SPECIALITY :**COMPUTER ENGINEERING**

OPTION : **COMPUTER SCIENCE AND NETWORK**

EXAM PAPER: **COMPUTER NETWORKING**

CODE :

CREDIT VALUE :**7**

DURATION :**4 HOURS**

NATURE OF EXAM :**WRITTEN**

**SECTION A:  : Networking** Basics                                      50marks


**SECTION A1: MCQs                        20marks**

1. OSI stands for _____

a) open system interconnection  b) operating system interface c) optical service implementation

d)   open service Internet

2. The number of layers in ISO OSI reference model is _____

a) 4  b) 5   c) 6     d) 7

3. TCP/IP model does not have _____ layer but OSI model have this layer.

a) session layer     b) transport layer      c) application layer  d) network layer

4. Which layer is used to link the network support layers and user support layers?

a) session layer  b) data link layer  c) transport layer      d) network layer

5. Which address is used on the internet for employing the TCP/IP protocols?

a) physical address and logical address b) port address  c) specific address

 d) all of the mentioned

6  If a host on a network has the address 172.16.45.14/30, what is the subnetwork this host

belongs to?

  **A.**   172.16.45.0

  **B.**   172.16.45.4

  **C.**   172.16.45.8

**D.** 172.16.45.12

7. Using the following illustration, what would be the IP address of E0 if you were using the eighth subnet? The network ID is 192.168.10.0/28 and you need to use the last available IP address in the range. The zero subnet should not be considered valid for this question.
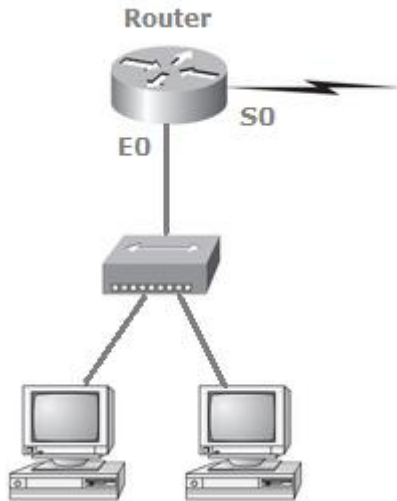
Router



**A.** 192.168.10.142

**B.** 192.168.10.66

**C.** 192.168.100.254

**D.** 192.168.10.143

8. Which configuration command must be in effect to allow the use of 8 subnets if the Class C subnet mask is 255.255.255.224?

**A.** *Router(config)#ip classless*

**B.** *Router(config)#no ip classful*

**C.** *Router(config)#ip unnumbered*

**D.** *Router(config)#ip subnet-zero*

9. Using the illustration from the previous question, what would be the IP address of S0 if you were using the first subnet? The network ID is 192.168.10.0/28 and you need to use the last available IP address in the range. Again, the zero subnet should not be considered valid for this question.

   **A.** 192.168.10.24

   **B.** 192.168.10.62

   **C.** 192.168.10.30

   **D.** 192.168.10.127

10. What is the subnetwork address for a host with the IP address 200.10.5.68/28?

    **A.** 200.10.5.56

    **B.** 200.10.5.32

    **C.** 200.10.5.64

    **D.** 200.10.5.0

**SECTION A2: Structural**                        **30marks**

    **1.** How many bits has a MAC address? How many parts? Give the different portions? **4mks**

    2. What are the differences between and IP address and a domain name         **2mks**

    3. .Explain each of the following access techniques while stating an example of a network technology or protocol used in each case . state the topology used by your example above

        a. CSMA/CD

        b. . CSMA/CA:

        c. Token Passing

      d. .Random Access Method                                  **9mks**

4. State the different classes of IP addresses, the range of IP addresses in each class, the number of hosts and networks that can be obtained in each class and the application of each class. 7 mks

5. what is a private IP address? State the range of private IP addresses that can be got from class A, B and C. 2mks

      . Consider the IP address 190.20.0.0.

a) What is its class   1mk

b) Create as many subnets as possible from the above address such that each subnet should have at least 60 hosts.  5mks

**SECTION B: Network administration**          **50m arks**

**SECTION B1: MCQs**               **20marks**

1. A manager is a host that runs the SNMP _____ process.
    A) client
    B) server
    C) both a and b
    D) none of the above
2. An SNMP agent can send _____ messages.
    A) Response
    B) GetRequest
    C) SetRequest
    D) none of the above
3. SMI uses another standard, _____, to encode data to be transmitted over the network.
    A) MIB
    B) ANS.1
    C) BER
    D) none of the aboveView Answer:
4. We can compare the task of network management to the task of writing a program. Both tasks need variable declarations. In network management this is handled by _____.
    A) SMNP
    B) MIB
    C) SMI
    D) none of the above
5. We can compare the task of network management to the task of writing a program. Both tasks need rules. In network management this is handled by _____.
    A) SMNP
    B) MIB

C) SMI

D) none of the above

6. A packet filter firewall filters at _____

a) Physical layer  b) Data link layer  c) Network layer or Transport layer  d) Application layer

7. What is one advantage of setting up a DMZ with two firewalls?

a) You can control where traffic goes in three networks b) You can do stateful packet filtering c) You can do load balancing  d) Improved network performance

8. What tells a firewall how to reassemble a data stream that has been divided into packets?

a) The source routing feature  b) The number in the header's identification field c) The destination IP address d) The header checksum field in the packet header

9. A stateful firewall maintains a _____ which is a list of active connections.

a) Routing table    b) Bridging table   c) State table   d) Connection table

10. A firewall needs to be _____ so that it can grow proportionally with the network that it protects.

a) Robust    b) Expansive    c) Fast    d) Scalable

## SECTION B2: Structural                                    30marks

1. Why Does Active Ftp Not Work With Network Firewalls?   3mks

2. Name One Secure Network Protocol Which Can Be Used Instead Of Telnet To Manage A Router?  1mk

3. Provide A Reason As To Why Https Should Be Used Instead Of Http? 2mks

4. How Can You Prevent A Brute Force Attack On A Windows Login Page? 2mks

5. What Is A Firewall?  2mks

6. Business _____ Theft Involves Stealing Proprietary Business Information Such As Research For A New Drug Or A List Of Customers That Competitors Are Eager To Acquire?  1mk

7. What Is Administrator Privileges When Trying To Install A Download? 2mks

8. In A _____ Attack, Attackers Can Attackers Use Hundreds Or Thousands Of Computers In An Attack Against A Single Computer Or Network? 1mk

9. _____ Ensures That Information Is Correct And That No Unauthorized Person Or Malicious Software Has Altered That Data? 1mk

**10.** Which technology provides automatic failover to a different server if one server fails? 1mk

**11.** On your network, you promote a server as the first domain controller. Which Active Directory domain containers are created by default? 1mk

**12.** You are selecting a disk storage strategy. You need to implement a strategy that minimizes cost, but maximizes performances and provides the ability to re-create the information if one of your disks fails.

    a. What is the purpose of a RADIUS server? 1mk

    b. You need to restore a system state backup to a server running Windows Server 2008. Which tool should you use? 2mks