



MALAYSIAN INSTITUTE OF INFORMATION TECHNOLOGY

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**FINAL EXAMINATION  
JANUARY 2016 SEMESTER**

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**SUBJECT CODE** : IFD30104  
**SUBJECT TITLE** : CCNA4: WAN TECHNOLOGY  
**LEVEL** : DIPLOMA  
**TIME / DURATION** : ( 2 ½ HOURS ) 2.00 pm – 4.30 pm  
**DATE** : 25 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) parts. Part A and B.
4. Answer ALL questions.
5. Please write your answers on the answer booklet provided.

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THERE ARE 8 PAGES OF QUESTIONS, EXCLUDING THIS PAGE.

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**PART A (Total: 20 marks)****MULTIPLE CHOICE QUESTIONS****INSTRUCTION: Answer ALL questions.****Please use the answer booklet provided.**

1. What is an important first consideration when starting to design a network?
  - A. size of the network
  - B. access security
  - C. protocols to be used
  - D. type of applications
  
2. In which layer of the hierarchical enterprise LAN design model would PoE for VoIP phones and access points be considered?
  - A. Core
  - B. Physical
  - C. Access
  - D. Distribution
  
3. Which WAN technology is cell-based and well suited to carry voice and video traffic?
  - A. VSAT
  - B. ISDN
  - C. Frame Relay
  - D. ATM
  
4. Which network scenario will require the use of a WAN?
  - A. Employees need to access web pages that are hosted on the corporate web servers in the DMZ within their building.
  - B. Employees need to connect to the corporate email server through a VPN while traveling.
  - C. Employee workstations need to obtain dynamically assigned IP addresses.
  - D. Employees in the branch office need to share files with the headquarters office that is located in a separate building on the same campus network.
  
5. How does PPP interface with different network layer protocols?
  - A. by specifying the protocol during link establishment through LCP
  - B. by encoding the information field in the PPP frame
  - C. by using separate NCPs
  - D. by negotiating with the network layer handler

6. Which is an advantage of using PPP on a serial link instead of HDLC?
- A. option for session establishment
  - B. higher speed transmission
  - C. option for authentication
  - D. fixed-size frames
7. In which situation would the use of PAP be preferable to the use of CHAP?
- A. when plain text passwords are needed to simulate login at the remote host
  - B. when router resources are limited
  - C. when multilink PPP is used
  - D. when a network administrator prefers it because of ease of configuration
8. Which technology allows a Layer 3 IPv4 address to be dynamically obtained from a Layer 2 DLCI?
- A. Neighbor Discovery
  - B. Address Resolution Protocol
  - C. Inverse Neighbor Discovery
  - D. Inverse Address Resolution Protocol
9. Which version of NAT allows many hosts inside a private network to simultaneously use a single inside global address for connecting to the Internet?
- A. PAT
  - B. static NAT
  - C. dynamic NAT
  - D. port forwarding
10. Which statement accurately describes dynamic NAT?
- A. It always maps a private IP address to a public IP address.
  - B. It provides an automated mapping of inside local to inside global IP addresses.
  - C. It provides a mapping of internal host names to IP addresses.
  - D. It dynamically provides IP addressing to internal hosts.
11. Which broadband wireless technology is based on the 802.11 standard?
- A. CDMA
  - B. Municipal Wi-Fi
  - C. UMTS
  - D. WiMAX

