



MALAYSIAN INSTITUTE OF INFORMATION TECHNOLOGY

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**FINAL EXAMINATION  
JANUARY 2016 SEMESTER**

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**SUBJECT CODE** : IFD20504  
**SUBJECT TITLE** : CCNA 3: LAN TECHNOLOGY  
**LEVEL** : DIPLOMA  
**TIME / DURATION** : ( 2 HOURS ) 2.00 pm – 4.00 pm  
**DATE** : 22 MAY 2016

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**INSTRUCTIONS TO CANDIDATES**

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1. Please read the instructions given in the question paper CAREFULLY.
2. This question paper is printed on both sides of the paper.
3. This question paper consists of TWO (2) sections. Section A and B.
4. Answer ALL questions in Section A. For Section B, answer THREE (3) questions only.
5. Please write your answers on the OMR form and answer booklet provided.
6. Answer all questions in English.

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THERE ARE 8 PAGES OF QUESTIONS, EXCLUDING THIS PAGE.

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**SECTION A (Total: 25 marks)****INSTRUCTION: Answer ALL questions.****Please use the OMR sheet provided.**

1. What are the benefits of extending access layer and connectivity to users through a wireless medium?
  - A. Reduced costs and increased flexibility
  - B. Increased bandwidth availability
  - C. Decreased number of critical points of failure
  - D. Increased network management options
  
2. What are the functions of a router?
  - A. It controls the flow of data via the use of Layer 2 address.
  - B. It increased the size of the broadcast domain.
  - C. It determine the best path to send the packets
  - D. It manages the VLAN database
  
3. Which design features will limit the size of a failure domain in an enterprise network?
  - A. The purchase of enterprise equipment that is designed for large traffic volume.
  - B. The installation of redundant power supplies
  - C. The use of the building switch block approach
  - D. The use of a collapsed core design
  
4. How can an enterprise network be designed to optimized bandwidth?
  - A. By installing devices with failover capabilities
  - B. By deploying a collapsed core model
  - C. By organizing the network to control traffic pattern
  - D. By limiting the size of failure domains
  
5. Which RSTP ports are connected to end devices?
  - A. Root ports
  - B. Designated ports
  - C. Trunk ports
  - D. Edge ports
  
6. If no bridge priority is configured in PVST, which criteria is considered when electing the root bridge?
  - A. Highest IP address
  - B. Lowest MAC address
  - C. Lowest IP address
  - D. Highest MAC address
  
7. Which port state will switch ports immediately transition to when configured for PortFast?
  - A. Forwarding
  - B. Blocking
  - C. Learning
  - D. Listening

8. Which STP priority configuration would ensure that a switch would always be the root switch?
  - A. spanning-tree vlan 10 root primary
  - B. spanning-tree vlan 10 priority 4096
  - C. spanning-tree vlan 10 priority 0
  - D. spanning-tree vlan 10 priority 61440
9. What additional information is contained in the 12-bit extended system-ID of a BPDU?
  - A. MAC address
  - B. VLAN ID
  - C. Port ID
  - D. IP address
10. What is the outcome of a Layer 2 broadcast storm?
  - A. CSMA/CD will cause each host to continue transmitting frames
  - B. ARP broadcast request are returned to transmitting host
  - C. Routers will take over the forwarding of frame as switch.
  - D. New traffic is discarded by the switch because it is unable to be processed.
11. When a range of ports is being configured for EtherChannel, which mode will configure LACP so that it initiates the EtherChannel negotiation?
  - A. Desirable
  - B. Auto
  - C. Active
  - D. Passive
12. Which command will initiate EtherChannel interface configuration mode?
  - A. Interface port-channel interface identifier
  - B. Interface interface-identifier
  - C. Interface range
  - D. Channel-group identifier
13. Which statement is true regarding the use of PAgP to create EtherChannels?
  - A. It requires more physical links than LACP does
  - B. It is Cisco proprietary
  - C. It requires full duplex
  - D. It increases the number of ports
14. What is the best practice to use before beginning an EtherChannel implementation?
  - A. Shut down each of the affected interfaces
  - B. Assign affected interfaces to VLAN 1
  - C. Enable each of the affected interfaces
  - D. Assign the affected interface to unused VLAN.
15. Which load balancing methods can be implemented with EtherChannel technology?
  - A. Source IP to destination IP
  - B. Destination IP to sources
  - C. Destination IP to MAC address
  - D. Destination MAC to sources MAC

