PVP 12

Code: EC8T1

IV B.Tech-II Semester–Regular/Supplementary Examinations–April 2017

SATELLITE COMMUNICATIONS
(ELECTRONICS & COMMUNICATION ENGINEERING)

Duration: 3 hours Max. Marks: 70

Answer any FIVE questions. All questions carry equal marks

1. a) Write the history of Satellite Communications. 7 M

   b) Explain Frequency allocations for Satellite service. 7 M

2. a) Explain Three Laws of Planetary Motion. 10 M

   b) Explain the Orbital Parameters. 4 M

3. a) Explain the terms Telemetry, Tracking, Command and Monitoring. 10 M

   b) Define Antenna Efficiency, Directive Gain, Front to back Ratio and Bandwidth. 4 M

4. a) Explain the steps in Satellite Link Design Methodology. 7 M

b) A satellite at 40000 km (range) from a point on earth's surface transmits power of 2W from an antenna having antenna gain 17dB (global beam) in the direction of observer. 7 M

Calculate:

i) flux density on earth's surface.

ii) power received by antenna with effective Aperture of $10\ m^2$.

iii) Gain of receiving antenna.

5. a) Explain Time Division Multiple Access. 7 M

b) Explain Satellite-Switched Time Division Multiple Access with three beam example. 7 M

6. a) Explain the each and every block in Earth Station Transmitter. 7 M

b) Discuss about Parabolic Reflector Antenna. 7 M

7. a) Explain about Eleptical Orbit from Orbital Considerations. 7 M

b) Discuss the Delay and Throughput Considerations of LEO, MEO and GEO. 7 M

8. a) Explain about Radio and Satellite Navigations. 7 M

b) Describe Satellite signal acquisition. 7 M