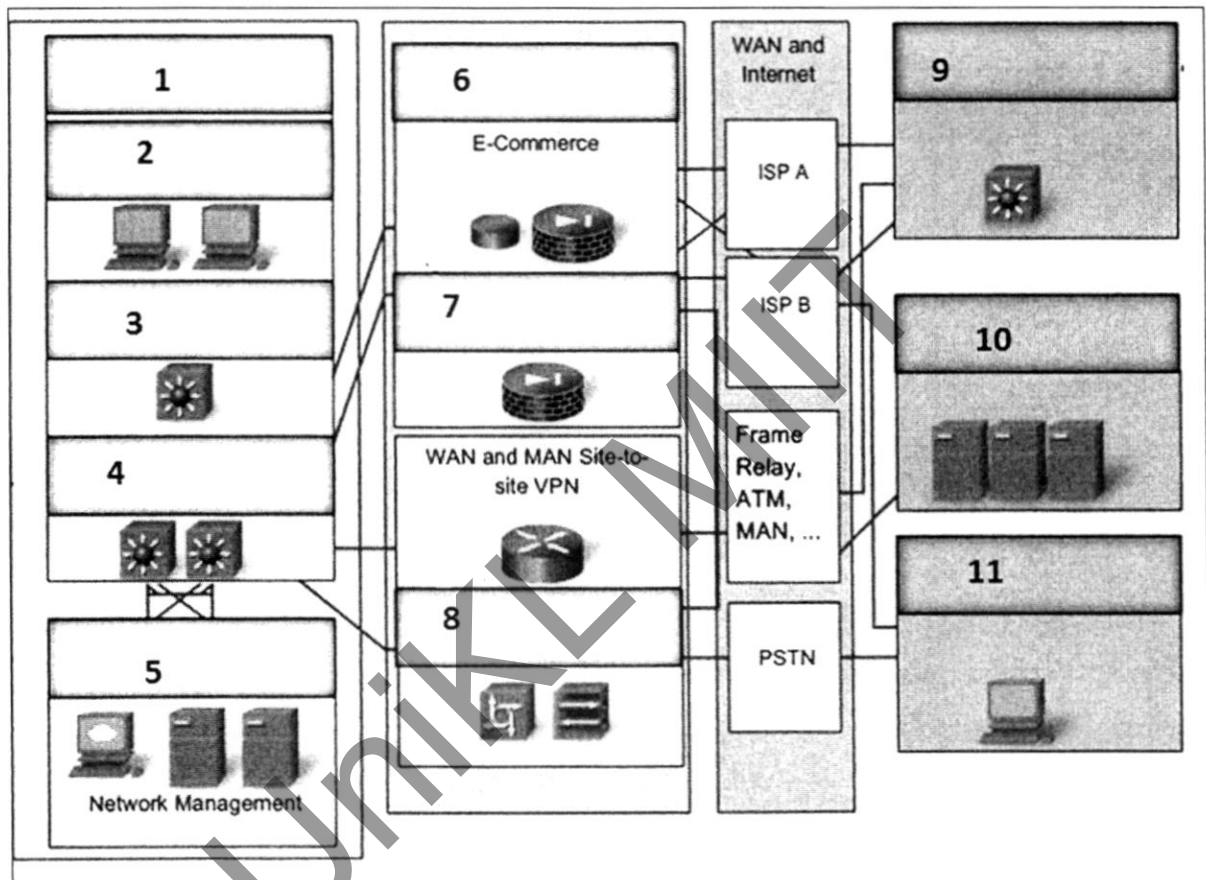
12. Which two (2) network components does a teleworker require to connect remotely and securely from home to the corporate network?
- VPN client software or VPN-enabled router
  - broadband Internet connection
  - VPN server or concentrator
  - authentication server
- A. I and II  
B. II and III  
C. III and IV  
D. I and IV
13. Which type of long distance telecommunication technology provides point-to-point connections and cellular access?
- A. WiMax  
B. Satellite  
C. mobile broadband  
D. municipal Wi-Fi
14. Which function of IPsec security services allows the receiver to verify that the data was transmitted without being changed or altered in any way?
- A. Confidentiality  
B. anti-replay protection  
C. data integrity  
D. authentication
15. Which two (2) scenarios are examples of remote access VPNs?
- All users at a large branch office can access company resources through a single VPN connection.
  - A mobile sales agent is connecting to the company network via the Internet connection at a hotel.
  - A small branch office with three employees has a Cisco ASA that is used to create a VPN connection to the HQ.
  - An employee who is working from home uses VPN client software on a laptop in order to connect to the company network.
- A. I and II  
B. II and III  
C. III and IV  
D. II and IV

