known as a _____, which creates, runs, and manages VMs on a host.

A. Intervisor
B. Supervisor
C. Hypermanager
D. Hypervisor

Answer: D.

Question 52:
You have created an IPv6 access list named 'STANDARD_ACL'. Which command will apply it to an interface incoming?

A. R1(config-if)#ipv6 traffic-list STANDARD_ACL in
B. R1(config-if)#ipv6 traffic-list STANDARD_ACL in
C. R1(config-if)#ipv6 access-group STANDARD_ACL in
D. R1(config-if)#ipv6 traffic-filter STANDARD_ACL in

Answer: D.

Question 53:
The below router output is from which command?

Clock is unsynchronized, stratum 16, no reference clock
nominal freq is 250.0000 Hz, actual freq is 250.0000 Hz, precision is 2**18

reference time is 00000000.00000000 (00:00:00.000 UTC Mon Jan 1 1900)
clock offset is 0.0000 msec, root delay is 0.00 msec
root dispersion is 0.00 msec, peer dispersion is 0.00 msec
R1#show ntp associations
address ref clock st when poll reach delay offset disp
~192.168.1.2 0.0.0.0 16 - 64 0 0.0 0.00 6000
**** master (synced), # master (unsynced), + selected, - candidate, ~ configured***

A. show ntp status
B. show synch ntp
C. show time ntp
D. show time

Answer: A.

Question 54:
You need to permit pings incoming with an access list. Which tags do you add to the end of your access list? (choose all that apply)
Router(config)#access-list 100 permit icmp any any ?

A. reply
B. established
C. echo-reply
D. echo
E. response

Answer: C, D.

Question 55:
All of the below are QoS marking options. Tick the three which operate at layer 3.

A. Multiprotocol Label Switching Experimental (MPLS EXP) bits
B. IP Precedence (IPP) bits
C. IP Explicit Congestion bits
D. 802.1Q Class of Service (CoS) bits

E. Differentiated Services Code Points (DSCPs)

Answer: B, C, E.

Question 56:
Your colleague asks you what the Null0 interface means in the below configuration.
Router(config)#ip route 10.2.4.0 255.255.255.0 Null0

A. It's associated with BGP traffic and is used as an alternative path.
B. It's a secure interface where all traffic is checked before forwarding.
C. It's a buffer where the packets are stored until the line is clear.
D. It's a logical interface. Any traffic routed to the Null interface is automatically dropped by the router.

Answer: D.

Question 57:
Your boss wants you to block telnet on your network. Which port do you block on your ACL?

A. 23
B. 21
C. 25
D. 22

Answer: A.

Question 58:
You are trying to establish which of your router interfaces have been allocated IP addresses via DHCP. Which command do you use?

A. show ip interface dhcp
B. show dhcp interface
C. show ip interface brief
D. show interface dhcp

Answer: C.

Explanation
The 'method' column using the 'show ip interface brief' will reveal this.

Question 59:
You need to permit RIP on your network. What do you configure on your access list?

A. access-list 101 permit udp any any eq rip
B. access-list 101 permit ip rip any any eq
C. access-list 101 permit ip any any eq rip
D. access-list 101 permit ip any any

Answer: A.

Question 60:
you can ping an IP address but cannot ping the hostname. What is the most likely cause?

A. Access list
B. DHCP
C. DNS
D. Firewall
E. NAT

Answer: C.

Question 61:
What is the correct access list syntax to permit DNS coming in from host 20.0.2.1?

A. access-list 102 allow udp host 20.0.2.1 any host eq 53
B. access-list 102 permit dns host 20.0.2.1 any eq udp
C. access-list 102 permit udp any host 20.0.2.1 eq 53
D. access-list 102 permit udp host 20.0.2.1 any eq 53

Answer: D.

Question 62:

Your boss asks you to add a wildcard mask to an access list to block any traffic from the network 192.168.1.4 /30. What do you configure?

A. 0.0.0.1
B. 0.0.0.255
C. 255.255.255.252
D. 0.0.0.3
E. 0.0.0.4

Answer: D.

Question 63:
Your boss calls you in a panic. There is a range of IP addresses being allocated by routers running DHCP which need to be excluded. Which command do you apply? (you would then clear the NAT translation table)

A. R1 (config)#ip excluded-address 192.168.1.1 192.168.1.10 dhcp
B. R1 (config-dhcp)#excluded-address Ip 192.168.1.1 192.168.1.10
C. R1 (config)#ip dhcp excluded-address 192.168.1.1192.168.1.10
D. R1 (config)#ip dhcp exclude 192.168.1.1 192.168.1.10

Answer: C.

Question 64:
DNS uses UDP port 53. When does it use TCP?

A. For use over VPNs
B. if the response data size exceeds 512 bytes
C. For use with IP Security
D. For zone transfers

Answer: B, D.

Question 65:
You need to log matches to your access list as they happen. Which command do you use?

A. log access-list 15
B. access-list 15 deny 172.16.0.0.0.0.255.255 log

C. access-list 15 log
D. logging access-list 15

Answer: B.

Question 66:
You configure the access list below. Is host 192.168.100.30 blocked?
access-list 10 deny 192.168.100.0 0.0.0.31

A. Permitted
B. Blocked

Answer: B.

Explanation
Hosts 1 - 30 are blocked.

Question 67:
Access control lists can be applied to Telnet or console lines using the _____ command.
A. access-control
B. access-config
C. access-group
D. access-class

Answer: D.

Question 68:
You need to check whether the NAT translations are working. Which IOS command do you use?
A. show ip nat translations
B. show nat translations
C. show translations nat
D. show nat table
E. show ip nat table translations

Answer: A.

5.5 CCNA 200-301 Bonus Test 5

Question 1:
The router uses NVRAM to store?

A. The compressed lOS file
B. Bootstrap lOS
C. Startup configuration
D. Running configuration

Answer: C.

Question 2:
You have a very large configuration file in NVRAM and need to compress it. Which command do you use?

A. Router(config)#service compress-memory
B. Router(config)#compress nvram
C. Router(config)#service corn press-config
D. Router(config)#corn press-config

Answer: C.

Question 3:
The objective of Zone-based policy firewall (ZBW) is to create security zones, with each device interface placed into a zone.

A. True
B. False

Answer: A.

Question 4:
SNMP is an _____ Layer protocol that operates using ports _____ and _____ to remotely configure, monitor, and manage network devices, including routers, switches, and servers.

A. Transport

B. 162
C. 160
D. 161
E. TCP
F. 163
G. ICMP
H. UDP
I. Application

Answer: B, D, I.

Question 5:
Which commands will show you the IOS version in flash memory on your router?

A. dir flash:
B. show flash
C. show version
D. show ios
E. show memory

Answer: A, B, C.

Question 6:
You have bought a second-hand router and don't know the enable password. Which config register setting do you apply in order to boot and skip the startup configuration?

A. 0x2142
B. 0x2102
C. 0x2122
D. 0x2111

Answer: A.

Explanation
0x2142 is standard across most models but do check your documentation in case it requires something else.

Question 7:
Which line of configuration will create an SNMP community named Private with only Read/Write access?

A. R1 (config)#snmp-server community Private rw
B. R1 (config-snmp)#server community Private rw
C. R1 (config)#snmp-server community rw Private
D. R1 (config-snmp)#community Private rw

Answer: A.

Question 8:
You issue a 'show run' and see that the password has been encrypted. What sort of encryption is this?

Router#show running-configuration
Building configuration...
hostname Router
!
enable secret 5 1F3Dy$w0mwxVmJ79Ug9pK/snpRe/

A. MD5
B. Cisco level 7 password encryption
C. SSL
D. SSH

Answer: A.

Question 9:
Your colleague calls you saying he has been telnetting into a router and his session is 'stuck'. You log in and see he is using line 2. Which command do you use to fix the issue?

A. R1 (config-line)#clear line 2
B. R1 (config)#clear line 2
C. Reload the router
D. R1#clear line 2

Answer: D.

Question 10:
You see the below lines of config on your router. You need to add a line before the current ACL config. What do you type after going back into ACL config mode?

R1#show access-list CCNA
Standard IP access list CCNA
10 permit 10.0.1.0

A. R1(config-std-nacl)#5 10.0.2.0
B. R1(config-std-nacl)#5 permit 10.0.2.0
C. R1(config-std-nacl)#permit 10.0.2.05
D. R1(config-std-nacl)#permit 10.0.2.0 add 5

Answer: B.