16. What is the one advantage of using multiarea OSPF?
- A. It improves the routing efficiency by reducing the routing table and link-state update overhead.
  - B. It enables multiple routing protocols to be running in the large network
  - C. It increased the routing performance by dividing the neighbor table into separate smaller ones.
  - D. It allows OSPFv2 and OSPFv3 to be running together.
17. Which command can be used to verify the contents of the LSDB in an OSPF area?
- A. show ip route ospf
  - B. show ip ospf database
  - C. show ip ospf interface
  - D. show ip ospf neighbor
18. Which characteristic describe both ABRs and ASBRs that are implemented in a multiarea OSPF network?
- A. They usually have many local network attached.
  - B. They both run multiple routing protocol simultaneously
  - C. They are required to perform any summarization or redistribution task
  - D. They are required to reload frequently and quickly in order to update the LSDB.
19. Which network is part of summary route 192.168.32.0/22?
- A. 192.168.35.0/24
  - B. 192.168.36.0/24
  - C. 192.168.37.0/24
  - D. 192.168.35.0/25
20. Which command can be issued on a router to verify that automatic summarization is enables?
- A. show ip eigrp neighbors
  - B. show ip protocols
  - C. show ip interface brief
  - D. show ip eigrp interfaces
21. In which IOS CLI mode must a network administrator issue the maximum-paths command to configure load balancing in EIGRP?
- A. router configuration mode
  - B. interface configuration mode
  - C. global configuration mode
  - D. privileged mode
22. Two routers R1 and R2 have established an EIGRP neighbor relationship but there is still a connectivity problem. Which issue could be causing this problem?
- A. A process ID mismatch
  - B. An authentication mismatch
  - C. An access list that is blocking advertisements from other networks
  - D. Automatic summarization that is disable on both routers

23. In which scenario will the use of EIGRP automatic summarization cause inconsistent routing in a network?
- A. When there is no common subnet that exists between neighboring routers
  - B. When the routers in an IPv4 network have mismatching EIGRP AS numbers
  - C. When there is no adjacency that is established between neighboring routers
  - D. When the routers in an IPv4 network are connected to discontinuous network with automatic summarization enabled.
24. Which statement are the advantages of using automatic summarization?
- A. It decreases the number of entries in the routing table
  - B. It maximizes the number of routed in the routing table
  - C. It improves reachability in discontinuous network
  - D. It increases the sizes of routing updates.
25. Which of the following is the characteristic of manual route summarization?
- A. Requires high bandwidth utilization for the routing updates
  - B. Has to be configured globally on the router
  - C. Reduces total number of routers in routing tables
  - D. Cannot include supernet routes

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**SECTION B** (Total: 75 marks)

**INSTRUCTION: Answer THREE (3) questions ONLY.**

Please use the answer booklet provided.

**Question 1**

(a) Based on the given information below, design a complete network topology and place the devices at the appropriate levels of the Cisco three-layer hierarchical model design.

Please label all the devices and cable. Details are below:

- i. One 2911 series router (10 marks)
  - ii. One 3560 switch (2 marks)
  - iii. One 2960 switch (3 marks)
  - iv. Four user workstations (PCs or laptops) (4 marks)
  - v. One printer (6 marks)
- (b) Defined Converged Network. (2 marks)
- (c) Describe VTP. (3 marks)
- (d) State the benefit of using VTP. (4 marks)
- (e) Define redundancy and list **TWO [2]** methods to implement it. (6 marks)

[Total: 25 marks]

**Question 2**

Based on Figure 1, answer the following questions.