16. Which destination do Cisco routers and switches use by default when sending syslog messages for all severity levels?
- A. RAM
  - B. NVRAM
  - C. nearest syslog server
  - D. console
17. When logging is used, which severity level indicates that a device is unusable?
- A. Critical – Level 2
  - B. Alert – Level 1
  - C. Emergency-Level 0
  - D. Error-Level 3
18. What are the most common syslog messages?
- A. output messages that are generated from debug output
  - B. linkup and link down messages
  - C. those that occur when a packet matches a parameter condition in an access control list
  - D. error messages about hardware or software malfunctions
19. After which step in the network troubleshooting process would one of the layered troubleshooting methods be used?
- A. documenting symptoms
  - B. determining ownership
  - C. narrowing the scope
  - D. gathering symptoms from suspect devices
20. A network engineer is troubleshooting a network problem and can successfully ping between two devices. However, Telnet between the same two devices does not work. Which OSI layers should the administrator investigate next?
- A. all of the layers
  - B. from the network layer to the application layer
  - C. from the network layer to the physical layer
  - D. only the network layer

**INSTRUCTION: Answer ALL Questions.**  
Please use the answer booklet provided.

**Question 1**

- a. Cisco developed Cisco Enterprise Architecture model to support modularity in network design. Figure 1 shows the model of the architecture. List the modules of the architecture as numbered in the figure. (5.5 marks)



**Figure 1**

- b. Describe about the hierarchical network design for LAN campus with the help of a diagram. (9 marks)

c. ISPs can use either private or public WAN infrastructure to connect to the enterprise edge. Identify the WAN access options as shown in Figure 2.

(5.5 marks)