Question 11:
SMMP__ uses the view-based access control model, which defines which group(s) can access which types of information per device.

A. v2a
B. v1
C. v2
D. v3

Answer: D.

Question 12:
The major difference between Intrusion Detection System (IDS) and Intrusion Prevention System (IPS) is that IPS devices operate in line with the traffic (meaning they are placed in the middle of the traffic flow and all the packets pass through the inspection device), while IDS devices only retrieve a copy of the traffic so they can analyze it.

A. False
B. True

Answer: B.

Explanation
IPS and IDS aren't in the syllabus but they have asked this question in the past!

Question 13:
You decide to disable CDP on your entire device for security. Which command do you use?

A. Switch(config)#no cdp run
B. Switch(config)#no cdp enable
C. Switch(config)#no cdp
D. You have to turn it off each individual interface

Answer: A.

Question 14:
Configuring the router for Telnet access alone is not sufficient. The enable or enable secret command must also be configured to allow for privileged access once Telnet access has been allowed.

A. False
B. True

Answer: B.

Question 15:
Which show command will reveal the reason for the last router reload (see below)?

System returned to ROM by power-on

A. show logging
B. show version
C. show reboot
D. show memory

Answer: B.

Question 16:
Which two commands must you add to enable SSH and Telnet into your VTY lines?

A. Router(config-line)#transport input all
B. Router(config -line)#transport permit ssh telnet
C. Router(config-line)#transport input ssh telnet
D. Router(config-Iine)#line vty 0 15

Answer: C, D.

Question 17:
Your boss asks you to restrict the VLANs permitted into a certain trunk link. Which command do you use?

A. Switch(config-if)#switchport trunk permit vlan 7-12
B. Switch(config-if)#switchport trunk vlan 7-12
C. Switch(config-if)#switchport trunk allowed vlan 7-12
D. Switch(config-if)#switchport trunk vlan 7-12 permit

Answer: C.

Question 18:
TACACS+ is designed to authenticate dial-in access to a network.

A. False
B. True

Answer: A.

Explanation
RADIUS (as the name suggests) is designed to authenticate dial-in access to a network.

Question 19:
Which command will give you the below output?

Device ID: Switch

Entry address(es):
Platform: Cisco 2960, Capabilities: Switch
Interface: FastEthernet0/0, Port ID (outgoing port): FastEthernet0/2
Holdtime: 176
Version:
Cisco Internetwork Operating System Software
IOS (tm) C2960 Software (C2960-I6Q4L2-M), Version 15.1(22)EA4, RELEASE
SOFTWARE(fc1)
Copyright (c) 1986-2005 by Cisco Systems, Inc.
Compiled Wed 18-May-05 22:31 by jharirba
advertisement version: 2
Duplex full

A. show neighbor
B. show neighbor detail
C. show cdp neighbor detail
D. show ip neighbor detail

Answer: C.

Question 20:
You need to give your boss a report on all the licenses on all your routers. Which command do you issue?

A. Router#show license version
B. Router#show version
C. Router#show license all
D. Router#show router Iicense

Answer: C.

Question 21:
You need to use extended options for Traceroute. What do you type?

A. trace ip [hit enter]
B. tracert [hit enter]
C. traceroute [hit enter]
D. trace extended 192.168.1.2

Answer: C.

Question 22:
Your colleague is configuring a switch to use SSH. He is trying to generate crypto keys but can't recall the command. What do you tell her?

A. Switch(config)#crypto key generate ssh
B. Switch(config)#ssh key generate
C. Switch(config)#crypto key generate
D. Switch(config)#crypto key generate rsa

Answer: D.

Question 23:
To install a new license on an IOS router, you have to first upload the ___ file to the router's flash memory using a TFTP server.

A. .ios
B. .lic
C. .zip
D. .rtr

Answer: B.

Question 24:
You need to configure router/switch clock settings. Which command will achieve this?

A. Switch(config)#clock set 14:55:05 March 29 2016
B. Switch#set clock 14:55:05 March 29 2016
C. Switch(config-time)#clock set 14:55:05 March 29 2016
D. Switch#clock set 14:55:05 March 29 2016

Answer: D.

Question 25:
Which command has been used to encrypt the below password?

Router#show run
service password-encryption
hostname Router
enable password 7 070724404206

A. password -encryption
B. general password-encryption
C. service password-encryption
D. password-encrypt

Answer: C.

Question 26:
You have configured an access list and need to apply it to the Telnet ports on your router. Which command will achieve this?

A. Router(config-line)#ip access-class 10 in
B. Router(config-line)#ip access-group 10 in
C. Router(config-line)#access-class 10 in
D. Router(config-line)#access-group 10 in

Answer: C.

Question 27:
Cisco passwords are NOT case sensitive so you can use 'CISCO' or 'cisco' as the password if you use the below config.
Router(config)#enable password cisco

A. False
B. True

Answer: A.

Question 28:
Your boss asks you to disable LLDP incoming on a router interface. Which command do you use?

A. Router(config)#no IIdp in

B. Router(config)#no IIdp run
C. Router(config-if)#no IIdp receive
D. Router(config)#no IIdp receive

Answer: C.

Question 29:
You have created an SNMP community called "Private' with read/write access. You need to add two more lines of configuration. Firstly permit IP address 10.0.0.100 which is the SNMP server and then apply it to the 'Private' community.

A. R1(config)#access-Iist 110 permit udp host 10.0.0.100 any eq snmp
B. R1(conflg)#snmp-server community Private rw permit 10
C. R1(config)#access-Iist 10 permit host 10.0.0.100
D. Rl (config)#snm p-server community Private rw 10

Answer: C, D.

Question 30:
You see the below configuration on a router which another engineer is typing. What does the 'T' indicate?
Switch(config)#banner motd T

A. TACACS
B. T is the delimiting character
C. Timer
D. Track

Answer: B.

Explanation
The next time the letter 'T' is typed the router knows the banner message has ended such as AUTHORIZED ACCESS ONLY T. The T isn't used as part of the message.

Question 31:

You have a security audit and are told to change the native VLAN number to 888 across trunk links. What do you configure?

A. Switch(conflg-if)#native vlan 888
B. Switch(config-if)#switchport native vlan 888
C. Switch(config-if)#switchport trunk native vlan 888
D. Switch(config-if)#switchport trunk vlan 888 native

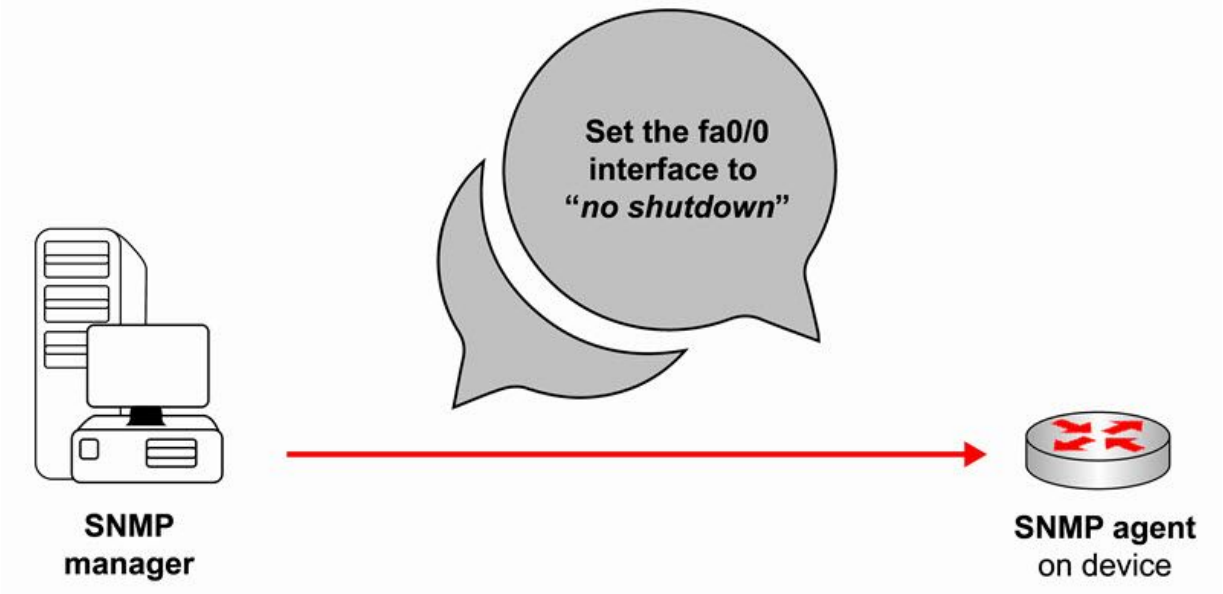
Answer: C.

