COMPUTER COMMUNICATION AND NETWORKING   -

Full Marks – 70

Time – Three hours

The figures in the margin indicate full marks for the questions.

SECTION – A

Marks – 25

· Time – One hour

All questions are compulsory.

1. Answer the following short questions :   5×1=5

   (a) Define CRC.

   (b) What is checksum ?

   (c) Define the word cryptography.

   (d) What do you mean by encryption and decryption ?

   (e) Define the peer-to-peer networks.

2. Fill up the blanks :   10×1=10

    (a) Data can be transmitted in one direction at a time in —— system and in both direction at a time in —— system.

    (b) Data can be transmitted without repetition upto max —— meters in 100 Base-TX (Twisted pair) and upto max —— meters in 100 Base-FX (Fiber optics).

    (c) In —— ALOHA transmission must be done in slot boundary but in —— ALOHA transmission can be done at any time.

    (d) SMTP stand for —— mail —— protocol.

    (e) Connectionless services are implemented by —— and connection oriented services are implemented by ——.

3. Choose the correct answer :   5×1=5

    (i) TCP is a protocol of :

        (a) Network layer

        (b) Transport layer

        (c) Data linked layer

        (d) None of these.

(ii) UDP is a :

    (a) Reliable service

    (b) Unreliable service

    (c) Both (a) and (b) above

    (d) None of these.

(iii) A file can be transferred by using :

    (a) FTP

    (b) HTTP

    (c) Both (a) and (b) above

    (d) None of these.

(iv) Which of the following is not a network device ?

    (a) NIC

    (b) Modem

    (c) Router

    (d) Telnet.

(v) Which of the following is not a web browser ?

    (a) Mozila

    (b) Google Crome

    (c) Internet explorer

    (d) All of these

    (e) None of these.

4. Write true or false : 5×1=5

(a) In message passing, a physical path is established before the actual transmission.

(b) Router is a layer -3 device.

(c) Fiber optics uses a principle called "total internal reflection" for data transmission.

(d) There may exists a loop in a sink tree.

(e) IMAP is a better option than POP 3 for transferring email.

SECTION – B

Marks – 45

Time – Two hours

Answer any *three* questions.

5. (a) Compare OSI reference model and TCP/IP model. 7

(b) Compare connectionless and connection oriented services. 3

(c) Generate the CRC code for the data word 110010101, assume the divisor be 10101. 5

6. (a) Construct the even parity 7-bit Hamming Code for a word 1011. 4

(b) If a receiver received a 7-bit Hamming codeword 1011011, check whether the received codeword is correct or wrong assuming even parity. If wrong, locate error bit. 5

(c) Illustrate the sliding window protocol. 6

7. (a) Describe the meaning of routing algorithm and explain any *one* : 2+3=5

(i) Hierarchical routing

(ii) Flooding.

(b) Define congestion. How to control congestion ? Explain with the help of any one method. 2+4=6

(c) Define the network devices : 4

(i) Bridge

(ii) Switch

(iii) Router and

(iv) Gateway.

8. (a) Compare TCP and UDP. 4

   (b) Illustrate the tasks which are to be controlled by transport layer. 3

   (c) Describe the functions of session layer. 4

   (d) Define FTP. 4

9. Write short notes on any *three* : 3×5=15

   (a) Transmission media

   (b) CSMA : non-persistent, 1-persistent and p-persistent

   (c) DNS

   (d) Pure and Slotted ALOHA.