Sub Code: BECT 403 **ROLL NO……..……..**

EVEN SEMESTER EXAMINATION, 2023 – 24
Course Name: B.Tech
Year/ Semester: 2nd Year/ 4th Semester
Branch– Electronics & Communication Engineering
Subject : Analog Communication

Duration: 3:00 hrs **Max Marks: 100**

Note: - Attempt all questions. All Questions carry equal marks. In case of any ambiguity or missing data, the same may be assumed and state the assumption made in the answer.

Q 1.	Answer any four parts of the following. a) Explain the block diagram of Communication System. b) Define the Gaussian and white noise in brief. c) What is modulation, discuss the need for modulation. d) Explain the Nyquist criterion in brief. e) Discuss the time division multiplexing (TDM). f) Explain the difference between baseband and passband signal.	5x4=20
Q 2.	Answer any four parts of the following. a) Explain amplitude modulation with waveform. b) Derive the expression for total transmitted power of AM. c) AM signal has a sinusoidal carrier signal of frequency 1200 kHz and a sinusoidal message signal of frequency 20 kHz, if the maximum and minimum amplitude is 110 volts and 90 volts. Calculate modulation index (m_a). d) Explain noise and its type in brief. e) Discuss DSB –SC generation in brief. f) Explain the advantage and disadvantage of FM.	5x4=20
Q 3.	Answer any two parts of the following. a) Discuss BPSK modulation and demodulation technique in detail. b) Proof that the transmission efficiency of AM (amplitude modulation) wave is 33.33%. c) Draw and discuss FM using PM, and PM using FM system in detail.	10x2= 20
Q 4.	Answer any two parts of the following. a) Explain Sampling Theorem in detail. b) Explain PCM modulation and demodulation in detail. c) Show the comparative study between AM, DSB-SC, SSB-SC, and VSB-SC modulation techniques.	10x2= 20
Q 5.	Answer any two parts of the following. a) Explain noise in amplitude modulation system in detail. b) What do you mean by Equalization technique, draw and discuss the Adaptive Equalizer with block diagram in details. c) Discuss pre-emphasis and de-emphasis in details.	10x2= 20

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