Question 32:
There is an access list blocking Telnet sourced from your router but you have a permitted IP address 172.16.1.10 which is allocated to your loopback 0 interface. How do you telnet?

A. R1 #telnet 192.168.1.1 /source-interface loopback0
B. R1 #telnet 192.168.1.1 /source-address 172.16.1.10
C. Perform an extended ping but use Telnet
D. Telnet to your loopback 0 and then to the destination (piggy back)

Answer: A.

Question 33:
The below image illustrates what type of SNMP message?



A. InformRequest

B. Response
C. GetRequest
D. SetRequest

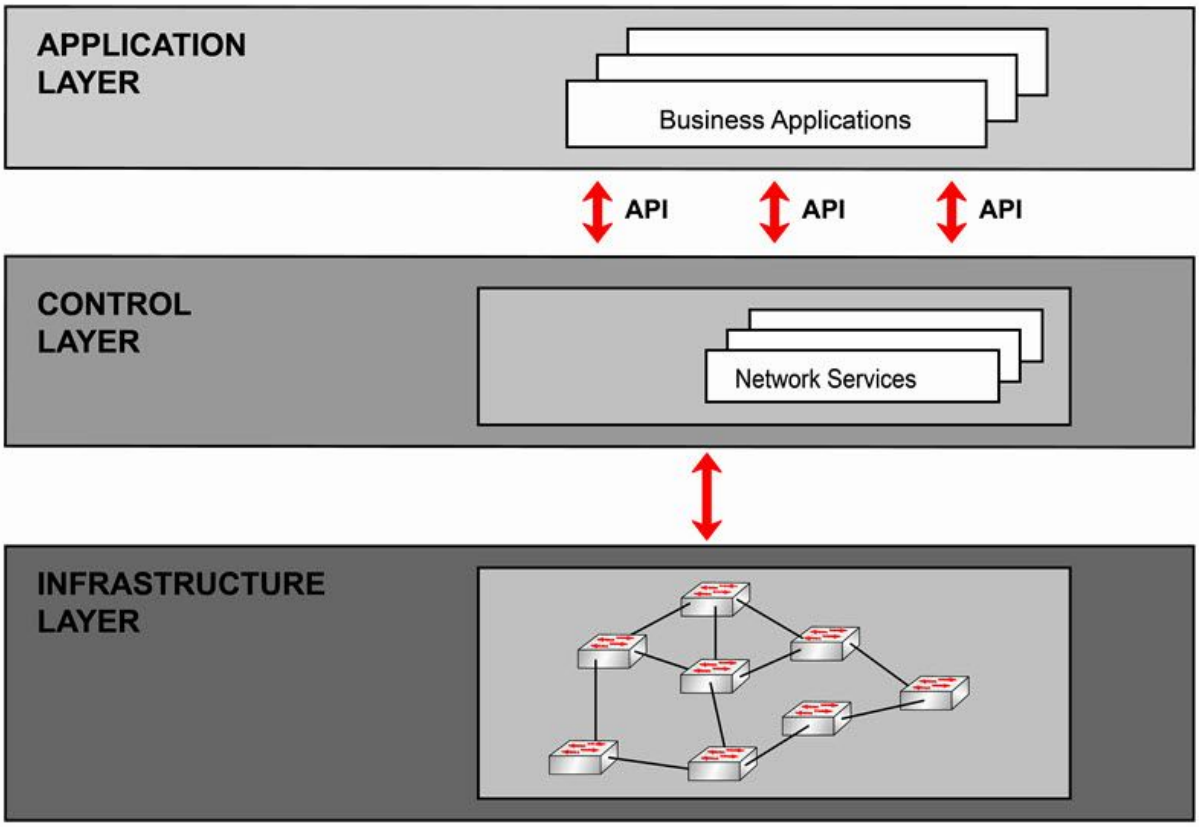
Answer: D.

Question 34:
Your boss is considering adding RADIUS to the network. What do you tell her is true about it?

A. Encrypts only password field
B. TCP port 49
C. Most suitable for device management
D. Proprietary
E. RFC 2865
F. UDP (1645/1646 or 1812/1813)
G. Encrypts entire packet
H. Most suitable for network access

Answer: A, E, F, H.

Question 35:
The networking architecture proposed by ONF is shown below. What do Northbound APIs do?



A. Northbound APIs are used between the control and application layers
B. Northbound APIs are used between the control and infrastructure layers
C. Northbound APIs are used between the application and infrastructure layers

Answer: A.

Question 36:
Re _____, in enterprise mode, an equivalent 192-bit cryptographic strength is optionally used as well as 256-bit Galois/Counter Mode Protocol (GCMP-256), 384-bit Hashed Message Authentication Mode (HMAC) and 256-bit Broadcast/Multicast Integrity Protocol (BIP-GMAC-256). It offers brute-force protection (even if your password is weak), secures the Internet of Things, and adds individualized data encryption.

A. WEP
B. WPA3

C. WPA2
D. WPA

Answer: B.

Question 37:
You need to copy your router startup configuration file to an FTP server. Which commands do you need to add? (choose all that apply)

A. R1(config)#ip ftp password cisco
B. R1(config)#copy startup-config ftp:
C. R1(config)#ftp password cisco
D. R1#copy startup-config ftp:
E. R1(config)#ftp username test
F. R1(config)#ip ftp username test

Answer: A, D, F.

Question 38:
Your boss asks you to lock down your VTP process with a password. Which command do you use?

A. Switch(config)#password vtp cisco
B. Switch(config)#vtp password cisco
C. Switch(config)#switchport vtp password cisco
D. Switch(config-vtp)#password cisco

Answer: B.

Question 39:
SNMP uses several message types in order to operate. These messages are called Protocol Data Units (PDUs) and do NOT include _____?

A. Response
B. GetNextRequest
C. GetRequest
D. InformRequest
E. GetBulkRequest

F. Trap
G. GetResponse
H. SetRequest

Answer: G.

Question 40:
You've been asked to send router logging messages to server address 192.168.1.1. Which command do you enter?

A. R1(config)#logging 192.168.1.1
B. R1(config)#logging server 192.168.1.1
C. R1(config-syslog)#logging 192.168.1.1
D. R1(config)#syslog server 192.168.1.1

Answer: A.

Question 41:
Your boss asks you for some basic details about TACACS+. What do you tell her?

A. Proprietary
B. Encrypts only password field
C. RFC 2865
D. TCP port 49
E. Most suitable for device management
F. Encrypts entire packet
G. UDP (1645/1646 or 1812/1813)

Answer: A, D, E, F.

Question 42:
On Cisco devices, AAA serves which two purposes?

A. user roaming (e.g., ensuring the users security setting follow him as he changes Wireless AP location)
B. user tracking (e.g., tracking which services each authenticated user uses, for how long)

C. device management (e.g., username/password to configure the device or just view privileges).
D. network access (e.g., what VLAN to place a user in)

Answer: C, D.

Question 43:
Your boss calls you with an urgent request. You need to disable CDP on an interface on one of your switches. Which command do you use?

A. Switch(config-if)#no cdp enable
B. Switch(config-if)#no cdp run
C. Switch(config-if)#no cdp
D. Switch(config-if)#cdp disable

Answer: A.

Question 44:
RADIUS provides a centralized method to validate network access for users (routers or network access servers).

A. False
B. True

Answer: A.

Explanation
TACACS+ provides a centralized method to validate network access for users (routers or network access servers).

Question 45:
You are asked to permit syslog messages on the router access list. Which port do you allow?

A. 74
B. 514
C. 225
D. 1443

Answer: B.

Question 46:
Firewalls operate in which two modes?

A. full flow
B. stateful
C. stateless
D. inspect only

Answer: B, C.

