

Roll No.

Total No. of Pages : 2

BT-5/J05

8890

DIGITAL AND DATA COMMUNICATION

Paper : IT-353

Time : Three Hours]

[Maximum Marks : 100

Note :— Attempt FIVE questions in all.

1. (a) Describe a communication model which is applicable to data communications. 6
(b) What are the different types of data communication networks ? Explain. 6
(c) What different types of transmission media are there ? Compare these for their performance. 8
2. (a) What is the difference between Analog and Digital types of data transmissions ? Explain with examples. 10
(b) What are the various encoding schemes available for analog encoding ? Explain each of them in brief. 10
3. (a) What is sampling theorem ? What is its relevance in communication world ? Explain. 8
(b) How is delta modulation performed ? Explain. 6
(c) What errors are introduced by PCM in the signal ? Explain. 6
4. (a) What is amplitude modulation ? Compare it to the phase modulation. 10
(b) What is the asynchronous transmission ? How is it done ? Compare it to synchronous transmission. 10
5. (a) Why do errors occur in transmission ? 4
(b) What is cyclic redundancy check ? How is it performed and what is its importance ? 8

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(Contd.)

- (c) Why is error correction done ? Explain forward and backward error corrections. 8
6. (a) Explain the working of an RS 232C interface. Why is it called a serial interface ? 10
- (b) Compare X-21 and V-35 protocols for data communication. 10
7. (a) Why is data link control needed ? 4
- (b) What types of line configurations are there ? Explain each of them and bring out their importance. 8
- (c) What is propagation delay ? Why does it occur ? What are its effects on transmission rate ? 8
8. (a) What is sliding window algorithm ? Why and how is it used ? 8
- (b) Explain and write short notes on the following :—
- (i) HDLC
- (ii) ADCCP
- (iii) Binary Synchronous Communication. 3×4=12