

**B.TECH.****THEORY EXAMINATION (SEM–VIII) 2016-17****DATA COMMUNICATION NETWORK***Time : 3 Hours**Max. Marks : 100**Note : Be precise in your answer. In case of numerical problem assume data wherever not provided.***SECTION – A****1. Attempt the following:****10 x 2 = 20**

- a) Which are the three generation of Ethernet?
- b) What are the desired properties of routing algorithm?
- c) What are the various causes of Congestion?
- d) What are the types and applications of Cryptography?
- e) Define Socket? What is its type?
- f) Draw and explain simple communication model?
- g) What is the relation between bandwidth and bit rate?
- h) What are the advantages of optical fiber over co-axial cable?
- i) List the types of IP address?
- j) Define Flow control?.

**SECTION – B****2. Attempt any five parts of the following question:****5 x 10 = 50**

- a) Explain Go Back n protocol .What are its limitations?
- b) Draw and explain the Frame structure of HDLC?
- c) Explain the transmission policy of TCP?
- d) Explain in detail IEEE 802.4 with the help of Suitable example?
- e) Explain Distant Vector routing algorithm? What are counts to infinite problem?
- f) Explain the following?
  - (i) Leaky bucket algorithm
  - (ii) User Datagram Protocol (UDP)
- g) Explain the header format of TCP? How connection is established in TCP?
- h) Compare the salient features of HTTP and FTP?

**SECTION – C****Attempt any two questions of the following:****2 x 15 = 30**

3. Explain Slotted ALOHA and Pure ALOHA with derivations of their efficiency?
4. Explain the frame format of IPv4? What are the advantages of IPv6 and IPv4?
5.
  - (i) Describe ATM protocol layers and compare them to the OSI protocol hierarchy
  - (ii) Calculate CRC for the 10 bit sequence 1010011110. Where the generator polynomial is  $x^3 + x + 1$ .