Question 47:
The latest version in use is SNMPv3, which greatly improves on which two security shortfalls?

A. MIB table access speed
B. access control
C. trap size
D. message security
E. user roles

Answer: B, D.

Question 48:
IP SLA is built into Cisco IOS, and consists of IP SLA _____ and IP SLA _____.

A. 4
B. Activator
C. Destination
D. Responder
E. Source
F. 2
G. 3

Answer: D, E.

Question 49:

If you add a VTP password to a switch it will be propagated to all the other switches in the next VTP update.

A. True
B. False

Answer: B.

Explanation
Each switch individually I'm afraid :-(

Question 50:
Boot ROM is a special kind of ?

A. DRAM
B. BIOS
C. EEPROM
D. NVRAM

Answer: C.

Question 51:
Some of the key differences between WPA and WPA2 include the following: (choose all that apply)

A. RC4 encryption is replaced by AES
B. TKIP is replaced by CCMP
C. SNMPv3 support
D. HTTPS support

Answer: A, B.

Question 52:
You are sending debug messages to Cisco to check for issues but the engineer asks you to add timestamps to them. Which command do you issue?

A. timestamp logs
B. debug timestamps
C. service timestamps

D. timestamp debugs

Answer: C.

Question 53:
The startup configuration is transferred to DRAM every time you reload the router and is renamed running config.

A. False
B. True

Answer: B.

Question 54:
Unlike TACACS+, RADIUS cannot control which commands an authenticated user can execute.

A. True
B. False

Answer: A.

Question 55:
One of the most powerful features of IP SLA is that it not only provides real-time information but also presents historical data of network performance.

A. False
B. True

Answer: B.

Question 56:
The SNMP management information base (MIB) structure features tree leaves/nodes referred to as Object Identifiers (OIDs). OIDs can be represented by names or numbers.

A. False
B. True

Answer: B.

Question 57:
You issue a 'copy run start' command. Which memory type does this move from/to?

A. NVRAM to DRAM
B. DRAM to Flash
C. Flash to DRAM
D. DRAM to NVRAM

Answer: D.

Question 58:
What does an AAA stand for?

A. Auditing—reporting on unusual user activity
B. Authorization—what is a person allowed to do (after authentication)?
C. Accounting—what did the person do?
D. Approval—what can the person access?
E. Authentication—verifies identity (e.g., username and password)

Answer: B, C, E.

Question 59:
Your colleague tells you they have heard that there are three planes of operation on Cisco devices but she doesn't know what they are. What do you tell her?

A. Management plane - device management (Telnet/SSH/SNMP).
B. Control plane - the brains of the device (routing protocols).
C. Data plane - also referred to as the forwarding plane. It is responsible for switching packets through the router.
D. Security plane - manages TACACS+ and RADIUS.
E. User plane - manages user access and accounts.

Answer: A, B, C.

Question 60:

Your boss is worried about security and asks you to set an inactive timeout on the router console port to 5 minutes. Which command do you add?

A. Router(config-Iine)#consoIe-tmeout 5
B. Router(config-Iine)#exec-timeout 5
C. Router(config-Hne)#timeout 5
D. Router(config-Iine)#idle-timeout 5

Answer: B.

Question 61:
Your IOS image is too large to fit on flash memory so you store it on a USB drive. Which command will you add to the router to boot from this image?

A. Router(config)#boot system flash usbflash0: c1841- adventerprisek9-mz.l 51 -4.M7.bin
B. Router(config)#boot usbflash0: c1841 -adventerprisek9- mz.151 -4.M7.bin
C. Router(config)#boot flash usbflash0: c1841 -adventerprisek9- mz.151 -4.M7.bin
D. Router(config)#boot system usbflash0: c1841- adventerprisek9-mz.151 -4.M7.bin

Answer: A.

Question 62:
The very first step the router performs when powered on is?

A. Power on Self Test (POST)
B. Startup configuration loaded
C. Bootstrap loads the lOS
D. Configuration register is checked

Answer: A.

Question 63:

The show _____ command will display incoming connections to your router and the show _____ command will display outgoing connections from your router to another device.

A. connections in /connections out
B. users/sessions
C. incoming/outgoing
D. sessions/users

Answer: B.

Question 64:
You configure your router to log Level 4 (Warning Messages). Which other levels will be logged by default? (choose all that apply)

A. 1
B. 6
C. 7
D. 0
E. 3
F. 5
G. 2

Answer: A, D, E, G.

Explanation
Whichever level you choose to monitor, the levels above it will also be included; for example, if you choose Level 3 (Error), Levels 2 through 0 will also be monitored.

Question 65:
Zone-based policy firewall (ZBW) zone types include? (choose all that apply)

A. Untrusted
B. Unused
C. Trusted
D. DMZ
E. Internet

Answer: A, C, D.

Question 66:
Which SNMP show command produces the below output?

groupname: ILMI security model:v1
readview : *ilmi writeview: *ilmi
notifyview: <no notifyview specified>
row status: active

groupname: ILMI security model:v2c
readview : *ilmi writeview: *ilmi
notifyview: <no notifyview specified>
row status: active

groupname: Private security model:v3 priv
readview : v1default writeview: WRITE_VIEW
notifyview: <no notifyview specified>
row status: active

A. show snmp group
B. show snmp community
C. show snmp security
D. show snmp views

Answer: A.

Question 67:
Your colleague calls you in a panic. He is telnetting to a remote router and running debugs but can't see anything appearing on the screen. What do you tell him?

A. Remove any ACL blocking the debugs
B. You can’t see debugs unless you are consoled in
C. Run ‘terminal monitor’ command
D. He needs to issue the ‘monitor debug’ command

Answer: C.

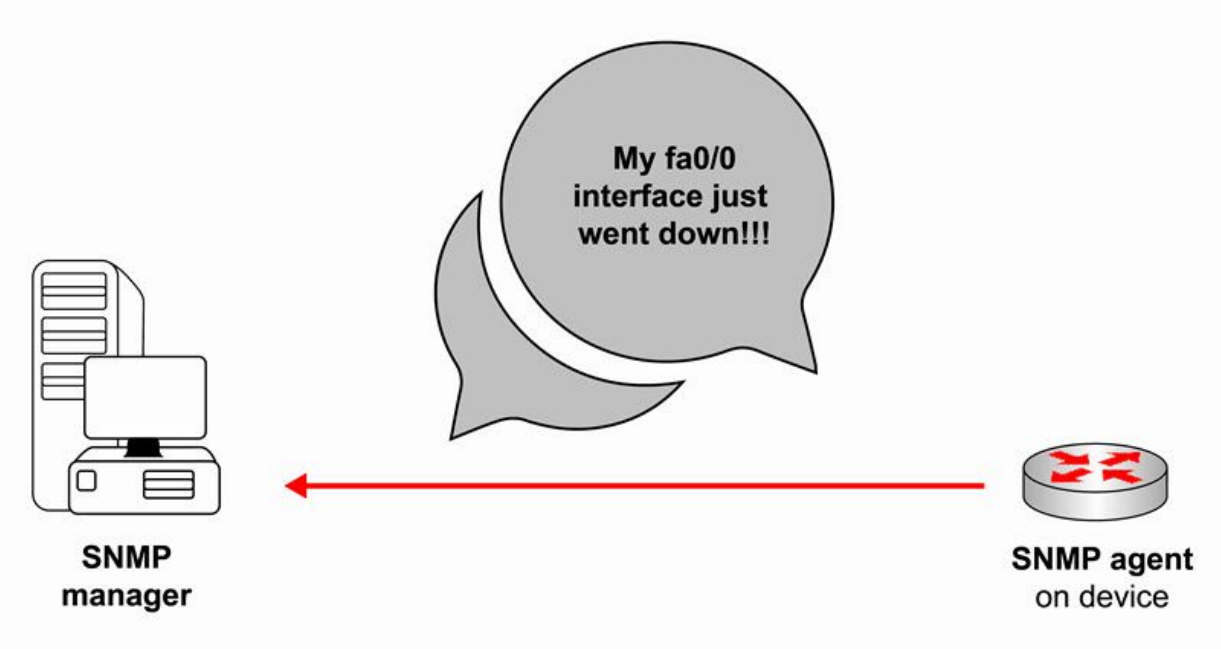
Question 68:
In the below output what does the CTY indicate?

```
R1#show line
   Tty Typ  Tx/Rx    A Modem  Roty Acc0 AccI   Uses  Noise  Overruns
Int
*    0 CTY             -    -      -    -    -      0      0       0/0  -
     1 AUX 9600/9600   -    -      -    -    -      0      0       0/0  -
*    2 VTY             -    -      -    -    -      2      0       0/0  -
     3 VTY             -    -      -    -    -      0      0       0/0  -
     4 VTY             -    -      -    -    -      0      0       0/0  -
     5 VTY             -    -      -    -    -      0      0       0/0  -
     6 VTY             -    -      -    -    -      0      0       0/0  -
```

A. Telnet port connections
B. Current refused connections
C. Console port connections
D. Aux port connections

Answer: C.

