



R20 Regulation

Subject code: 3E8DH

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech VIII Semester Regular Examinations, April 2024

SATELLITE COMMUNICATIONS

(ELECTRONICS & COMMUNICATION ENGINEERING)

(Professional Elective)

Maximum Marks: 70

Date: 24.04.2024 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)		CO	Bloom Tx
1	Mention the future trends in satellite communication system.	1	L1
2	List various frequency ranges used for satellite communication.	1	L1
3	Write down the types of antennas used in the satellite?	2	L1
4	What is a transponder?	2	L1
5	Compare TDMA and FDMA.	3	L2
6	List the features of CDMA.	3	L1
7	What is the significance of terrestrial interface?	4	L1
8	Write a note on tracking System?	4	L1
9	What is Satellite Navigational System?	5	L1
10	What is GPS C/A Code Accuracy?	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)			
11	Define look angles & derive expression for elevation and azimuthal angle. [10]	1	L4
	OR		
12	A. Explain the frequency allocations for satellite services. [5] B. With a neat diagram explain the procedure for placement of satellite in geostationary orbit. [5]	1	L3
13	Explain telemetry, tracking and command (TT&C) subsystem of a satellite with the help of block diagram. [10]	2	L4
	OR		
14	Explain Three types of Satellite Orbits. [10]	2	L3
15	Derive the expression for G/T ratio of Satellite system. [10]	3	L4
	OR		
16	A. Describe the basic principle of CDMA. How FDMA is different from TDMA? [5]	3	L3

	B. Explain the Spread spectrum Techniques in satellite communication. [5]		
17	Draw the receiver block diagram of an earth station and explain its working. [10]	4	L3
	OR		
18	Explain about satellite antenna equipment with neat diagram and explain each block function. [10]	4	L4
19	A. Discuss delay and throughput considerations of satellite system. [5] B. Explain about the Differential GPS. [5]	5	L3
	OR		
20	Explain in detail about Non-Geo stationary orbit constallations. [10]	5	L3