1. Derive the relation between saturation flux density and carrier to noise ratio
2. What is Link Budget? Explain Uplink Budget of a Satellite with neat diagram?
3. How does the system noise temperature affect the performance? Explain
4. Briefly explain transmission theory in Satellites
5. Derive the expressions for the system noise temperature, noise figure and G/T ratio of an Earth station receiver.
6. What is Inter modulation in FDMA? Explain FDMA frame with block diagram.
7. Explain TDMA frame structure.
8. What are the different types of demand access multiple Access characteristics?
9. Explain about Satellite Switched CDMA
10. Describe the basic principle of CDMA. How FDMA is different from TDMA?
11. Explain the Spread spectrum Techniques in satellite communication
12. How CDMA is useful comparing with TDMA and FDMA
13. Explain the operation of satellite switched TDMA
14. Explain briefly about FDMA. List the features of CDMA.
15. Distinguish the terms multiplexing and multiple Access. Give the calculation procedure of C/N ratio.

Previously asked problems:

16. Calculate the system noise temperature of a 4 GHz receiver having the following gains and noise temperatures. T_{in}=25 K, T_{RF}=50 K, T_M=500 K, T_{IF}=1000 K, G_{RF} = 23 dB, G_m=0 dB and G_{IF} = 30 dB.
17. A satellite at a distance of 36,000 km from earth radiates a power of 5 W from an antenna with a gain of 15 dB. Find the power received by an antenna at the earth station with a diameter of 4 m. The loss due to atmosphere is 2 dB and the operating frequency is 10 GHz.

18. A satellite in GEO orbit is at a distance of 39000km from an earth station. The required flux density at the satellite to saturate one transponder at a frequency of 14.3 GHz is -90dBW/m_2. The earth station has transmitting antenna with gain 52 dB at 14.3 GHz. Find: i) The EIRP of the earth station ii) the output power of the earth station transmitter.

19. A satellite at a distance of 40000 km form a point on the surface of earth radiates a power of 10 W from an antenna with a gain of 20dB in the direction of the observer. i) Find the flux density at the receiving point, and the power received by an antenna at this point with an effective area of 10 m_2. ii) If the satellite operates at 11GHz and the receiving antenna has gain of 52 dB, find the received power.