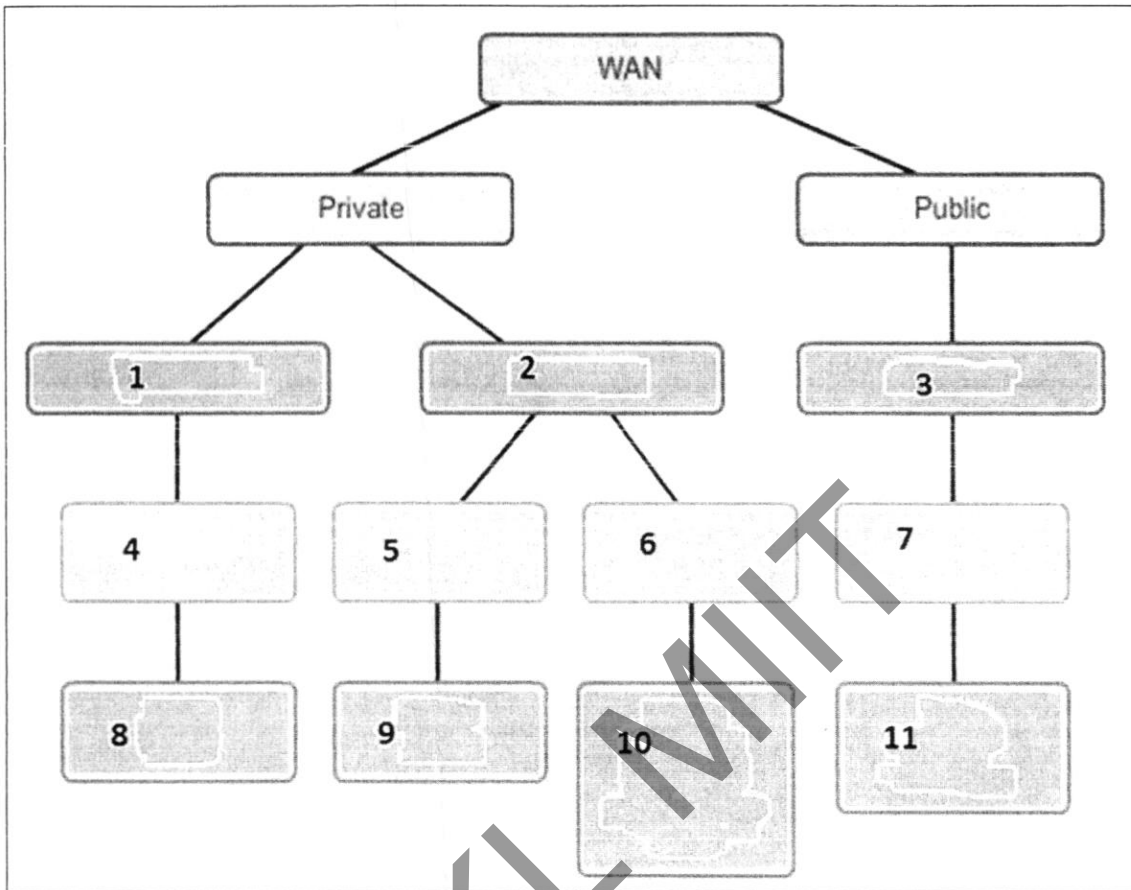


Figure 2

[Total: 20 marks]

Question 2

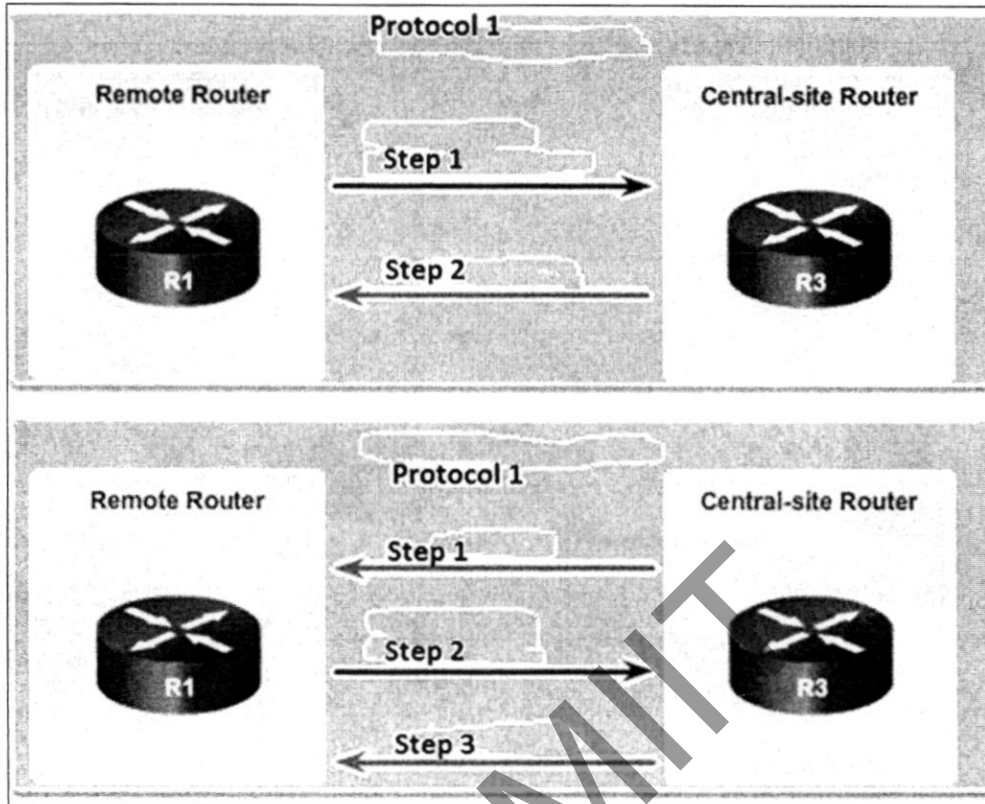


Figure 3

- a. PPP provides authentication options to secure the communication between two parties. Identify the authentication protocols and explain the operation of both authentication protocols by referring to Figure 3. (6 marks)

