

**Bachelor of Science (B.Sc. I.T.) Semester—III (C.B.S.) Examination**

**DATA COMMUNICATION AND NETWORK—I**

**Paper—III**

Time : Three Hours]

[Maximum Marks : 50

**N.B. :—** (1) **ALL** questions are compulsory and carry equal marks.

(2) Draw neat and well labelled diagrams wherever necessary.

**EITHER**

1. (A) Explain modulation and demodulation process for data transfer. 5
- (B) Explain the following :
  - (i) Bit rate
  - (ii) Baud rate. 5

**OR**

- (C) Explain the concept of Networking in data communication. 5
- (D) Explain Network architecture in data communication. 5

**EITHER**

2. (A) Explain the following :
  - (i) Metallic cable
  - (ii) Pulse Modulation. 5
- (B) Explain transmission media over optical fiber. 5

**OR**

- (C) Explain electromagnetic spectrum. 5
- (D) Explain mechanism of laser digital transmission. 5

**EITHER**

3. (A) What is wireless communication ? Give components required for wireless communication. 5
- (B) What is Wave Attenuation and Wave Absorption ? 5

**OR**

(C) Explain the following :

(i) Error control

(ii) Error detection.

5

(D) Explain satellite communication system in detail.

5

**EITHER**

4. (A) What is Network topology ? Give different types of Network topologies.

5

(B) What is the use of LAN Data link layer ?

5

**OR**

(C) Explain ethernet in detail.

5

(D) Explain local area network in detail.

5

5. Attempt **all** :

(A) Explain serial and parallel data transmission.

2½

(B) Differentiate between linear and nonlinear Pulse Code Modulation (PCM).

2½

(C) Explain electromagnetic waves in detail.

2½

(D) Explain MAC sublayer in LAN.

2½