Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME – SEMESTER IV (NEW) – • EXAMINATION – SUMMER 2016

Subject Code: 2742702 **Date:04/05/2016**

Subject Name: RF INTEGRATED CIRCUITS

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.**

Q.1	**(a)**	Explain RF behavior of Passive components in detail.	**07**
	(b)	Describe mathematical analysis of transmission line.	**07**
Q.2	**(a)**	Write short note on high frequency limitations of BJT and MOSFET.	**07**
	(b)	Describe the function of interconnectivity network. List out the properties and applications of interconnectivity network.	**07**
		OR	
	(b)	Write short note on Microstrip transmission line. Also explain special termination conditions of transmission line.	**07**
Q.3	**(a)**	Explain Impedance matching using discrete components.	**07**
	(b)	Describe the design flow of Lumped filter with suitable example.	**07**
		OR	
Q.3	**(a)**	Explain Impedance matching using microstrip line matching network.	**07**
	(b)	Describe the design flow of distributed filter with suitable example.	**07**
Q.4	**(a)**	Explain small signal amplifier design with suitable example.	**07**
	(b)	Describe the design procedure of low phase noise oscillator.	**07**
		OR	
Q.4	**(a)**	Explain power amplifier design with suitable example.	**07**
	(b)	Write short note on PLL Synthesizer and Direct-digital Synthesizer.	**07**
Q.5	**(a)**	Write short note on RF active components.	**07**
	(b)	Write short note on RF mixer.	**07**
		OR	
Q.5	**(a)**	Write short note on (i) broadband high power multistage amplifier (ii) Low noise amplifier	**07**
	(b)	Describe the Image reject and Harmonic mixers in detail.	**07**

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