

10. Write short notes on (any **THREE**) :

- (a) Electronic Mail System
- (b) Multimedia
- (c) Public key encryption
- (d) Digital signature with public key cryptography.

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Faculty of Engineering & Technology
Eighth Semester B.E. (Electronics/EDT/E & T/IND/
Electro) / Seventh Semester B.E.P.T. (Electro)

Examination
COMPUTER COMMUNICATION AND
NETWORKS
Sections—A & B

Time—Three Hours]

[Maximum Marks—80

INSTRUCTIONS TO CANDIDATES

- (1) All questions carry marks as indicated.
- (2) Answer **THREE** questions from Section A and **THREE** questions from Section B.
- (3) Due credit will be given to neatness and adequate dimensions.
- (4) Assume suitable data wherever necessary.
- (5) Illustrate your answers wherever necessary with the help of neat sketches.

SECTION—A

- 1. (a) Determine the expression for blocking probability R_b for the calls that are not uniformly distributed. Also, determine the condition for blocking of a two stage network. 7
- (b) Write in brief about Time Division Time Switch and its phased operations. 6

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- 2. (a) Calculate the maximum access time that can be permitted for the data and control memories in a TSI switch with a single output trunk multiplexing 2500 channels. Also estimate the cost of the switch and compare it with that of single stage space division switch. 3
- (b) What is IEEE 802.3 standard for LAN ? How does it differ from Ethernet ? 6
- (c) Describe the architecture of FDDI. 4
- (a) Explain CSMA Scheme. Describe non persistent, 1-persistent and p-persistent CSMA. 7
- (b) Define the efficiency of an ALOHA channel. Explain the probability of successful transmission of frames in ALOHA channel. 6
- 4. (a) Draw and explain each layer in OSI Reference Model. 7
- (b) Draw and explain each protocol in TCP/IP protocol architecture. 6
- 5. (a) What is Address Resolution and Reverse Address Resolution Protocol ? Explain in detail. 6
- (b) Explain with example, subnet addressing. 6
- (c) Find the net id and host id of the following IP addresses :
 - (i) 114.34.3.18
 - (ii) 208.34.54.10 2

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SECTION—B

- 6. (a) What are the principles of ISDN ? Draw and explain functional architecture of Broadband ISDN. 7
- (b) Explain various types of guided and unguided transmission media. 6
- 7. (a) Explain ATM protocol reference model and ATM cell format. 7
- (b) Explain the sliding window protocol and go-back-n protocol used in data link layer. 6
- 8. (a) Compute the shortest path from A to F using Dijkstra's Algorithm for the network shown in fig. below. Show your paths step wise :
- (b) Explain wireless TCP and UDP. 5
- (c) Discuss various design issues for network layer. 4
- 9. (a) Discuss Leaky Bucket Algorithm. What is its importance ? 5
- (b) Explain the following routing techniques :
 - (i) Flooding
 - (ii) Hierarchical routing
 - (iii) Inter network routing. 9

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