

TF Sem V C'scheme Summa 2025

Duration: 3 Hours

[Max Marks:80]

3/6/25

ECS

- 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.

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| 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
1) Unipolar RZ 2) Polar RZ 3) AMI. 4) AMI RZ
5) split phase Manchester 6) M-ary waveform(M=4) | 10 |
| 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 | |