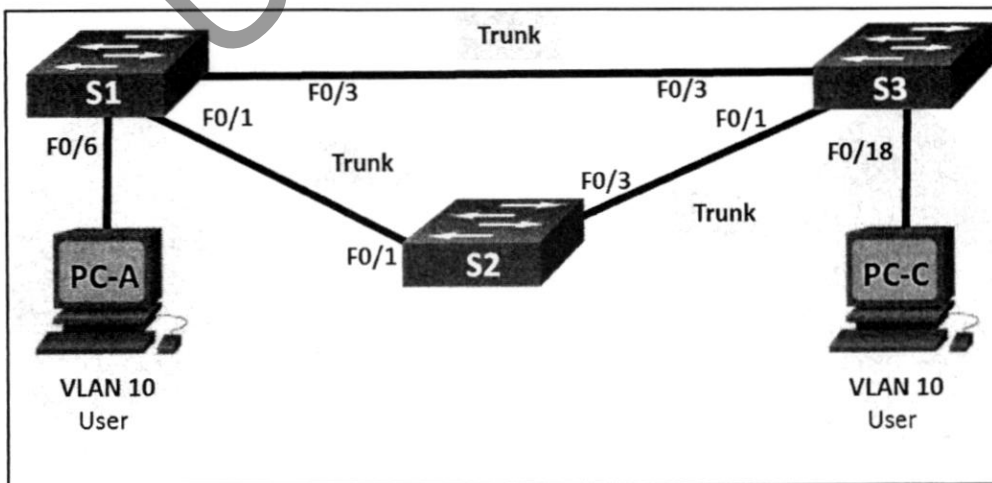


Figure 1 Network Topology

- (a) Write a series of command to show the configuration of VLANs, Native VLAN, and Trunks at S1. Name VLAN 10 as User and VLAN 99 as Management. (4 marks)
- (b) Write a series of command to enable user ports in access mode and assign VLAN 10 at S1 F0/6 and S3 F0/18. (7 marks)
- (c) Write a series of command to configure the trunk ports and assign to native VLAN 99 for port F0/1 and F0/3 at S3. (4 marks)
- (d) Define a broadcast storm. How does a broadcast storm develop? (3 marks)
- (e) Explain a switching loop and the causes of a switching loop. (3 marks)
- (f) By what method that you can mitigate broadcast storms and switching loops caused by introducing redundant switches to your network? (2 marks)
- (g) In answer to this scenario, state the first step (after visually checking your network) to correcting the described network problem? (2 marks)

[Total: 25 marks]

**Question 3**

Based on Figure 2, answer the following questions.

