

TE ECS / SEM-V / R-19 / S.H. 2024 / 11-11-2024

Q.P. Code - 66288

Duration: 3hrs

[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 Comparison of AM and FM.
b Time division multiplexing.
c Inter symbol interference.
d Quadrature Amplitude Modulation.
e Generation of SSB using phase shift method.
- 2 a Explain amplitude modulation with equations. Give the expression of modulation index. Draw the waveform of AM wave and label it. 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 Briefly explain the frequency modulation and phase modulation with equations. 10
Define frequency deviation sensitivity and phase deviation sensitivity
- 6 Write short notes on any FOUR 20
a Sampling theorem
b Duo binary coding
c AGC
d Noise factor and Noise figure
e Superheterodyne receiver
