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B. TECH
(SEM VI) THEORY EXAMINATION 2022-23
DATA COMMUNICATION NETWORKS

Time: 3 Hours**Total Marks: 100****Note:** Attempt all Sections. If require any missing data, then choose suitably.

SECTION A

1. Attempt all questions in brief.**2 x 10 = 20**

- (a) Differentiate between TDMA and FDMA.
- (b) Illustrate the network goals.
- (c) Explain piggy backing.
- (d) Define Protocol.
- (e) Illustrate expansion cryptography diagrammatically.
- (f) Write two advantages of byte stuffing.
- (g) Write short note on UDP?
- (h) Differentiate between fast ethernet and Giga Ethernet.
- (i) Illustrate IP datagram.
- (j) Change the following IPv4 address from allotted decimal notation to binary notation.
 - (i) 111.63.35.58
 - (ii) 221.54.9.92

SECTION B

2. Attempt any three of the following:**10x3=30**

- (a) Illustrate binary exponential back-off strategy.
- (b) Explain in details CSMA/CD with proper diagram.
- (c) Illustrate the functions and layers of OSI model.
- (d) Explain DES algorithm for cryptography in details
- (e) Illustrate distance vector algorithm with an example.

SECTION C

3. Attempt any one part of the following:**10x1=10**

- (a) Elucidate the following.
 - (i) Email
 - (ii) FTP
 - (iii) Selective-Repeat ARQ
 - (iv) Bluetooth technology
- (b) Describe the IPv6 datagram format in detail. Compare it with IPv4.

4. Attempt any one part of the following:**10x1=10**

- (a) Discuss the concept of redundancy in error detection & correction
- (b) Construct the Hamming code for the bit sequence 1100011101.

5. Attempt any *one* part of the following: 10x1=10

- (a) Explain ATM in details.
- (b) Explain HDLC and PPP protocols in details.

6. Attempt any *one* part of the following: 10x1=10

- (a) What do you understand by framing? Explain in detail.
- (b) Explain congestion and various methods to control congestion.

7. Attempt any *one* part of the following: 10x1=10

- (a) Write short note on
 - (i) HTTP
 - (ii) WWW
 - (iii) SMTP
- (b) Explain Controlled Access technique for multiple access in details.

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