**Time: 3 Hours**                                                                 **Total Marks: 80**

N.B:   1. Question No 1 is compulsory
       2. Answer any three from the remaining.

1. Attempt any four from the following.                                                              (20M)
    (a) Define selectivity.
    (b) Explain Fidelity.
    (c) Explain ASK System.
    (d)Compare FDM and TDM.
    (e) What is bit rate and baud rate.

2. (a) Explain the block diagram of analog and digital communication system? if information      (10M)
    rate is maximum which type of modulation technique can be used?
  (b) What is probability of error and bandwidth requirement for BPSK?                      (10 M)

3. (a) State and prove the sampling theorem for low pass and limited signal. Explain aliasing    (10M)
    error.
  (b) Explain the working of foster seelay discriminator with neat circuit diagram and phasor   (10 M)
    diagram.

4. (a) Explain the delta modulator transmitter and receiver with neat block diagrams.             (10M)
  (b)State and prove the following properties of Fourier transform.                         (10 M)
    i) Time Shifting
    ii) Convolution in time domain.

5. (a) Find the mathematical expression of FM signal.                                             (10M)
  (b) Explain generation and demodulation of PPM.                                          (10M)

6.    Answer **any four**                                                       (20 M)
    (a) White Noise
    (b) pre-emphesis and de- emphesis.
    (c) Explain wired communication channel.
    (d) Explain QPSK.
    (e) Intersymbol Interference.

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