MCSE/MSE-105

M. E./M. Tech. (First Semester)

EXAMINATION, Dec., 2010

ADVANCED COMPUTER NETWORKING

Time : Three Hours

Maximum Marks : 100

Minimum Pass Marks : 40

Note : Attempt any five questions. All questions carry equal marks.

1. a) Write, in brief, the functions of each layer of the OSI model 14

(b)Explain the IEEE 802.3 ethernet frame format. 6

2. (a) Define protocol layering principle. Explain layering in TCP/IP Internet Environment. 10

(b) Compare the relative features of FTP and TFTP protocol. 10

3.(a)Illustrate the significance of the following fields of an IP datagram :

(i) Time to live (ii) Header Checksum (iii) HLEN

(iv) VERS (v) Total length (vi) Flags

(b) The size of the 'option' field of an IP datagram is 20 bytes. What is the value of HLEN ? What is its value in binary ? 6

4. (a) Illustrate the principle of distance vector routing with the help of a suitable example. 12

(b) What are the different types of OSPF links ? What is the basis of •classification for the four types of links defined by OSPF ? 8

5. (a) Discuss the ATM operation under the following headings : 10

(i) Permanent Virtual Circuit (PVC)

(ii) Switched Virtual Circuit (SVC)

(b) What is a Virtual Private Network (VPN) ? Explain: VPN tunneling. 10

6.(a) Explain the principle of Code Division Multiple Access (CDMA) technique. 10

(b) Describe the architecture of IEEE 802.11 wireless LAN. 10

7.(a)What are the deficiencies associated with IPV4 which unsuitable for the fast growing internet ? How are these deficiencies overcome in IPV6 ? 10

(b) What is RARP ? Write its limitations. What are the alternative solutions to RARP ? 10

8 Write short notes on any three of the following : 20

(i) GSM (ii)Simple mail transfer protocol (iii)Multicast routing

(iv)Domain name system (v) Bluetooth mobile network