BT–6/J07

Digital Communication

Paper : ECE-308

Option : II

Time : Three Hours] [Maximum Marks : 100

Note : Attempt any **FIVE** questions in total selecting at least ONE question from each section.

SECTION—I

1. Discuss the following terms :
   (i) Sampling process
   (ii) Aperture effect
   (iii) Noise in PCM
   (iv) Delta sigma modulation. 20

2. (A) Define PCM. Discuss its advantages and applications in detail. 10

   (B) Explain DM. 5

   (C) Outline the concept of encoding. 5

SECTION—II

3. (A) Write down LMS algorithm. 10

   (B) Briefly explain tapped delay line equalization and adaptive equalization. 10

4. Write a short note on each of the following :
   (a) Nyquist criteria for distortionless base band transmission
   (b) Eye pattern. 20

SECTION—III

5. (a) Discuss the performance of a correlator to noise input. 10
   (b) Discuss how signal space diagram helps in calculation of error probability for BPSK and BFSK. 10

6. Explain briefly the following :
   (i) QPSK
   (ii) QASK
   (iii) MQAM
   (iv) FSK and MFSK. 20

SECTION—IV

7. (A) Outline the concept of probability of error in direct sequence spread specturm. 10

   (B) Discuss the generation and characteristics of PN sequences. 10

8. Discuss the following :
   (i) Signal space dimensionality and process gain
   (ii) Code division multiplexing. 20