

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VIII(NEW) EXAMINATION – SUMMER 2019****Subject Code:2181007****Date:17/05/2019****Subject Name:Satellite Communication****Time:10:30 AM TO 01:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Define: (i) Ascending Node (ii) Descending Node (iii) Inclination **03**
(b) Explain difference between FDMA and TDMA. **04**
(c) Explain Kepler's 2nd & 3rd Law. **07**

- Q.2** (a) Define: Line of nodes, Equinox and Satellite footprint. **03**
(b) Define and discuss about Mean anomaly and True anomaly. **04**
(c) Elucidate the block diagram of Satellite Transponder. Also explain the frequency reuse technique for Transponder. **07**

OR

- (c) Discuss LEO, MEO & GEO Satellite orbits with application. **07**
Q.3 (a) Define: INTELSAT, INSAT and Altitude. **03**
(b) How the error control done in Digital DBS-TV? Explain it. **04**
(c) What is uplink and downlink? Design all the steps to follow for Uplink power budget preparation. **07**

OR

- Q.3** (a) Evaluate the System Noise Temperature of earth station receiver. **03**
(b) What do you mean by multiple access technique? Explain Time Division Multiple Access in detail. **04**
(c) Explain LEO, MEO & GEO Satellite orbits with application. **07**
Q.4 (a) What is prograde orbit? **03**
(b) Explain the spade system in short. **04**
(c) Enlighten Sun Synchronous and Molniya orbit with their uses. **07**

OR

- Q.4** (a) Define: Right ascension of the ascending node for Earth orbiting satellites. **03**
(b) Explain timing accuracy in terms of GPS system. **04**
(c) Draw the block diagram of DBS-TV receiver. **07**
Q.5 (a) Discuss orbit perturbations in brief. **03**
(b) List all seven operational NGSO constellation design and explain any one of them in detail. **04**
(c) Explain what is XPD? How XPD are predicted? Also Draw and Explain properly The Canting Angle and Tilt Angle with required equations. **07**

OR

- Q.5** (a) Explain Demand Access Multiple Access method. **03**
(b) Explain C/A code generator regarding GPS. **04**
(c) Explain the principles of GPS location finding. Also explain Satellite signal acquisition in detail. **07**