Question 69:
The below image is an example of which type of SNMP message?



A. GetRequest

B. SetRequest
C. Trap
D. Response

Answer: C.

Question 70:
All Telnet traffic is encrypted by default.

A. False
B. True

Answer: A.

Explanation
All traffic sent using Telnet (including network configuration commands and passwords) are sent in clear text, which means that the configuration commands being sent over a Telnet session can easily be captured by a network sniffer if it is attached to the network.

Question 71:
Your boss issues a 'show line' command on a router and asks you what the * (asterisks) indicate. What do you tell her?

```
R1#show line
   Tty Typ  Tx/Rx    A Modem  Roty Acc0 AccI   Uses  Noise  Overruns
Int
*    0 CTY            -    -      -    -    -      0      0       0/0  -
     1 AUX 9600/9600  -    -      -    -    -      0      0       0/0  -
*    2 VTY            -    -      -    -    -      2      0       0/0  -
     3 VTY            -    -      -    -    -      0      0       0/0  -
     4 VTY            -    -      -    -    -      0      0       0/0  -
     5 VTY            -    -      -    -    -      0      0       0/0  -
     6 VTY            -    -      -    -    -      0      0       0/0  -
```

A. They are currently not in use
B. They have an access list attached
C. They are currently in use
D. They are disabled permanently by the administrator

Answer: C.

Question 72:
Routers and switches can be accessed, managed, and configured via a web page using HTTP, so unless you need to run it you should disable it. Which command will do this?

A. Switch(config)#no ip http
B. Switch(config)#no ip port 80
C. Only with an access list
D. Switch(config)#no ip http server

Answer: D.

Question 73:
Syslog logging level 2 refers to?

A. Informational
B. Error
C. Alert
D. Critical

Answer: D.

Question 74:
Cisco IP SLA is used to measure network performance, including? (choose all that apply)

A. jitter
B. CPU usage
C. packet loss
D. Server load
E. connectivity
F. delay

Answer: A, C, E, F.

Question 75:
SNMP uses the concept of _____, which is software running on a network device that collects and stores information about the system in

an agreed format called the management information base (MIB).

A. pings
B. spiders
C. crawlers
D. pollers
E. agents

Answer: E.

Question 76:
You are configuring QoS on your WLC using the GUI. Which is the correct option for voice traffic.

A. Platinum
B. Gold
C. Silver
D. Diamond

Answer: A.

Question 77:
Which command will enable AAA on your router?

A. R1 (config)#aaa new-model
B. R1 (config)#enable aaa
C. R1 (config)#aaa enable
D. R1 (config)#aaa active

Answer: A.

5.6 CCNA 200-301 Bonus Test 6

Question 1:
You have configured the BPDU guard on your switch. If the port received a BPDU it would take what action?

A. It will bring the port up and allow the BPDU to pass.
B. It will change the port from access to trunk.
C. It will change the port from designated to root.
D. It will put the port into an err-disabled mode and an administrator will have to bring it up manually.

Answer: D.

Question 2:
When you enable UplinkFast on a switch globally (rather than per port), what are the three things that the switch does?

A. Tracks alternate root ports (ports on which root Hellos are received)
B. Increases the root priority to 49152
C. Closes all designated ports
D. Sets the port costs to 3000
E. Decreases the root priority to 4096

Answer: A, B, D.

Question 3:
Looking at the output below. Which command was issued on your router?

```
BGP neighbor is 192.168.10.1,remote AS 1, external link
  BGP version 4, remote router ID 192.0.2.1
  BGP state = Established, up for 00:02:16
  Last read 00:00:15, last write 00:00:15, hold time is 180,
keepalive interval is 60 seconds
  Neighbor capabilities:
    Route refresh: advertised and received(old & new)
    Address family IPv4 Unicast: advertised and received
  Message statistics:
    InQ depth is 0
    OutQ depth is 0
                         Sent       Rcvd
    Opens:               1          1
```

A. show ip bgp interface
B. show ip bgp AS1
C. show ip bgp process
D. show ip bgp neighbors

Answer: D.

Question 4:
MPLS uses MAC addresses, to identify endpoints and intermediate switches and routers.

A. True
B. False

Answer: B.

Explanation
MPLS uses IP addresses, either IPv4 or IPv6, to identify endpoints and intermediate switches and routers.

Question 5:
The default STP bridge priority is _____ by default.

A. 4096
B. 1024
C. 32668

D. 32768

Answer: D.

Question 6:
Your colleague calls you to ask how you can monitor the keepalives on an HDLC link. What do you tell him?

A. debug hdlc
B. debug serial interface
C. debug hdlc packet
D. debug serial hdlc

Answer: B.

Question 7:
In STP disabled state, the port will receive BPDUs but will not forward them to the switch processor.

A. True
B. False

Answer: A.

Question 8:
What does the below output tell you about this switch?

SwitchA#show spanning-tree vlan 5
VLAN0005
Spanning tree enabled protocol ieee
Root ID Priority 32773
Address 0013.c3e8.2500
Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
Bridge ID Priority 32773 (priority 32768 sys-id-ext 5)
Address 0013.c3e8.2500
Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
Aging Time 300
Interface Role Sts Cost Prio.Nbr Type

---------- ---- --- -------- ------- ----------
Fa0/15 Desg FWD 100 128.15 P2p
Fa0/18 Desg FWD 100 128.18 P2p

A. It is not the root for VLAN 5
B. The switch priority is 4096
C. It's the root bridge for VLAN 5
D. It's the root for all VLANs

Answer: C.

Question 9:
STP Listening to learning states takes seconds.

A. 60
B. 30
C. 15
D. 20

Answer: C.

Question 10:
Which are valid RSTP+ port roles? (choose all that apply)

A. Non-forwarding
B. Designated
C. Secure
D. Backup
E. Root
F. Alternate
G. Disabled

Answer: B, D, E, F.

Question 11:
You see in the below output that the cost is 119. Which two links would be used to get to this value?

SwitchD#show spanning-tree vlan 5
VLAN0005
CHAPTER 9: LAN SWITCHING TECHNOLOGIES
519
Spanning tree enabled protocol ieee
Root ID Priority 32773
Address 0013.c3e8.2500
Cost 119
Port 20

A. 10Mbps + 10 Mbps
B. 100Mbps + 10 Mbps
C. 100Mbps + 1 Gbps
D. 100Mbps + 100 Mbps

Answer: B.

Explanation
Score is 19 + 100.

Question 12:
Which command will produce the output below?

```
Serial0 is up, line protocol is up
  Hardware is HD64570
  Internet address is 192.168.1.1/24
  MTU 1500 bytes, BW 1544 Kbit, DLY 20000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation HDLC, Loopback not set
  Keepalive set (10 sec)
```

A. show serial interface 0
B. show serial 0 interface
C. show ip interface brief serial
D. show interface serial 0

Answer: D.

Question 13:

The 802.1X authentication process uses the Extensible Authentication Protocol (EAP) between the supplicant and the authenticator as the foundation protocol for authentication.

A. True
B. False

Answer: A.

Question 14:
Which command will reveal if uplinkfast has been configured on your switch?

A. show spanning-tree all
B. show spanning-tree vlan 5
C. show spanning-tree
D. show spanning-tree uplinkfast

Answer: D.

Question 15:
Metro Ethernet can connect LANs to a WAN or to the Internet. Multisite organizations can use this technology to connect their branches to an intranet or to the Internet.

A. True
B. False

Answer: A.

Question 16:
PPP offers two types of compression. What are they and how do you configure them?

