Hall Ticket Number:

Code No. : 15445 S N

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS), HYDERABAD
Accredited by NAAC with A++ Grade

B.E. (E.C.E.) V-Semester Supplementary Examinations, June-2023

Analog and Digital Communication Systems

Time: 3 hours

Max. Marks: 60

*Note: Answer all questions from **Part-A** and any **FIVE** from **Part-B***

Part-A (10 × 2 = 20 Marks)

Q. No.	Stem of the question	M	L	CO	PO	PSO
1.	What is the importance of modulation index in FM and AM systems?	2	2	1	1,2	1,2
2.	Distinguish between SSB-SC and DSB-SC systems.	2	1	1	1,2	1,2
3.	Explain Threshold effect in PM systems.	2	2	2	1,2,4	2
4.	Illustrate the difference between PM and FM systems in terms of bandwidth and power.	2	1	2	1,2,4	2
5.	Illustrate how the Quantization noise can be reduced in PCM system	2	2	3	1,2	1,2
6.	Explain how adaptive delta modulation resolves the issues associated with delta modulation.	2	2	3	1,2	1,2
7.	Sketch ASK, FSK signal for the data " 11001"	2	2	4	1,2,4	2
8.	Demonstrate the effect of Threshold in detection of Digital communication systems.	2	2	4	1,2,4	2
9.	Describe the need for source doing in a Digital Communication system.	2	1	5	1,2	2
10.	Write a short note on Convolutional codes.	2	1	5	1,2	2

Part-B (5 × 8 = 40 Marks)

		M	L	CO	PO	PSO
11. a)	Illustrate frequency division multiplexing with an example.	4	3	1	1,2	1,2
b)	Derive the expression for transmitted power in the AM system and explain its power efficiency.	4	3	1	1,2	1,2
12. a)	Describe the Superheterodyne Principle and explain why it is better than Tuning RF receiver.	5	2	2	1,2,4	2
b)	Summarize the importance of AGC in designing a receiver.	3	2	2	1,2,4	2

			M	L	CO	PO	
13.	a)	Explain the generation of PWM and PPM signals with neat waveforms and necessary diagrams.	5	2	3	1,2	1,2
	b)	Summarize the features of time division multiplexing.	3	2	3	1,2	1,2
14.	a)	Explain the generation and coherent detection of ASK signal.	4	1	4	1,2,4	2
	b)	What is inter symbol interference? How it is avoided?	4	3	4	1,2,4	2
15.	a)	List out different types of transmission errors. Describe them.	3	3	5	1,2	2
	b)	Illustrate the Huffman code for transmission in a digital communication system having Five sources S1,S2,S3,S4 ,S5 with corresponding probability of 0.4,0.2,0.1,0.1,0.2.	5	3	5	1,2	2
16.	a)	Derive the condition on perfect operation of Envelope detector for AM demodulation.	3	3	1	1,2	1,2
	b)	Differentiate direct and indirect method of FM generation.	5	4	2	1,2,4	2
17.		Answer any *two* of the following:					
	a)	How to perform M-ary signaling in communication systems.	4	1	3	1,2	1,2
	b)	Write the significance of eye diagram with a neat sketch.	4	3	4	1,2,4	2
	c)	Write a short note on Linear block codes.	4	2	5	1,2	2

M : Marks;   L: Bloom's Taxonomy Level;   CO; Course Outcome;   PO: Programme Outcome

i)	Blooms Taxonomy Level – 1	20%
ii)	Blooms Taxonomy Level – 2	40%
iii)	Blooms Taxonomy Level – 3 & 4	40%

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