GUJARAT TECHNOLOGICAL UNIVERSITY ME –II -SEMESTER– EXAMINATION – SUMMER 2015

Sul Sul	bject bject	Code: 2724203 Date: 30/05/20 Name: RF CMOS IC Design	Date: 30/05/2015	
Time: 02:30 pm to 5:00 pm Total Mark			s: 70	
	1. 2. 3.	Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.		
Q.1	(a)	 Define followings terms with respect to RF CMOS IC Design. a. Nonlinearity and Time Variance b. Inter symbol Interference c. Random Process and Noise d. Sensitivity and Dynamic Range e. Conversion of Gain f. Distortion 	07	
	(b)	Compare conventional CMOS IC Design v/s RF CMOS IC Design.	07	
Q.2	(a)	List the various techniques of Analog Modulation for RF Circuits and explain one of them in brief.	07	
	(b)	List the different applications of RF CMOS IC Design and explain one of them in brief.	07	
	(b)	OR Explain liberalization techniques in brief	07	
Q.3	(b) (a) (b)	Explain Power amplifier design. Explain Modeling of the Transistors and SPICE model for RF CMOS IC Design.	07 07 07	
		OR	~-	
Q.3	(a) (b)	Explain Low Noise Amplifier Design in various mixers-working and implementation. Discuss various design issues in integrated RF Filters.	07 07	
Q.4	(a) (b)	Discuss in brief BJT and MOSFET behavior at RF Frequencies. Explain Active RF Components and their modeling.	07 07	
Q.4	(a) (b)	Which are the Basic blocks in RF system and their VLSI implementation? Which are the Various RF synthesizer architectures ? Explain one of them.	07 07	
Q.5	(a) (b)	Explain basics of Multiple Access techniques. Discuss coherent and non coherent detection.	07 07	
Q.5	(a) (b)	Explain receiver and transmitter architectures for RF CMOS IC Design. Explain RF Testing for heterodyne.	07 07	