A. Predictor - ppp compress predictor
B. Trailer - ppp compress trailer
C. Stacker - ppp compress stacker
D. Leader - ppp compress leader

Answer: A, C.

Question 17:
The Cisco DNA Center features can be accessed via a _____.

A. CRUD
B. SSL
C. REST API
D. SSH

Answer: C.

Question 18:
The following are the Cisco DNA Center tools:

A. License Manager
B. Discovery
C. Inventory
D. Image Repository
E. Command Runner
F. Topology
G. All of the above.

Answer: G.

Explanation
The following are the Cisco DNA Center tools:

- Discovery – scans the network for new devices. Cisco DNA center uses Cisco Discovery protocol to discover network devices and interconnections between devices.
- Inventory – provides the inventory for devices.
- Topology – helps you to discover and map network devices to a physical topology with detailed device-level data.
- Image Repository – helps you to download and manage physical and virtual software images automatically.
- Command Runner – allows you to run diagnostic CLI commands against one or more devices.
- License Manager – visualizes and manages license usage.
- Template Editor – is an interactive editor to author CLI templates.

- Network Plug and Play – provides a simple and secure approach to provision networks with a near zero touch experience.
- Telemetry – provides telemetry design and provision.
- Data and Reports – provides access to data sets and schedules data extracts for download in multiple formats like Portable Document Format (PDF) reports, comma separated values (CSV), Tableau, and so on.

Question 19:
Tick the two valid methods of forcing a bridge to become the STP root for VLAN 5.

A. spanning-tree vlan 5 priority 8192
B. spanning-tree vlan 5 priority root
C. spanning-tree vlan 5 force-root
D. spanning-tree vlan 5 root primary

Answer: A, D.

Question 20:
You have configured VLANs 10 and 20 on your switch. You now need to add an IP phone to a port with a PC attached. Which three lines of configuration do you need to add?

A. Switch (config-if)#switchport vlan 20 voice
B. Switch(config-if)#switchport access vlan 10
C. Switch (config-if)#switchport mode access
D. Switch (config-if)#switchport voice vlan 20
E. Switch(config-if)#switchport mode trunk
F. Switch (config-if)#switchport vlan 10 access

Answer: B, C, D.

Question 21:
Your boss is thinking about changing from HDLC to PPP for your WAN links. What do you NOT tell him is true of PPP?

A. built-in error detection
B. works over asynchronous links (clocks differ)

C. built-in security
D. supports authentication with CHAP and PAP
E. built-in data compression
F. works over synchronous links (clocks differ)

Answer: C.

Question 22:
Your college asks you what a Dynamic Multipoint Virtual Private Network (DMVPN) is. What do you tell him?

A. They are permanent connections established between different sites of the same company.
B. They are designed to work with OSPF hub-and-spoke networks only.
C. They are dynamic secure connections between small sites or mobile workers and the company headquarters.
D. They are designed to allow multiple hub-and-spoke VPN connections with no extra configuration required to add additional spokes.

Answer: D.

Question 23:
The bridges on a STP network segment collectively determine which bridge has the least-cost path from the network segment to the root. The port connecting this bridge to the network segment is then the root port for the segment.

A. True
B. False

Answer: B.

Explanation
The bridges on a network segment collectively determine which bridge has the least-cost path from the network segment to the root. The port connecting this bridge to the network segment is then the designated port for the segment.

Question 24:
Which show command will produce the below output?

```
VLAN0001
  Spanning tree enabled protocol ieee
  Root ID    Priority    32769
             Address     0001.4272.A095
             Cost        19
             Port        1(FastEthernet0/1)
             Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec
  Bridge ID  Priority    32769  (priority 32768 sys-id-ext 1)
             Address     0001.C934.3988
             Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec
             Aging Time  20
Interface        Role Sts Cost      Prio.Nbr Type
---------------- ---- --- --------- -------- --------------------------
Fa0/1            Root FWD 19        128.1    P2p
```

A. show spanning-tree vlan 1
B. show vlan Id 1
C. show vlan 1
D. show vtp

Answer: A.

Question 25:
Which step is NOT necessary in order to configure a multilink interface (presume that the physical interface is already configured.

A. R1 (config-if)#ppp multilink group 1
B. R1 (config-if)#ppp multilink
C. R1 (config-if)#multilink address 192.0.2.1 255.255.255.252
D. R1 (config-if)#ip address 192.0.2.1 255.255.255.252
E. R1 (config)#interface Multilink1

Answer: C.

Question 26:
The primary factor in deciding the STP root bridge is the _____ ?

A. path cost
B. root bridge ID

C. lOS release
D. Number of interfaces

Answer: B.

Question 27:
Spanning Tree PortFast is typically enabled on an interface connected directly to another switch.
A. False
B. True

Answer: A.

Explanation
Spanning Tree PortFast is typically enabled on an interface connected directly to a host.

Question 28:
Password Authentication Protocol (PAP) for PPP uses a three-way handshake, allowing the remote host to authenticate itself. The password is sent in clear text so it can easily be captured and read.
A. False
B. True

Answer: A.

Explanation
Password Authentication Protocol (PAP) for PPP uses a two-way handshake, allowing the remote host to authenticate itself. The password is sent in clear text so it can easily be captured and read.

Question 29:
802.1X security provides which three device roles?
A. Policy Server (e.g. Cisco QoS lite)
B. Client Marker (i.e. SNMP server)
C. Authenticator (or Policy Enforcement Point, PEP) (e.g., switch)

D. Supplicant (or client) (e.g., laptop)
E. Authentication Server (e.g., Cisco ISE)

Answer: C, D, E.

Question 30:
Which command will enable RSTP+ on your switch?

A. spanning-tree rapid-pvst
B. spanning-tree mode rapid
C. spanning-tree mode rapid-pvst
D. mode rapid-pvst

Answer: C.

Question 31:
Controller-based networks are considered an evolution of networking architecture rather than a new type of network.

A. True
B. False

Answer: A.

Question 32:
You need to change your switch to transparent mode. Which command will achieve this?

A. Sw1 (config)#mode transparent
B. Sw1 (config)#vtp mode transparent
C. Sw1 (config)#transparent mode vtp
D. Sw1 (config-vtp)#mode transparent

Answer: B.

Question 33:
There are specific rules that must be followed for an application to be considered as RESTful. Pick the COMPULSORY rules.

A. Cacheable

B. Code on Demand
C. Uniform Interface
D. Stateless
E. Client-Server
F. Layered System

Answer: A, C, D ,E, F.

Explanation
Code on Demand (optional)

Question 34:
STP is disabled by default on all bridges (switches).
A. True
B. False

Answer: B.

Explanation
STP is enabled by default on all bridges (switches).

Question 35:
Some other popular Southbound APIs include: (choose all that apply)
A. OpenFlow
B. RESTCONF
C. CRUD
D. NETCONF
E. OpFlex
F. SNMP

Answer: A, B, D, E, F.

Explanation
Some popular Southbound APIs include:
● OpenFlow
● NETCONF

- RESTCONF
- OpFlex
- SNMP
- REST
- gRPC (developed by Google)

Question 36:
Point-to-Point Protocol (PPP) is made up of which two main components?

A. Link Control Protocol (LCP)
B. Link Access Protocol (LAP)
C. Control Access Protocol (CAP)
D. Network Control Protocol (NCP)

Answer: A, D.

Question 37:
In regards to DHCP Snooping, for untrusted ports, the switch does which three things?

A. Puts the port into into errdisabled state for recovery by the network administrator
B. Compares the client hardware address with the source MAC address, blocking DoS attacks.
C. Filters all messages sent by DHCP servers,
D. Checks all DHCP release and decline messages against the snooping binding table.
E. Checks all frames against an access list

Answer: B, C, D.

Question 38:
STP calculates the best-cost path to reach the root bridge, and then the best-cost interfaces are put into forwarding state while the others are put into blocking state. All this is achieved by swapping _____.

A. Bridge Protocol Data Units (BPDUs)
B. Topology Protocol Data Units (TPDUs)

C. Path Control Data Units (PCDUs)
D. Bridge Protocol Control Units (BPCU5)

Answer: A.

