M.Sc. (Part–I) Semester–I (C.B.C.S. Scheme) Examination
COMPUTER SCIENCE
(Computer Networks)
Paper–1 MCS 4

Time : Three Hours] [Maximum Marks : 80

Note :— (1) All questions are compulsory.
(2) Figures to the right indicate full marks.
(3) Assume suitable data wherever necessary.
(4) Illustrate your answer with the help of neat sketches wherever necessary.

1. (a) What is modulation ? Explain phase shift modulation and amplitude modulation. 8
   (b) What is switching ? Explain circuit switching with suitable example. 6

OR

2. (a) Explain the Synchronous and Asynchronous mode of data transmission. 8
   (b) Explain the various types of delays in packet switched networks. 6
3. (a) What is SMTP ? Explain its services. 6
   (b) Explain the socket interface used by the processes for communication. 7

OR

4. (a) Explain the service model of FTP with FTP commands. 7
   (b) What is RTT ? Explain the RTT requirement of HTTP with an example. 6
5. (a) Explain the multiplexing and demultiplexing applications in transport protocol. 6
   (b) Distinguish between stop-and-wait and pipelined data transfer protocols. 7

OR

6. (a) State and explain RDT in channel with bit errors. 7
   (b) What is congestion control ? Describe the ways for controlling congestion in network. 6
7. (a) Explain the virtual circuit service model. 7
   (b) What is Routing ? Explain multicast routing. 6

OR

8. (a) Explain the Datagram network service model with suitable example. 6
   (b) State and explain IPV_4 Internet protocol with classes and packet format. 7
9. (a) Describe the Huffman coding techniques for error detection. 7
   (b) Explain the following :
   (i) Frame Relay (ii) Wireless LAN 6

OR

10. (a) What is address resolution protocol ? Explain. 6

(b) Explain the IEEE 802.11 standard for Wireless LAN. 7

11. (a) What is Cryptography ? Explain symmetric key cryptography. 7

(b) What is Network management ? Describe various areas of network management. 7

OR

12. (a) Explain the following

(i) Authentication and Integrity.

(ii) Non-repudiation. 8

(b) Explain the following terms :

(i) SMI.

(ii) SNMP. 6