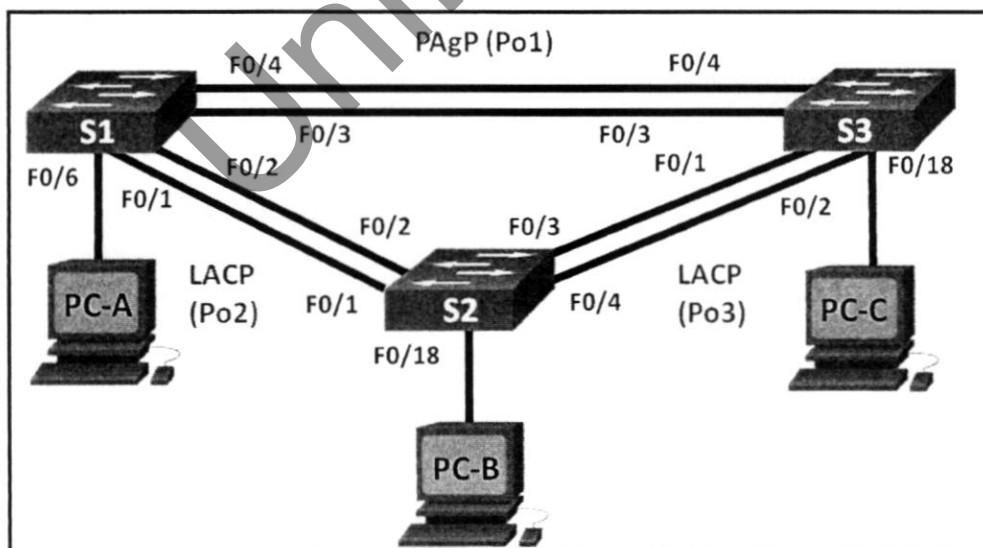


Figure 2 Network Topology

(a) Write a series of command to configure the PAgP and trunk ports on S1 and S3. (16 marks)

(b) Write a series of command to configure LACP between S1 and S2. (9 marks)

[Total: 25 marks]

**Question 4**

Based on Figure 3, answer the following questions.

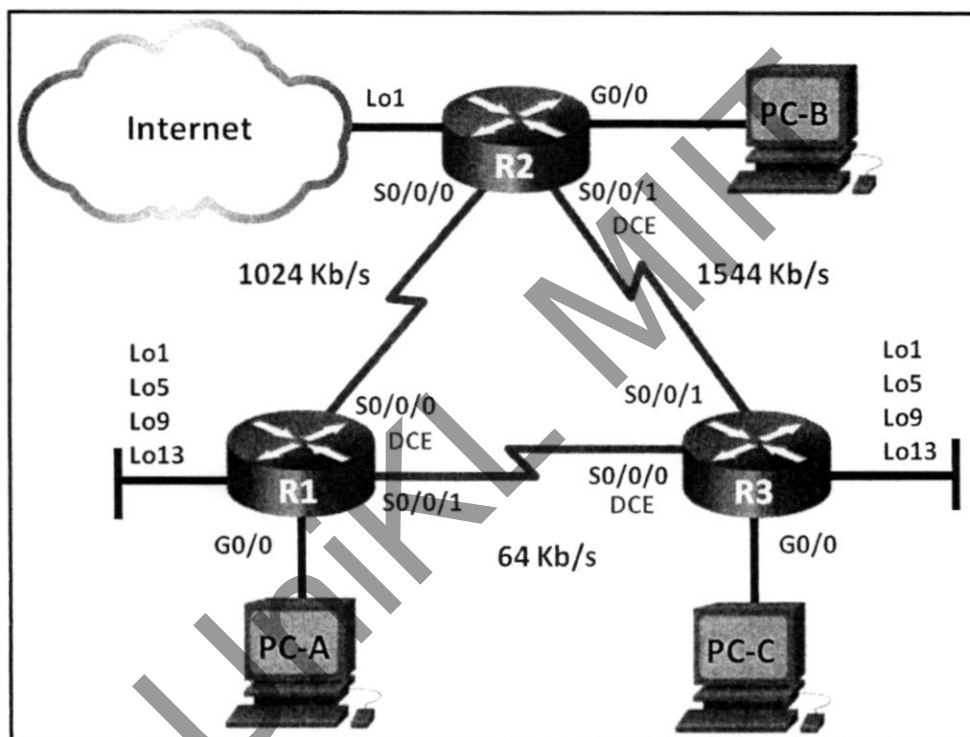


Figure 3 Network Topology

- On R1, write the commands to configure EIGRP routing with an autonomous system (AS) ID of 1 for all directly connected networks. (7 Marks)
- For the LAN interface on R1, write the command to disable the transmission of EIGRP hello packets. (2 marks)
- On R1, write the series of command to configure the bandwidth for S0/0/0 to 1024 Kb/s and the bandwidth for S0/0/1 to 64 Kb/s. (4 marks)



- (d) Write the command to configure and propagate a Default Static Route on R2. (7 marks)
- (e) Write the command to configure the serial link between R1 and R2 to allow only 75 percent of the link bandwidth for EIGRP traffic. (5 marks)

[Total: 25 marks]

END OF EXAMINATION PAPER

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