Question 39:
You are configuring a VLAN on your switch but see the below error message. What is your next step?

```
Sw1(config)#vlan 2010
Sw1(config-vlan)#
% Failed to create VLANs 2010
Extended VLAN(s) not allowed in current VTP mode.
%Failed to commit extended VLAN(s) changes.
```

A. Change switch to transparent mode
B. Change switch to client mode
C. Change switch to server mode
D. VLAN 2010 is reserved. Use 2000 instead.

Answer: A.

Question 40:
Which of the below VLAN IDs are not available for use for Ethernet VLANs. (choose all that apply).

A. 1
B. 1006
C. 1002
D. 1005
E. 0
F. 4094

Answer: C, D, E.

Explanation
Some VLAN IDs can't be used at all (0 and 4095)but others are reserved for Token Ring only (1002-1005)

Question 41:
In order for an EtherChannel to form, all ports or interfaces should have matching settings, such as? (choose all that apply)

A. Duplex
B. Speed
C. DTP settings
D. Native VLAN

Answer: A, B, D.

Question 42:
DHCP snooping was developed to protect against rogue DHCP servers on the LAN. When enabled, it forces the switch to examine and filter inappropriate DHCP messages using the concept of ____ and ____ ports.

A. trusted/untrusted
B. active/backup
C. primary/secondary
D. auto/designated

Answer: A.

Question 43:
Tick the two types of BPDU used by Spanning Tree Protocol.

A. Topology Change Notification (TCN)
B. Root Bridge Change (RBC)
C. Link Down Notification (LDF)
D. Configuration

Answer: A, D.

Question 44:
The following is a list of a few advantages of VXLANs. (choose all which apply)

A. Higher number of supported virtual networks

B. No shutting down of links due to STP
C. Increased number of permitted users
D. Load balancing of traffic

Answer: A, B, D.

Question 45:
Which are valid port states for STP.

A. Forwarding
B. Learning
C. Disabled
D. Blocking
E. Listening
F. All of the above.
G. None of the above.

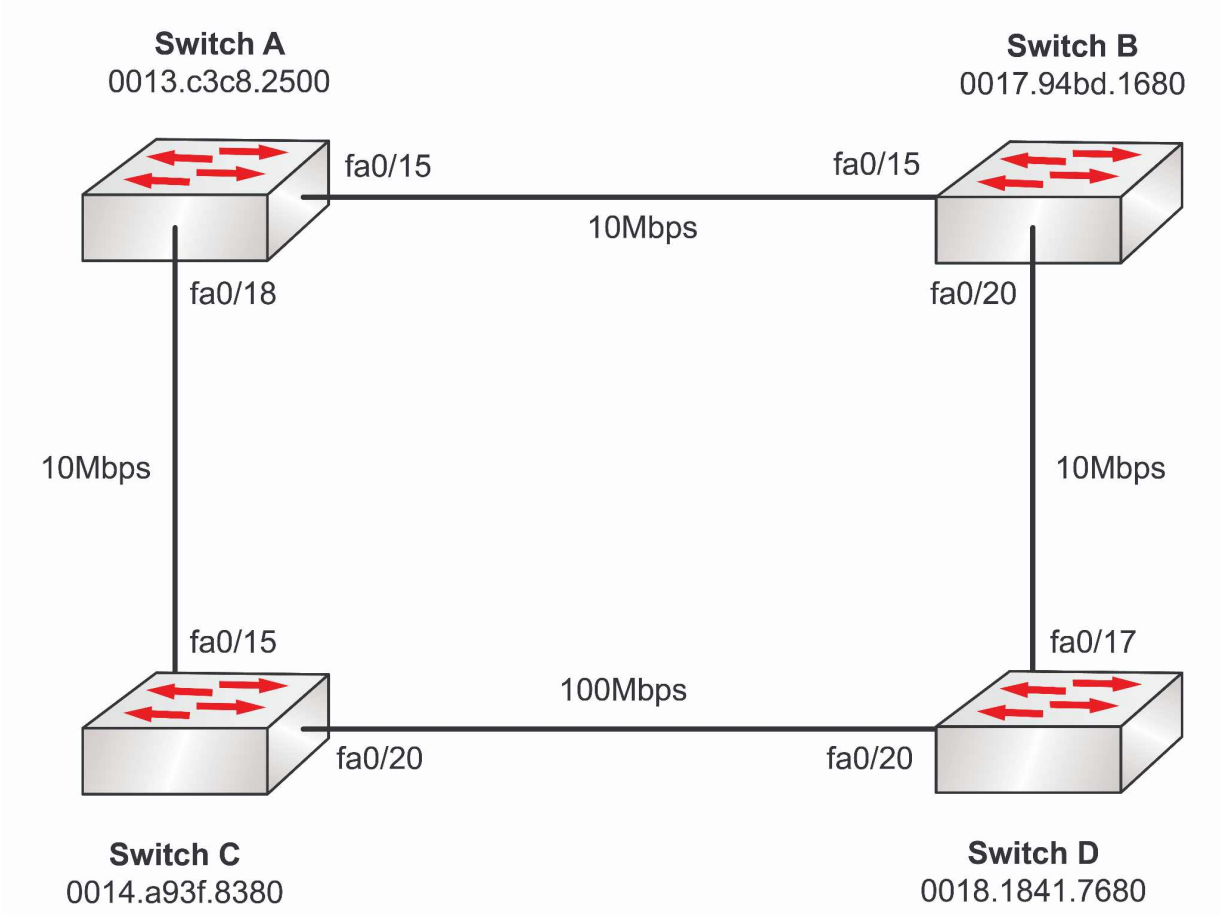
Answer: F.

Question 46:
You add the below command to your switch. What increments can be used?
Switch(config)#spanning-tree vlan 5 priority ?

A. 4096
B. 8192
C. 1024
D. 2048

Answer: A.

Question 47:
Regarding the below STP topology. Which ports will become root ports? (choose all that apply)



A. Switch B f0/20
B. Switch D f0/17
C. Switch C f0/20
D. Switch D f0/20
E. Switch C f0/15
F. Switch B f0/15

Answer: D, E, F.

Question 48:
Challenge Handshake Authentication Protocol (CHAP) uses a three-way handshake and never sends the password over the link in clear text. What are the three steps used?

A. Release
B. Accept/Reject
C. Authenticate

D. Response
E. Challenge

Answer: B, D, E.

Question 49:
The extended range of VLAN numbers is?

A. 1001-1005
B. 1000-1999
C. 1006-4094
D. 100-199

Answer: C.

Question 50:
For non-root bridges, there will be only one root port. The root port will be the port with the highest path cost to the root bridge (i.e., the best/fastest path).

A. True
B. False

Answer: B.

Explanation
lowest path cost not highest

Question 51:
Link Aggregation Control Protocol (LACP) supports which two modes of operations?

A. Standby
B. Desirable
C. Auto
D. Active
E. Passive

Answer: D, E.

Question 52:
With a packet-switched connection, you have no choice in which path your data takes. Typically, the service provider's policy will allow for an optimal path, which is decided depending on how much traffic is saturating their connections.

A. False
B. True

Answer: B.

Question 53:
The network _____ comprises the switches, routers, and wired and wireless links, which essentially is your network infrastructure.

