

Code No: **R42043****R10****Set No. 1****IV B.Tech II Semester Supplementary Examinations, April/May - 2019****SATELLITE COMMUNICATIONS**
(Electronics and Communication Engineering)**Time: 3 hours****Max. Marks: 75****Answer any FIVE Questions**
All Questions carry equal marks

- 1 a) Explain the applications of satellite communications. [8]
b) What are the various forces acting on the satellite? Explain. [7]
- 2 a) Write short notes on satellite launches and launch vehicles. [8]
b) What is orbital perturbation's in satellite communications? Explain. [7]
- 3 a) Draw the block diagram of 6/4 GHz transponder and explain its operation. [8]
b) With the help of a neat diagram, explain Telemetry, Tracking, Command and Monitoring system. [7]
- 4 a) Derive the expression for link equation. [8]
b) The Low earth orbit satellites with ranges varying from 1000 km to 2500 km. Calculate the maximum and minimum path loss from earth to a satellite, in dB, for the uplink frequency of 1.6 GHz and down link frequency of 1.5 GHz. [7]
- 5 a) Explain the principle of CDMA with neat diagrams. [8]
b) Compare the FDMA and TDMA techniques. [7]
- 6 a) Explain the various functions of earth station transmitter with a neat diagram. [8]
b) Explain the type of antennas used at satellite earth station. [7]
- 7 a) Compare the coverage and frequency considerations of different types of satellites. [8]
b) Discuss the delay and throughput considerations of Geo-stationary satellite systems. [7]
- 8 a) Explain the different segments of GPS. [8]
b) Compare GPS and differential GPS. [7]