

Duration: 3 Hours

[Max Marks:80]

- N.B.: (1) Question No 1 is Compulsory.
(2) Attempt any three questions out of the remaining five.
(3) All questions carry equal marks.
(4) Assume suitable data, if required and state it clearly.

- 1 Briefly explain **any FOUR** [20]
- a Categorize and Define Types of Noise.
 - b Explain Pre-emphasis, De-emphasis.
 - c Evaluate the impact of Inter Symbol Interference in Baseband transmission and methods to mitigate its effect.
 - d Explain Advantages of Modulation.
 - e Generation of SSB using phase shift method.
- 2 a Draw and Explain Super heterodyne Receiver. 10
- b Explain the generation of DSB-SC AM system using diode balanced modulator. 10
- 3 a Explain BFSK generation and reception with block diagram and equations. 10
- b For the bit sequence 10110010 draw the following waveforms 10
- 1) Unipolar RZ 2) Polar RZ 3) AMI. 4) AMI RZ
 - 5) split phase Manchester 6) M-ary waveform(M=4)
- 4 a Draw the block diagram of an offset QPSK transmitter and explain. 10
- b Explain BPSK digital modulation with equations. Draw the block diagram of transmitter and receiver. 10
- 5 a Explain Pulse code modulation and delta modulation. 10
- b Comparison of AM, FM and PM 10
- 6 Write short notes on **any FOUR** 20
- a Sampling theorem
 - b Duo binary coding
 - c AGC with its Circuit Diagram
 - d Noise Figure, Noise Temperature.
 - e Analyze the characteristics of radio receivers