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Reg. No. : .....

Name : .....

## VII Semester B.Tech. Degree (Reg./Sup./Imp. – Including Part Time ) Examination, November 2014 (2007 Admn. Onwards) PT2K6/2K 6EC 705 (B) : SATELLITE COMMUNICATION

Time: 3 Hours

Max. Marks: 100

## PART-A

- 1. Derive the equation for finding period of a satellite orbit.
- 2. Explain Kepler's laws of planetary motion.
- 3. Explain the single conversion transponder.
- 4. Write a short note on earth station antennas.
- 5. Write the importance of guard time in TDMA.
- 6. Briefly explain how FDM-FM-FDMA is implemented in satellite channels.
- 7. Explain differential GPS.
- 8. Write a short note on uplink design.

#### PART-B

9.	a)	Explain the calculation of Azimuth angle and elevation angle.	7
	b)	Write a short note on orbital perturbations.	8
		OR	
	c)	Explain the launch vehicle selection factors.	5
	d)	Explain the procedures for placing satellites in geostationary orbit.	10

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 $(8 \times 5 = 40)$ 

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10.	a)	Explain earth station transmitter, receiver and antenna in detail. OR	15
	b)	Write a short note on telemetry and monitoring system of satellite.	7
	C)	Write a short note on reliability of satellite subsystem. Derive the expression for reliability of a device.	8
11.	a)	Briefly explain DAMA.	5
	b)	Explain about TDMA implementation in satellite communication. OR	10
	c)	Explain in detail about direct sequence spread spectrum transmission and reception.	15
12.	a)	Derive link equation.	8
	b)	Explain system noise temperature in detail. OR	7
	c)	Explain receiver of GPS with block diagram.	7
	d)	Explain GPS position location procedure.	8

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