Code No.: R22EC722PE	R22	H.T.No.			8	R						

CMR ENGINEERING COLLEGE: : HYDERABAD
UGC AUTONOMOUS
IV–B.TECH–I–Semester End Examinations (Regular) - December- 2025
SATELLITE COMMUNICATIONS
(ECE)

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

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 10 marks. Answer all questions in Part A.
Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART-A **(10 Marks)**

1. a)	Mention the Significance Sun Transit Outage?	[1M]
b)	What are active and passive satellites?	[1M]
c)	Define Transponder.	[1M]
d)	How does the Bandwidth of a transponder can be increased?	[1M]
e)	What the advantages of CDMA in Satellite Communication?	[1M]
f)	Mention the types of Multiple Access.	[1M]
g)	Define earth Station.	[1M]
h)	List the various parameters that affect the Earth station.	[1M]
i)	Mention how Low Earth Orbit satellites are different from Geo Stationary Satellites.	[1M]
j)	List the disadvantages of NGSO.	[1M]

PART-B **(50 Marks)**

2.	Define the types of Orbital Parameters. Explain the features of Typical Launch Vehicles.	[10M]
	OR	
3.a)	Explain how a satellite is placed in Geostationary Orbit.	[5M]
b)	Enumerate important applications of satellites.	[5M]
4.	Explain the block diagram of Telemetry tracking Command (TTC) System.	[10M]
	OR	
5.	Categorize three main systems for tracking satellites. How can track systems be affected? Explain the main functions of TTC Sub systems.	[10M]
6.a)	Illustrate FDMA in detail and discuss about the interference in FDMA.	[5M]
b)	Explain the frame structure of TDMA.	[5M]
	OR	
7.	Illustrate the steps in Calculating Noise temperature in satellite communication with necessary equation.	[10M]
8.	Explain the block diagram of Earth Station Tracking system.	[10M]
	OR	
9.	Explain in detail primary test method of Satellites communication.	[10M]
10	Explain in detail about system Consideration of Geo Stationary Satellites.	[10M]
	OR	
11.	Draw the Schematic diagram of GPS position location on a plane GPS Position location in space and explain in brief.	[10M]

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