

Con. 5456-09.

SP-6929

(3 Hours)

[Total Marks : 100]

- N.B. :** (1) Question No. 1 is **compulsory**.
 (2) Attempt any **four** question from Q. No. 2 to Q. No. 7.
 (3) Make **suitable** assumptions wherever **necessary** any **justify** the same.
 (4) Draw **suitable** diagrams wherever **necessary**.

1. (a) Discuss different frequencies used for C-band satellite. Why is uplink frequency different from downlink frequency. **5**
- (b) Discuss crosspolarization discrimination and EIRP. **5**
- (c) What do you understand by attitude control of satellite ? **5**
- (d) Compare uplink power requirements for FDMA and TDMA schemes. **5**
2. (a) What are different modulation techniques used in satellite communication ? Which are preferred ones and why ? **10**
- (b) What do you understand by reliability and space qualification ? Explain the significance of both tub curve. **10**
3. (a) Compare LEO, MEO and geostationary orbits. **10**
- (b) Explain effect of rain on satellite link. **5**
- (c) Explain sun transit outage. **5**
4. (a) Which are different methods of launching a satellite. Explain one method in detail. **10**
- (b) Explain TTC system with neat block diagram. **10**
5. (a) Explain with frame structure the Demand assignment TDMA scheme. **10**
- (b) Explain Intermodulation Noise. **5**
- (c) Why are polar orbits not used for communication satellites ? **5**
6. (a) Draw block diagram of transmit receive type earth station. Explain each block in detail. **10**
- (b) Explain different types of antennas used for satellite communication. **10**
7. Write short notes on :- **20**
 - (a) VSAT
 - (b) Link Budget Calculations
 - (c) Kepler's Laws
 - (d) Combined Uplink and Downlink carries to noise ratio.