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Mid Term Examinations - October 2026

Date: 05/10/2026 **Time:** 11:45 AM - 01:15 PM

Course Code: ECE3055 **Course Name:** Satellite Communication

Semester: Seventh Semester **Max. Marks:** 50 **Weightage:** 50%

CO - Levels	CO1	CO2
Marks	34	56

PART A: Answer Following Questions. 10 M

Q.N.	Questions	M	CO	BT
1	The power factor of the satellite link can be analysed using many parameters.Define EIRP.	2	CO2	BT1
2	The orbit is defined as the path of the satellite .Write the classification of the satellite orbit based on its angle of rotation.	2	CO1	BT1
3	Networks used in satellite communication can be categorized based on their efficiency.Define Absorptive network and its noise figure.	2	CO2	BT1
4	The Amplifiers used in satellite communication can be connected in cascade to acheive higher amplification.With relevant equation define system noise temperature for the amplifiers in cascade.	2	CO2	BT1
5	The disturbances created in the orbits of a satellite is called as perturbation.Define what is satellite graveyard.	2	CO1	BT1

PART B : Answer Any 1 Following Questions. 10 M

Q.N.	Questions	M	CO	BT
6	The satellite moves in a path called orbit.Orbits are classified based on different parameters.write a short note on a)Equitorial b)Polar c)Inclined satellites.Also Define the following a)Atmospheric Drag b)satellite Graveyard	10	CO1	BT2
7	a)A satellite is moving in an elliptical orbit with the major axis =42000 KM.If the perigee distance is 8000KM.Find the Apogee and the orbit eccentricity. b)Determine the relationship between their orbital periods if the semi-major axes of the two satellites are given as 27000 km (satellite 1) and 54 000 km (satellite 2).	10	CO1	BT3

PART C: Answer Any 1 Following Questions. 10 M

Q.N.	Questions	M	CO	BT
8	Orbital Perturbations are defined as the disturbances caused in the movement of the satellite in its orbit.Name and Explain in detail the two types of orbital Perturbations of the satellite.	10	CO2	BT2
9	Johannes Kepler derived empirically three laws describing planetary motion. Kepler’s laws apply quite generally to any two bodies in space which interact through gravitation .State and explain the three kepler’s laws related to satellites.	10	CO2	BT2

PART D: Answer Any 1 Following Questions. 10 M				
Q.N.	**Questions**	**M**	**CO**	**BT**
10	The carrier to noise ratio defines the efficiency parameters of uplink and downlink of the satellite.Derive the CNR with the essential explanation for both uplink and downlink.	10	CO2	BT3
11	Launch vehicles are meant to carry the satellites and rockets to their respective Write a brief note on basic principle and the types of launch vehicle and propulsion subsystems .Also explain the basic satellite system with a neat block diagram.	10	CO1	BT2

PART E: Answer Any 1 Following Questions. 10 M				
Q.N.	**Questions**	**M**	**CO**	**BT**
12	Transmission losses of the satellite play a very important role in deciding the factors of efficiency in the link of transmission and reception of the signals. Name and Explain in detail all the types of transmission losses of the satellite.	10	CO2	BT2
13	Link budget is actually the sum of all the losses between: Transmitter - Satellite & back down to a Receiver. With the required diagram and necessary equation explain the Basic link analysis to derive Friis transmission equation.	10	CO2	BT3