



Duration: 3 Hours

Marks: 80

Note:

- 1) Q.1 is **compulsory**.
- 2) Attempt any **three** questions from the remaining **five** questions.
- 3) Assume Suitable data wherever necessary

- Q1. Attempt any **FOUR** 20
- a) Explain Launching of Geostationary satellites
 - b) Explain design considerations of Earth station
 - c) State and explain Kepler's Laws
 - d) Explain different orbital parameters
 - e) Differentiate window and frame organization
- Q2. a) What is EIRP, Discuss importance of [G/T] ratio. Calculate Overall [C/N] for a satellite link, if [C/N] up link =25dB and [C/N] downlink=20dB and intermodulation noise =13dB 10
- b) Explain TT & C subsystem. Explain role of multi-tone frequency in tracking system. 10
- Q3 a) Describe different stabilization technique 10
- b) What are different types of lasers used for satellite communication? Explain acquisition link model for optical communication 10
- Q4 a) With the help of block diagram explain transmit receive type of earth station 10
- b) Draw and explain satellite network architecture 10
- Q5 a) Explain SPADE system and SCPC of FDMA 10
- b) Which types of antennas used in satellite communication. Explain any one in detail. 10
- Q6. Write short note on any TWO 20
- a) Onboard connectivity with transparent processing
 - b) VSAT and GPS
 - c) Reliability and space Qualification