



Regulation: R18

Subject code: 2E8DD

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B. Tech VIII Semester Supplementary Examinations, April 2024

Satellite Communications

(Electronics and Communication Engineering)

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)

- 1 State Kepler's three laws.
- 2 Define Inclination of satellite.
- 3 Write down the types of antennas used in the satellite.
- 4 What is meant by transponder?
- 5 What is CDMA?
- 6 What is the system noise temperature?
- 7 Write the different subsystems of earth station.
- 8 Define antenna tracking.
- 9 What are the delay and throughput considerations?
- 10 What is meant by P-code in GPS satellite?

Part-B

Answer All the following questions. (5X10M=50Marks)

- 11 Derive the equation for Orbital Time period and Velocity. [10]
OR
- 12 Explain about Orbital Perturbations. [10]
- 13 Explain telemetry, tracking and command (TT&C) subsystem of a satellite with the help of block diagram. [10]
OR
- 14 Explain about Power supply unit and Antenna subsystem of Satellites. [10]
- 15 From the calculation of system noise temperature, show that C/N ratio is directly proportional to G/T ratio. [10]
OR
- 16 Explain about Direct Sequence Spread Spectrum. [10]
- 17 Explain the transmitting and receiving earth stations with neat block diagrams. [10]
OR
- 18 Write in brief about tracking systems with reference to Earth Station. [10]
- 19 Distinguish between the different types of orbits in satellite communications. [10]
OR
- 20 Explain the technology of range error budget used to provide accuracy in GPS C/A code receiver. [10]