GIET UNIVERSITY, GUNUPUR – 765022

B. Tech (Fourth Semester - Regular) Examinations, May – 2024

21BECPC24002 – Analog Communication

(ECE)

Time: 3 hrs Maximum: 70 Marks

(The figures in the right hand margin indicate marks)

PART – A **(2 x 5 = 10 Marks)**

Q.1. Answer ***ALL*** questions	CO #	Blooms Level
a. Define energy signal and power signal with proper expressions.	CO1	K2
b. Define Power Spectral Density.	CO2	K2
c. Write down the relation between FM & PM.	CO3	K2
d. Define signal to noise ratio.	CO4	K2
e. State Carson's rule.	CO3	K2

PART – B **(15 x 4 = 60 Marks)**

Answer ***ALL*** questions	Marks	CO #	Blooms Level
2. a. Explain need of modulation in communication system.	8	CO3	K2
b. Derive the total power of conventional AM.	7	CO3	K2
(OR)			
c. An amplitude modulated wave is modulated 50%, what is its saving power if carrier as well as one of the side-band are suppressed.	7	CO3	K2
d. How the message signal is detected from DSB-AM signal in envelope detector.	8	CO3	K1
3.a. Draw the circuit diagram of Ring modulator and explain with its operation?	8	CO3	K2
b. Explain about the demodulaor to detect SSB-SC signal.	7	CO3	K2
(OR)			
c. Explain the generation of AM signals using square law modulator.	8	CO3	K2
d. Explain the generation of SSB using phase shift modulator.	7	CO3	K2
4.a. Derive the expression for the frequency modulated signal. Differentiate between narrow band FM and wide band FM.	7	CO4	K1
b. Explain how Varactor diode can be used for frequency modulation.	8	CO3	K2
(OR)			
c. Explain the working of AM Super heterodyne receiver with its block diagram.	8	CO4	K2
d. Explain the principle of indirect method of generating a wide-band FM signal with a neat lock diagram.	7	CO3	K2
5.a. Derive the noise power at the BPF output.	7	CO4	K2
b. Comparison of FM and AM.	8	CO4	K4
(OR)			
c. Discuss the various noises present in a communication system and their impact on system.	8	CO4	K2
d. Derive the figure of merit for DSB-SC system.	7	CO4	K2

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