1. Obtain the orbit equation for an elliptical orbit and prove that the orbital time period T, is given by $T^2 = 4\pi^2 a^3 / \mu$, where a=Semi major axis.
2. Define the terms

   i) Ascending and descending nodes

   ii) Sun-synchronous orbit

   iii) Angle of inclination
3. Define look angles and derive the expressions for the elevation and azimuth angles
4. With a neat diagram explain the procedure for placement of satellite in geostationary orbit.
5. Illustrate geostationary transfer orbit with slow orbit raising using a neat diagram.
6. Illustrate geostationary transfer orbit and AKM approach to geostationary orbit using a neat diagram.
7. Discuss the applications of Satellite. Mention the future trends in satellite communication system
8. Give a brief history of Satellite Communications. (or) Write the historical developments in satellite communication
9. With a neat diagram explain each block in Satellite Communication System.
10. Explain in detail about Orbital perturbations
11. Discuss the effects of sun and moon on satellite communication.
12. Describe the frequency allocations for various satellite services. List different bands along with frequency range for satellite communications.
13. Discuss in detail the orbital effects in communication systems performance
14. Give brief notes on orbit determination
15. Define the terms Apogee and perigee. Define ascending node and argument of perigee
16. Define Geo stationary and Non Geo-Stationary Orbits.