B.TECH
(SEM. VII) THEORY EXAMINATION 2017-18
DATA COMMUNICATION NETWORKS

Time: 3 Hours   *Total Marks: 100*

Note: 1. Attempt all Sections.
2. Assume any missing data.

SECTION A

1. **Attempt *all* questions in brief.**   **2 x10 = 20**

    a. What is the difference between Guided Vs Unguided Media?
    b. Why do we use Layered protocol? Give at least two reasons.
    c. Differentiate between circuit switching and packet switching using suitable diagram.
    d. Give data transfer modes of HDLC?
    e. Differentiate between Fast Ethernet & Gigabit Ethernet.
    f. Give the frame format of IEEE standards 802 for LAN.
    g. Write short note on IP Data Gram
    h. Write down the difference between Hardware addressing versus IP addressing.
    i. Write short note on UDP?
    j. Write short note on network security?

SECTION B

2. **Attempt any *three* of the following:**   **10 x 3 = 30**

    a. What do you mean by layered architecture? Explain the roll of each layer in OSI Model.
    b. What do you mean by framing? Explain bit oriented framing and character oriented framing.
    c. Define various protocol used in wireless LAN.
    d. Explain Routing Algorithms in detail.
    e. Define connectionless and connection oriented services. Explain header format of TCP protocol.

SECTION C

3. Attempt any one parts of the following: **10 x 1 = 10**

    a. What is line coding technique? Explain and compare performance of different line coding techniques.

    b. What are the conceptual pieces of a data communications system? Explain.

4. Attempt any one parts of the following: **10 x 1 = 10**

    a) Define and explain the various frame type in HDLC.
    b) Explain the concept of sliding window technique for error control.

5. Attempt any one parts of the following: **10 x 1 = 10**

    a) How do we say collision detection in analog process? Why do we prefer CSMA over ALOHA?

b) Define MAC layer of data link layer. Discuss CSMA and CSMA/CA random access method.

6. Attempt any one parts of the following: 10 x 1 = 10

a) Explain IPv4 and IPv6 addressing.

b) What is the difference between network layer delivery and transport layer delivery? Explain the congestion control techniques.

7. Attempt any one parts of the following: 10 x 1 = 10

a) What is Cryptography? Differentiate between symmetric key cryptography and asymmetric key cryptography.

b) What do you understand by ATM? Explain cell header format in ATM and briefly describe the four services classes of ATM.