

Seat No.: _____

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII (NEW) EXAMINATION – WINTER 2018****Subject Code: 2171007****Date: 19/11/2018****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.

		MARKS
Q.1	(a) (1) State kepler's first law.	03
	(2) Define eccentricity with figure.	
	(b) (1) State kepler's second law and explain it with figure.	04
	(2) State kepler's Third law.	
(c)	Define: (1) Subsatellite path.	07
	(2) Apogee	
	(3) Perigee	
	(4) Line of apsides	
	(5) Ascending node	
	(6) Descending node	
	(7) Prograde orbit.	
Q.2	(a) Describe orbital elements.	03
	(b) Define: (1) retrograde orbit	04
	(2) Argument of perigee	
	(3) mean anomaly	
	(4) True anomaly	
(c)	Explain Orbit perturbations such as: Effects of a nonspherical earth With necessary equations.	07
	OR	
(c)	Describe antenna look angles with figures.	07
Q.3	(a) What are the conditions required for an orbit to be geostationary?	03
	(b) Explain limits of visibility with figure.	04
	(c) Explain earth eclipse of satellite with figure.	07
	OR	
Q.3	(a) What do you mean by near geostationary orbit?	03
	(b) Explain the function of hohmann transfer orbit with figure.	04
	(c) Describe rain attenuation and derive equation for it.	07
Q.4	(a) Explain sun Transit outage.	03
	(b) Explain rain depolarization with figures.	04
	(c) Explain Cross polarization discrimination with figures.	07
	OR	
Q.4	(a) What is link power budget equation? Explain briefly.	03
	(b) With diagram explain the working principle of Community antenna TV System.	04
	(c) Explain attitude control in detail. Define passive attitude control and active attitude control.	07

- Q.5 (a) Explain the term: Station keeping. www.FirstRanker.com www.FirstRanker.com 03
- (b) Explain ionospheric effects in radio wave propagation. 04
- (c) With diagram explain the working principle of master antenna TV System. 07
- OR**
- Q.5 (a) Explain atmospheric losses in radio wave propagation. 03
- (b) Explain ionospheric depolarization. 04
- (c) With diagram explain satellite switched TDMA. 07

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