Question Paper Code: R22A22EC03

R22

ANURAG Engineering College

(An Autonomous Institution)

II B.Tech II Semester Supplementary Examinations, December – 2024

ANALOG AND DIGITAL COMMUNICATIONS

(ELECTRONICS & COMMUNICATION ENGINEERING)

Time: 3 Hours **Max. Marks: 60**

Section – A (Short Answer type questions) (10 Marks)

Answer All Questions

		Course Outcome	B.T Level	Marks
1.	What are the needs of Modulation.	CO1	L1	1M
2.	In Amplitude Modulation, the carrier frequency is fc =200KHz. The maximum frequency of the signal is 10 KHz. Estimate the bandwidth of the AM signal.	CO1	L1	1M
3.	Compare NBFM and WBFM.	CO2	L1	1M
4.	State Carson's rule.	CO2	L1	1M
5.	Write the drawbacks of TRF Receiver.	CO3	L1	1M
6.	Define Image frequency.	CO3	L1	1M
7.	Compare FDM and TDM.	CO4	L1	1M
8.	Define Companding.	CO4	L1	1M
9.	Write the disadvantage of BPSK.	CO5	L1	1M
10.	Define ISI.	CO5	L1	1M

Section B (Essay Questions)

Answer all questions, each question carries equal marks. **(5 X 10M = 50M)**

11. A)	Explain the generation of AM signals using switching modulator.	CO1	L2	10M
	OR			
B)	Discuss how a SSB wave is generated using phase discriminator method with only USB and rejecting the LSB.	CO1	L3	10M
12. A)	Explain the principle of Armstrong method of generation of FM signal using relevant diagrams.	CO2	L2	10M
	OR			
B)	Explain PLL Method of demodulating FM signals with a neat block diagram.	CO2	L2	10M
13. A)	Explain the operation of Direct FM Transmitter with block Diagram.	CO3	L2	10M
	OR			
B)	Explain about Superheterodyne receiver with the help of block Diagram.	CO3	L2	10M
14. A)	Explain the generation and Demodulation of PWM signals	CO4	L2	10M
	OR			
B)	Derive the expression for overall SNR in PCM system	CO4	L3	10M
15. A)	Explain the operation of the binary PSK modulator and demodulator.	CO5	L2	10M
	OR			
B)	Discuss in detail the operation of QPSK modulator and demodulator with its phasor diagram	CO5	L2	10M