



Name : .....  
Roll No. : .....  
Invigilator's Signature : .....

**CS/B.TECH (ECE-NEW)/SEM-8/EC-804A/2011**

**2011**

**INTERNET TECHNOLOGY**

*Time Allotted : 3 Hours*

*Full Marks : 70*

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words  
as far as practicable.*

**GROUP – A**

**( Multiple Choice Type Questions )**

1. Choose the correct alternatives for any **ten** of the following :

10 × 1 = 10

- i) The transport layer port address uniquely identifies a
  - a) Process
  - b) Host
  - c) Server
  - d) all of these.
- ii) If address with host part containing all 1's is
  - a) Broadcast address
  - b) Multicast address
  - c) Base address
  - d) none of these.
- iii) Which one of the following is not a Dynamic Routing Protocol ?
  - a) IGRP
  - b) RIP
  - c) ICMP
  - d) OSPF.

- 2



viii) What is the supernet mask for a supernet composed of 16 class C addresses ?

- a) 255.255.240.16                      b) 255.255.16.0
- c) 255.255.248.0                      d) 255.255.240.0.

ix) The process-to-process delivery of the entire message is the responsibility of ..... layer.

- a) Network                                  b) Transport
- c) Application                              d) Physical.

x) BGP is based on

- a) Distance vector routing
- b) Link state routing
- c) Path vector routing
- d) Both (a) and (b).

xi) A subnet mask in class A has fourteen 1's. How many subnets does it define ?

- a) 32    b) 64
- c) 8    d) 128.



- xii) SSL is located between
- a) Network, Data Link
  - b) Application, Transport
  - c) Transport, Network
  - d) Data Link, Physical.

**GROUP – B**

**( Short Answer Type Questions )**

Answer any *three* of the following.  $3 \times 5 = 15$

- 2. What is a firewall ? Discuss each type of firewall briefly. 2 + 3
- 3. a) Discuss the concept of subnet addressing. Why is it used ? 2 + 1
- b) What is limited broadcast ? How does it differ from directed broadcast ? 1 + 1
- 4. a) What do you mean by Fully Qualified Domain Name and Partially Qualified Domain Name ?
- b) Define Root Server. 3 + 2



5. Differentiate between connection oriented and connection-less delivery systems ? Differentiate between Reliable and Unreliable delivery systems with respect to TCP and UDP.

2 + 3

6. Describe link state routing algorithm and also state its advantages and disadvantages.

5

### GROUP – C

#### ( Long Answer Type Questions )

Answer any *three* of the following.  $3 \times 15 = 45$

7. What is DHCP ? How many different types of messages are there ? Explain DHCP message format. Explain the least renewal process. What are interior routing and exterior routing ?
- 2 + 2 + 3 + 4 + 4
8. What is Broadband Communication ? How is it different from Dial up Connections ? Differentiate between High speed dedicated WAN services and switched WAN services. What is VPN ? What is DSL ?
- 3 + 3 + 4 + 3 + 2



9. a) In class B subnet, the IP address of one of the hosts and the mask are given below :

IP Address : 125.134.112.66

Mask : 255.255.224.0

What is the first address (network address) and the last address (broadcast address) in this subnet ?

- b) An organization granted a block of address with the beginning address 14.24.74.0/24. There is 256 addresses in this block. The organization needs to have 11 subnets. 2 subnets each have 64 addresses. 2 subnets each have 32 addresses. 3 subnets each have 16 addresses. 4 subnets each have 4 addresses. Design the subnets.
- c) What is the size of an Ethernet frame carrying an ARP packet ? Is the size of ARP packet fixed ? Explain.
- d) What is multicast addressing ? Describe the working principle of transport gateway ?  $2 + 5 + (1 + 3) + (1 + 3)$
10. a) Differentiate between circuit switching and packet switching.
- b) What is VIN ?
- c) What is Digital Signature ? Explain.  $5 + 4 + 6$



11. Write short notes on any three of the following :  $3 \times 5$

- a) Telnet
- b) ATM
- c) BGP
- d) B-ISDN
- e) DNS.

=====