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B.E. / B.TECH. DEGREE EXAMINATIONS, DEC 2019

Seventh Semester

EC16008 – SATELLITE COMMUNICATION*(Electronics and Communication Engineering)***(Regulation 2016)****Time: Three Hours****Maximum : 100 Marks**Answer **ALL** questions**PART A - (10 X 2 = 20 Marks)**

		CO	RBT
1.	What do you understand by sun transit outage?	1	U
2.	Calculate the radius of a circular orbit for which the period is 1 day. ($\mu = 3.986 \times 10^{14} \text{ m}^3/\text{s}^2$)	1	AP
3.	What is payload in a satellite?	2	R
4.	Why is LNA in the satellite receiving system placed at the antenna end of the feeder cable?	2	U
5.	Define saturation flux density.	3	R
6.	What is intermodulation noise?	3	R
7.	What is space division multiple access?	4	R
8.	Give the function of preamble in a TDMA traffic burst.	4	U
9.	List the various applications of MSAT.	5	R
10.	What is meant by DTH?	5	U

PART B - (5 X16 = 80 Marks)

11.	(a) (i) Explain about the various orbital perturbations.	(8)	1	U
	(ii) State and explain the Kepler's laws of planetary motion.	(8)	1	R
	(OR)			
	(b) (i) Write a note on limits of visibility.	(8)	1	U
	(ii) With a neat sketch, show the various stages involved in satellite launch.	(8)	1	R

12. (a) What is meant by satellite attitude? Briefly describe the two methods of attitude control. (16) 2 U

(OR)

- (b) With a neat block diagram, briefly describe the functioning of the indoor receiving unit of a satellite TV/FM receiving system intended for home reception. (16) 2 U

13. (a) (i) Analyze the satellite uplink and downlink budget equation. (12) 3 AN
(ii) A transmitter feeds a power of 10W into an antenna which has a gain of 46dB. Determine the EIRP in dBW. (4) 3 AN

(OR)

- (b) For a typical satellite receiving system, derive an expression for Overall system noise temperature referred to the input. (16) 3 AN

14. (a) Explain in detail the operation of the INTELSAT SCPC system of pre-assignment and SPADE system of demand assignment. (16) 4 U

(OR)

- (b) Describe briefly the principle behind spectrum spreading and despreading in a CDMA system. (16) 4 U

15. (a) (i) Give a detailed overview on DBS services. (8) 5 U
(ii) Write a note on satellite navigation system. (8) 5 U

(OR)

- (b) Give a detailed note on: (i) HDTV (16) 5 U
(ii) INMARSAT