Question Paper Code: R22A22EC03

R22

ANURAG Engineering College

(An Autonomous Institution)

II B.Tech II Semester Regular Examinations, June/July – 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.	Mention any two reasons for need for modulation.	CO1	L1	1M
2.	What is meant by coherent detection?	CO1	L1	1M
3.	Write any two properties of Bessel functions.	CO2	L1	1M
4.	Define frequency modulation.	CO2	L1	1M
5.	Define Selectivity.	CO3	L1	1M
6.	Write the principle of heterodyning ?	CO3	L1	1M
7.	What is companding?	CO4	L1	1M
8.	Define slope overload error.	CO4	L1	1M
9.	Draw the signal constellation diagram of 16 QAM.	CO5	L1	1M
10.	Write the expression fo probability of error for BPSK.	CO5	L1	1M

Section B (Essay Questions)

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

11. A)	Write the time domain and frequency domain representation of Standard AM Signal. Draw the necessary waveforms and respective Spectrum. Explain the same.	CO1	L2	10M
	OR			
B)	Compare AM, DSB – SC and SSB – SC.	CO1	L3	10M
12. A)	Obtain the time domain mathematical expression for a Wide band frequency modulated wave. Represent in frequency Domain. Draw the spectrum for single tone.	CO2	L3	10M
	OR			
B)	Explain how a balanced slope detector can demodulated an FM signal.	CO2	L2	10M
13. A)	Briefly explain the function of each of the blocks in the super heterodyne receiver.	CO3	L2	10M
	OR			
B)	Explain the block diagram of FM transmitter.	CO3	L2	10M
14. A)	Compare PAM, PWM and PPM systems.	CO4	L3	10M
	OR			
B)	Derive the signal to quantization noise ratio of a delta modulation system.	CO4	L3	10M
15. A)	Analyse the modulation and demodulation procedures of a QAM scheme.	CO5	L3	10M
	OR			
B)	Make use of necessary block diagrams and explain the generation and detection of an BPSK signal.	CO5	L2	10M