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B.Tech. Degree IV Semester Examination November 2002

IT/CS 405 COMMUNICATION ENGINEERING

(1998 Admissions)

Time: 3 Hours Maximum Marks: 100

I.	(a)	Briefly explain the need for modulation.	(5)
	(b)	Derive mathematical expression for an AM signal.	(5)
	(c)	Compare the principle and characteristics of AM and FM.	(10)
		OR	
II.	(a)	Derive the expression for a FM signal and plot its frequency spectrum.	(10)
	(b)	Briefly explain and differentiate between DSB and SSB modulator.	(10)
III.	(a)	Explain with block diagram an AM transmitter using Low level modulation.	(10)
	(b)	Explain Indirect method of FM generation.	(10)
		OR	
IV.	(a)	Explain with block diagram an AM transmitter using High level modulation.	(10)
	(b)	Explain the filter method of SSB generation.	(10)
V.	(a)	Explain the following terminologies with reference to an antenna. (i) Radiation resistance (ii) Beam width (iii) Directivity and gain.	(10)
	(b)	Explain the features of 2D and 3D radiation patterns.	(10)
		OR	
VI.		Differentiate between different modes of propagation of EM waves.	(20)
VII.		Explain sampling, quantising and encoding with reference to PCM. Derive expression for quantisation noise in PCM. Explain the principle of delta modulation.	(20)
		OR	
VIII.	(a)	What are the salient features of Delta modulation? Mention its applications. What do you understand by "double integration" in DM?	(10)
	(b)	Briefly describe any two Digital modulation schemes.	(10)
IX.	(a)	Describe the light sources for fiber optics photo detectors.	(10)
	(b)	Briefly explain the principle of light transmission in a fiber.	(10)
		OR	
X.	(a)	Explain the terminologies – (i) Station keeping (ii) Satellite Attitude (iii) Orbits.	(15)
	(b)	Briefly enumerate the light sources for fiber optics photo detectors.	(5)

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