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# **B.TECH.**

# THEORY EXAMINATION (SEM–VIII) 2016-17 DATA COMMUNICATION NETWORK

Time : 3 Hours

Max. Marks : 100

 $10 \ge 2 = 20$ 

Note: Be precise in your answer. In case of numerical problem assume data wherever not provided.

#### SECTION – A

#### **1.** Attempt the following:

- **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:

- 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?

5.

- (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:

- **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?
  - (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 x3 + x + 1.

 $2 \ge 15 = 30$ 

 $5 \ge 10 = 50$