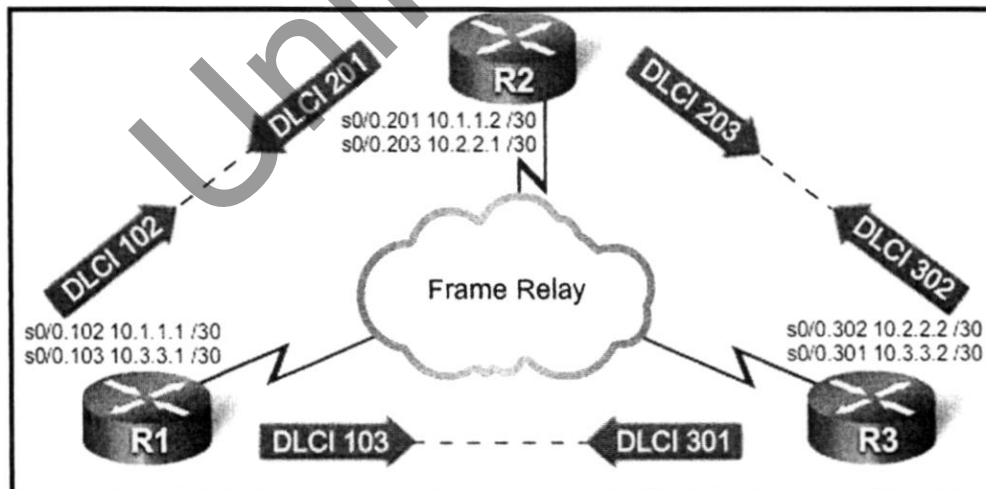


Figure 4

- b. Refer to Figure 4 and configure point-to-point frame relay connections in R2. Begin with global configuration mode. (10 marks)



- c. Frame relay uses virtual circuit to establish connection between two nodes. Describe **TWO (2)** ways to establish virtual circuits. (4 marks)

[Total: 20 marks]

### Question 3

- a. Define static and dynamic NAT. (4 marks)

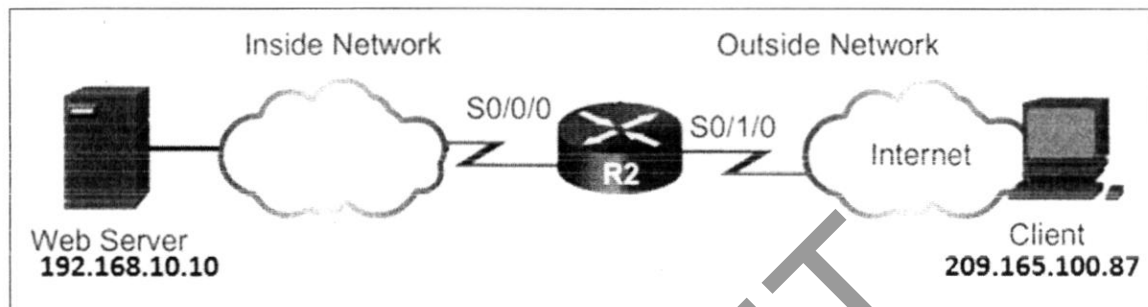


Figure 5

- b. Refer to Figure 5 and configure static NAT for the network shown. The public IP address used is 209.165.101.5. (8 marks)
- c. Define teleworking. Identify the benefits of teleworking for employers, government and individuals. Give **TWO (2)** each. (8 marks)

[Total: 20 marks]

### Question 4

- a. IPsec is protocol suite for securing IP communications. Briefly describe about **TWO (2)** main IPsec framework protocols. Give **TWO (2)** algorithms used by IPsec. (6 marks)
- b. There's wide variety of troubleshooting tools available to assist in managing the network. Describe **FOUR (4)** category of the software troubleshooting tools. Give example of one tool for each category. (10 marks)
- c. Troubleshooting can be done efficiently with proper procedure. Illustrate the general troubleshooting procedure using a flowchart. (4 marks)

[Total: 20 marks]

END OF EXAMINATION PAPER