

THE KAVERY ENGINEERING COLLEGE*(An Autonomous Institution)***B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, APRIL-MAY 2025***Sixth Semester**Electronics and Communication Engineering***CEC352 - Satellite Communication***Regulations - 2021***Duration : 3 Hrs****Maximum : 100 Marks****PART – A (ANSWER ALL QUESTIONS) (Marks 10*2=20)**

Q.No	Questions	BLT	CO	Marks
1.	State Kepler's Second Law.	L1	1	2
2.	List the primary function of a launch vehicle?	L1	1	2
3.	Mention two actuators used in attitude control?	L2	2	2
4.	Name two components of a satellite communication payload	L2	2	2
5.	Define system noise temperature.	L1	3	2
6.	Why is Ka-band more affected by atmospheric effects than C-band?	L2	3	2
7.	Define digital transmission.	L1	4	2
8.	Name Two real-world application of encryption.	L2	4	2
9.	What type of antenna is commonly used in mobile satellite services terminals?	L2	5	2
10.	What is a Direct Broadcast Satellite?	L1	5	2

PART – B (ANSWER ALL QUESTIONS) (Marks 5*16 = 80)

Q.No	Questions	BLT	CO	Marks
11.	a Summarize about geostationary orbits and their characteristics, advantages, disadvantages, and applications.	L2	1	16
	Or			
	b Discuss in detail about satellite launching procedures to ensure mission success and the safety of the payload.	L2	1	16
12.	a Write a detailed note on spacecraft communication systems. Include information on frequency bands, antennas, modulation techniques, and data handling.	L2	2	16
	Or			
	b Illustrate how a transponder processes signals in a satellite. Include all internal components and their functions.	L2	2	16

13.	a	Develop uplink and downlink design equations to balance power, antenna gain, and system losses to ensure reliable communication.	L3	3	16
		Or			
	b	Explain in detail about Rain-induced attenuation and also interference are critical considerations in satellite communication design, especially for high-frequency bands.	L3	3	16
14.	a	Write a detailed note on modulation and multiplexing in satellite communication to obtain reliable, efficient, and simultaneous data transmission.	L2	4	16
		Or			
	b	Explain in detail about FDMA and CDMA.	L2	4	16
15.	a	Discuss the working and applications of GPS (Global Positioning System) and how satellite navigation has impacted daily life.	L4	5	16
		Or			
	b	Write a detailed account of Direct Broadcast satellite services and their impact on education and media.	L4	5	16