PRN:		Course Code :	UEC302

Second Year **B. Tech** Semester End Examination Winter 2024 000192

Analog Circuit Design

Day and Date: Mon 10:30AM To 01.30PM Max Marks: **100**

Time : 25 NOV 2024 Duration: **03** hrs

Instructions: All questions are compulsory.

			Marks	Bloom's Level	CLO
Q.1		**Attempt the following**			
	a)	Explain frequency response of RC Coupled amplifier circuit.	08	L4	CLO3
	b)	Derive expressions for h-parameters of CB configuration of transistor and draw h-parameter equivalent circuit.	08	L4	CLO3
		OR			
	b)	Derive expressions for h-parameters of CE configuration of transistor and draw h-parameter equivalent circuit.	08	L3	CLO3
Q.2		**Attempt the following**			
	a)	What is feedback.Explain types of feedback with examples	08	L4	CLO2
	b)	Derive expression for Zif & Av of voltage series feedback amplifier	08	L4	CLO2
		OR			
	b)	A current series feedback amplifier has R_L=1kΩ, hfe=100, hie=1kΩ,RE=100Ω,R2=20kΩ,R1=30kΩ.Calculate voltage gain without feedback, voltage gain with feedback, Zif and β.	08	L2	CLO2
Q.3		**Attempt any two from the following**			
	a)	Explain drain characteristics of N-channel JFET with neat circuit diagram.	08	L2	CLO1
	b)	With neat circuit diagram explain the operation of E-MOSFET.	08	L2	CLO1
	c)	Compare the difference between E-MOSFET and DE-MOSFET	08	L2	CLO1
Q.4		**Attempt any two from the following**			
	a)	With block diagram explain LM723 voltage regulator circuit	08	L3	CLO4
	b)	Design a low voltage regulator circuit using IC 723 to provide an output voltage of 5volts,if maximum load current is 80mA.Assume Vsense=0.7 volts.	08	L2	CLO4
	c)	Design an adjustable voltage regulator circuit to produce an output voltage of 7 volts when the input voltage is 12v, if the load current is 200mA using LM317 regulator.	08	L3	CLO4
Q.5		**Attempt any two of the following**			
	a)	Derive expression for frequency of oscillation of Colipits oscillator.	09	L1	CLO2
	b)	Explain construction and operation of Wein bridge oscillator circuit.	09	L1	CLO2
	c)	A crystal has the following parameters: L=0.5H,C1=0.06pf, Cm=1pF, R=5kΩ. Find fs, fp, Qs and Qp.	09	L1	CLO2
Q.6		**Attempt any two of the following**			
	a)	With neat block diagram, explain the operation of 555 Timer.	09	L2	CLO4
	b)	With neat circuit diagram and waveform diagram explain the operation of Astable Multivibrator.	09	L2	CLO4
	c)	With neat circuit diagram and waveform diagram explain the operation of Monostable Multivibrator.	09	L2	CLO4

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