R20 Regulation *Subject code:3E8DH*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A+' Grade)

B.Tech VIII Semester Supplementary Examinations, May 2026

SATELLITE COMMUNICATIONS

(ECE)

Maximum Marks: 70 Date: 06.05.2026 Duration: 3 hours

Note: **1.This question paper contains two parts A and B.**
2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each unit which carries 10M.
4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks (10X2M=20 Marks)		Marks	CO	Bloom Tx
1	Define orbital Parameters.	2M	CO1	BT1
2	What are the types of Launch Vehicles used for Satellite Launching?	2M	CO1	BT2
3	What are the types of antennas used in Spacecraft?	2M	CO2	BT1
4	What are the methods used for attitude control?	2M	CO2	BT2
5	What are the methods of multiple access techniques?	2M	CO3	BT1
6	Give the types of CDMA.	2M	CO3	BT2
7	Why high –power amplifiers are necessary for an earth station?	2M	CO4	BT1
8	Define Program Tracking.	2M	CO4	BT1
9	What are the non-geostationary orbits?	2M	CO5	BT2
10	List the applications of GPS.	2M	CO5	BT1

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	Bloom Tx
11	List the advantages and applications of satellite communication.	10M	CO1	BT3
	OR			
12	a) Describe the main effects of the earth's equatorial bulge on satellite orbit. b) Write notes on Orbital Perturbation Inclination Changes.	5M 5M	CO1	BT2
13	Discuss the attitude, orbit and control (AOCS) subsystem of spacecraft.	10M	CO2	BT4
	OR			
14	What are the functions carried out in Telemetry, Tracking & Command (TT&C) Subsystem?	10M	CO2	BT4
15	Explain the design of Satellite Links for a specified C/N ratio.	10M	CO3	BT4
	OR			
16	Explain Satellite switched TDMA in detail.	10M	CO3	BT3
17	Explain the antenna feed system of Earth Station.	10M	CO4	BT3

	OR			
18	Sketch the transmitter and receiver block diagrams of an earth station and explain its working.	10M	CO4	BT4
19	Distinguish between the different types of orbits in satellite communications.	10M	CO5	BT2
	OR			
20	a) Discuss in detail the process of satellite signal acquisition b)Explain about signal processing techniques used in GPS receiver.	5M 5M	CO5	BT2