A. overlay
B. CRUD
C. API
D. underlay

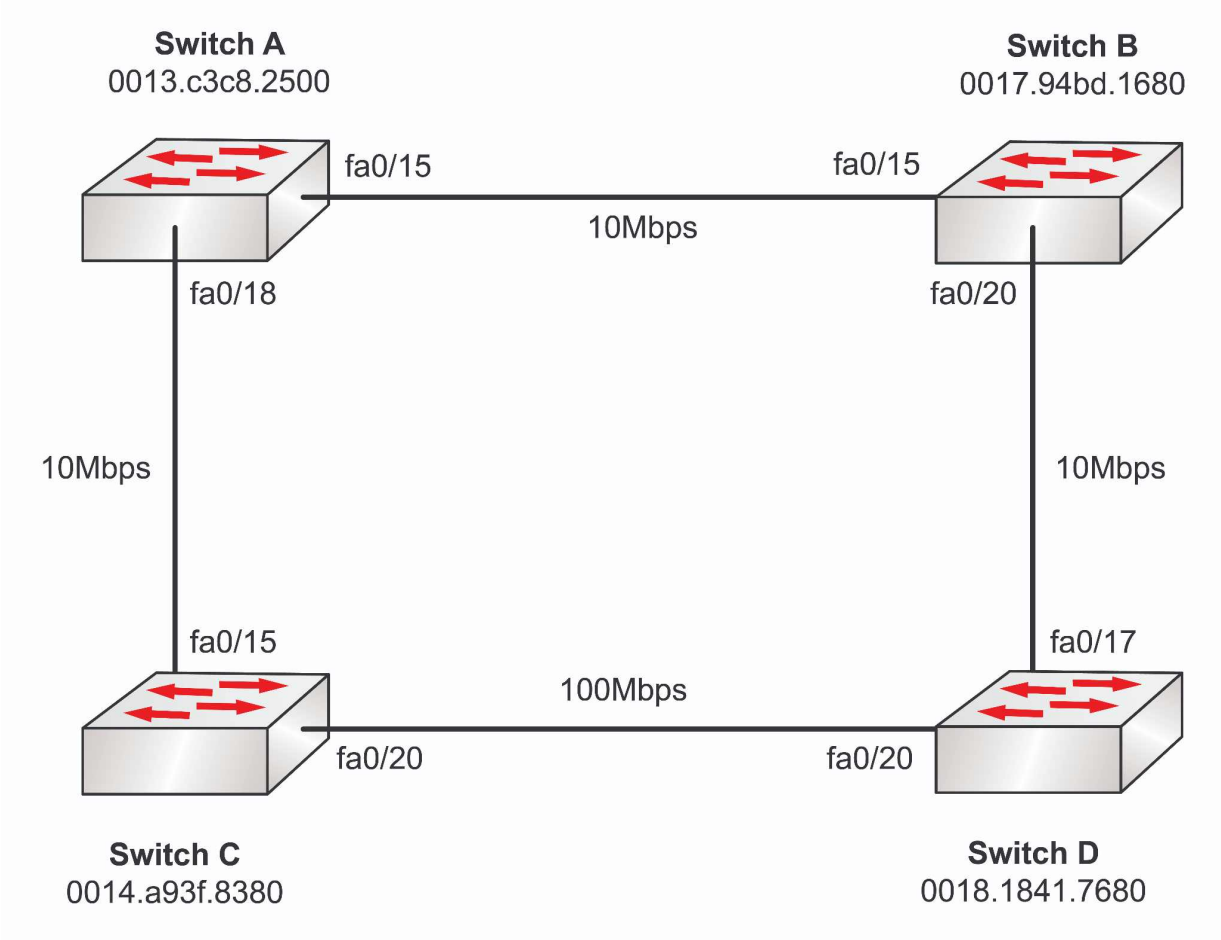
Answer: D.

Question 54:
Which of the STP port costs are correct? (choose all that apply)

A. 10 Gbps = 1
B. 1 Gbps = 4
C. 10 Mbps = 100
D. 100 Mbps = 19

Answer: B, C, D.

Question 55:
Your boss shows you the below topology diagram and asks you which switch (bridge) will become the root bridge. What do you tell him (presuming all settings are left at default).



A. B
B. A
C. D
D. C

Answer: B.

Explanation
A has the lowest MAC address. The link speeds will affect root/bridge port election not root bridge.

Question 56:
EtherChannels can also be configured as layer 3 logical interfaces. Which command would you use? (choose all that apply)

A. Switch(config)#interface channel 10
B. Switch(config -if)#switchport

C. Switch(config-if)#no switchport
D. Switch(config-if)#ip address 10.0.0.1 255.255.255.0
E. Switch(config)#interface port-channel 10

Answer: C, D, E.

Question 57:
STP BPDUs are multicast frames that are sent out every _____ from every port (you can see the Hello time in the output above).

A. two minutes
B. two seconds
C. 30 seconds
D. 60 seconds

Answer: B.

Question 58:
You can see the below output on your router. Which command was just issued?

Multilink1
Bundle name: R2
Remote Endpoint Discriminator: [1] R2
Local Endpoint Discriminator: [1] R1
Bundle up for 00:02:02, total bandwidth 1544, load 1/255
Receive buffer limit 12000 bytes, frag timeout 1000 ms
0/0 fragments/bytes in reassembly list
0 lost fragments, 0 reordered
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0/0 discarded fragments/bytes, 0 lost received
0x0 received sequence, 0x0 sent sequence
Member links: 1 active, 0 inactive (max not set, min not set)
Se0/0, since 00:02:02
No inactive Multilink interfaces

A. show ppp multilink

B. show multilink brief mt f0/0
C. show multilink summary
D. show multilink brief

Answer: A.

Question 59:
_____ APIs enable communication between the controller and the networking devices.
A. Southbound
B. Westbound
C. Eastbound
D. Northbound

Answer: A.

Question 60:
In order to configure extended range VLANs, VTP must be disabled by putting the switch into client mode.
A. True
B. False

Answer: B.

Explanation
In order to configure extended range VLANs, VTP must be disabled by putting the switch into transparent mode.

Question 61:
You need to add portfast to a switch port. Which command do you apply?
A. portfast vlan 1
B. spanning-tree portfast
C. switchport portfast
D. portfast

Answer: B.

Question 62:
Port Aggregation Protocol (PAgP) operates in which two modes?

A. Desirable
B. Passive
C. Auto
D. Active
E. Standby

Answer: A, C.

Question 63:
BRI is the ISDN service most people use to connect to the Internet. An ISDN BRI connection supports __ 64 Kbps B-channels and __ 16 Kbps D-channel (s) over a standard phone line.

A. 2/1
B. 4/8
C. 8/16
D. 4/16

Answer: A.

Question 64:
Regarding REST, it is an architecture (not a protocol) that resides on HTTP/HTTPS protocols in the application layer.

A. True
B. False

Answer: A.

Question 65:
You issue a 'show spanning-tree vlan #' command. All values are left at default. What would the VLAN number be?

Spanning tree enabled protocol ieee

Root ID Priority 32868
Address 0090.0CDB.182B
This bridge is the root
Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec

A. 1
B. 1000
C. 10
D. 100

Answer: D.

Explanation
The default priority is 32768 + the VLAN ID so we can see it must be VLAN 100 to give us 32868.

Question 66:
Which command will print a summary of Etherchannel channel group 10?

A. show summary port-channel 10
B. show port-channel10 brief
C. show etherchannel 10 summary
D. show etherchannel 10 brief

Answer: C.

Question 67:
Which command will put a group of switch interfaces into channel group 6 for PAgP?

A. Switch(config-if-range)#channel-group 6 mode desirable
B. Switch(config-if-range)#channel-group 6 mode active
C. Switch(config-if-range)#group 6 mode desirable
D. Switch(config-if-range)#channel-group 6 desirable

Answer: A.

Question 68:

The T1 standard offers a data rate of ___ Mbps and it contains ___ digital channels.

A. 1.544 (Mbps)
B. 24
C. 16
D. 44 (Mbps)

Answer: A, B.

Question 69:
In reference to the below output, what is the setting for the port?

Switch#show int f0/2 switchport
Name: Fa0/2
Switchport: Enabled
Administrative Mode: dynamic auto
Operational Mode: down
Administrative Trunking Encapsulation: dot1q
Operational Trunking Encapsulation: native
Negotiation of Trunking: On
Access Mode VLAN: 1 (default)
Trunking Native Mode VLAN: 1 (default)
Voice VLAN: none
Administrative private-vlan host-association: none
Administrative private-vlan mapping: none
Administrative private-vlan trunk native VLAN: none
Administrative private-vlan trunk encapsulation: dot1q
Administrative private-vlan trunk normal VLANs: none
Administrative private-vlan trunk private VLANs: none
Operational private-vlan: none
Trunking VLANs Enabled: ALL
Pruning VLANs Enabled: 2-1001
Capture Mode Disabled
Capture VLANs Allowed: ALL
Protected: false
Appliance trust: none

A. Trunk
B. Auto
C. Blocking
D. Access

Answer: B.

Question 70:
VPNs can be broadly classified as follows. (choose all that apply)
A. Site-to-site VPNs
B. Auto terminate VPN
C. User control VPN
D. Remote access VPNs
E. Dynamic Multipoint Virtual Private Network (DMVPN)

Answer: A, D, E.

Question 71:
STP ensures there are only two root bridges per VLAN.
A. True
B. False

Answer: B.

Explanation
One per VLAN but you can have a secondary on standby but it won't become the root bridge until the primary one fails.