PVP 22

Code: 22ECMC2T6B

I M.Tech - II Semester – Regular Examinations - JULY - 2023

RF IC DESIGN
(MICROWAVE & COMMUNICATION ENGINEERING)

Duration: 3 hours Max. Marks: 60

Note: 1. This paper contains 4 questions from 4 units of Syllabus. Each unit carries 15 marks and have an internal choice of Questions.
2. All parts of Question must be answered in one place.

BL – Blooms Level CO – Course Outcome

			BL	CO	Max. Marks
UNIT-I					
1	a)	List any four RF applications and describe the steps for RF circuit design.	L2	CO1	8 M
	b)	Explain sensitivity and dynamic range of the RF circuit.	L2	CO1	7 M
OR					
2	a)	Describe the characteristics of passive IC components at RF frequencies.	L2	CO1	7 M
	b)	Compare the characteristics of co-axial line and two -wire line.	L3	CO1	8 M
UNIT-II					
3	a)	Explain bandwidth enhancement with fT doublers.	L2	CO2	8 M
	b)	Describe the importance of current-reuse approach that helps in low-noise amplifier.	L2	CO2	7 M

		OR			
4	a)	Explain power constrained noise optimization technique in low noise amplifier design.	L2	CO2	8 M
	b)	Discuss about linearity and large signal performance of LNA.	L2	CO2	7 M
		UNIT-III			
5	a)	Distinguish between different types of mixers.	L3	CO3	6 M
	b)	Draw and explain the super-heterodyne receiver block diagram and mention the importance of mixer in receiver.	L2	CO3	9 M
		OR			
6	a)	Describe the specifications of Mixer.	L2	CO3	6 M
	b)	Explain about diode-ring mixer with neat diagram.	L2	CO3	9 M
		UNIT-IV			
7	a)	Explain about RF synthesizer architecture.	L2	CO4	10 M
	b)	Differentiate static moduli and dithering moduli.	L3	CO4	5 M
		OR			
8	a)	Describe the importance of negative resistance oscillator and explain Simple differential negative resistance oscillator with neat diagram.	L2	CO4	9 M
	b)	Explain the effect of phase noise in RF communication.	L2	CO4	6 M