

R09

Code: 9A04803

B.Tech IV Year II Semester (R09) Advanced Supplementary Examinations, July 2013

SATELLITE COMMUNICATIONS

(Electronics and Communication Engineering)

Time: 3 hours

Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

- 1 Discuss in detail the development of satellite communication technology since the origin of satellite communication.
- 2 With neat diagrams explain the following:
 - (a) Launches and launch vehicles.
 - (b) Orbital effects in communication systems.
- 3 (a) Explain the 6/4 GHz, communication subsystem in detail with neat block diagrams.
(b) What are the different satellite antennas used in a satellite?
- 4 (a) Write notes on system noise temperature with neat diagrams.
(b) Calculate the system noise temperature of a 4 GHz receiver having the following gains and noise temperatures. $T_{in} = 50$ K, $T_{RF} = 50$ K, $T_M = 500$ K, $T_{IF} = 1000^{\circ}\text{C}$, $G_{RF} = 23$ dB, $G_m = 0$ dB and $G_{IF} = 30$ dB.
- 5 Compare different types of multiple access techniques.
- 6 Explain in detail about tracking systems in earth station.
- 7 Explain the delay and throughput. Explain how optimum orbital altitude is determined.
- 8 Explain about GPS receiver and GPS codes.
