Hall Ticket Number:

Code No. : 14146 AS (D)

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

B.E. IV-Semester Advanced Supplementary Examinations, September-2022.

Introduction to Communication Systems (OE-II)

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
1.	Define attenuation.	2	1	1	1
2.	Give importance of modulation.	2	1	1	1
3.	What is intermediate frequency in a Superheterodyne receiver?	2	1	3	1
4.	List different sources of Noise.	2	1	3	1
5.	What is meant by data conversion?	2	1	4	1
6.	Distinguish between Pulse modulation and Continuous modulation	2	3	4	1
7.	Write the importance of error detection and correction	2	2	5	1
8.	Define transmission efficiency.	2	1	5	1
9.	List applications of Satellite communication.	2	1	6	1
10.	Mention the salient features of Wi-Fi.	2	1	6	1

Part-B (5 × 8 = 40 Marks)

Q. No.	Stem of the question	M	L	CO	PO
11. a)	Explain the functionality of each block of a communication system with the help of a block diagram.	4	2	1	1
b)	Calculate the modulation index, carrier power, sideband power, total power and bandwidth of an frequency modulated signal $s(t) = 10 \cos(2\pi 10^6 t + 0.6 \sin 2\pi 10^3 t)$.	4	3	2	1
12. a)	Describe the basic principle of frequency modulation	4	2	2	1
b)	Analyze the structure of super heterodyne receiver and highlight the salient features.	4	3	3	1
13. a)	Discuss about Serial data transmission and give its applications.	4	2	4	1
b)	Present the working of Time division multiplexing with a block diagram	4	3	4	1
14. a)	How Frequency Shift Keying MODEM support digital transmission of data? Explain.	4	3	4	1
b)	What are the benefits of using digital techniques in communication	4	2	4	1

			M	L	CO	PO
15.	a)	Describe the working of Optical communication system with the basic building blocks.	4	4	6	1
	b)	What are the advantages and disadvantages of microwave communication?	4	2	6	1
16.	a)	Write the applications pertaining to each band of electromagnetic spectrum.	4	2	1	1
	b)	Contrast between Amplitude modulation and Frequency Modulation with respect to frequency band, noise immunity, bandwidth and power requirements	4	4	2	1
17.		Answer any *two* of the following:				
	a)	Describe the working of Frequency Division multiplexing	4	2	4	1
	b)	Determine the hamming bits for the digital data to be transmitted is "10110110"	4	2	5	2
	c)	Draw the structure of Satellite communication system and explain each block.	4	2	6	1

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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