PRN:		Course Code :	ECE203R1

Second Year **B. Tech** End Semester Examination Summer 2023

Analog Circuit Design

Day and Date: Wednesday, 14/06/2023 Max Marks: **100**

Time : 2.00 to 5.00 PM Duration: **03hrs**

Instructions:All questions are compulsory.

			Marks	Bloom's Level	CLO
Q.1		**Attempt the following**			
	a)	Design a single stage RC coupled amplifier circuit for Vcc=16v, VCEQ=8v, ICQ=3mA, hie=2kΩ, hfe=100, Rs=300Ω, RL=470Ω VCEmax=45v, ICmax=10mA, f=20Hz.	08	L4	CLO3
	b)	Write short notes on Multistage amplifiers with block diagram.	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)	With block diagram explain feedback amplifier circuit.	08	L4	CLO2
	b)	Derive expression for Zif& Av of current series feedback amplifier	08	L4	CLO2
		OR			
	b)	A voltage series feedback amplifier has Rs=600Ω, RL=2kΩ, hfe=80, hie=5kΩ.Calculate current gain, voltage gain, Zif.	08	L2	CLO2
Q.3		**Attempt any two from the following**			
	a)	Explain the operation and mutual characteristics of JFET.	08	L2	CLO1
	b)	With neat circuit diagram explain the operation of DE-MOSFET.	08	L2	CLO1
	c)	Give any seven differences between JFET and MOSFET.	08	L2	CLO1
Q.4		**Attempt any two from the following**			
	a)	With block diagram explain LM317 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)	Explain 78XX and 79XX fixed voltage regulators.	08	L3	CLO4
Q.5		**Attempt any two of the following**			
	a)	Derive expression for frequency of oscillation of Weinbridge oscillator.	09	L1	CLO2
	b)	With neat circuit diagram, explain the operation of Pierce crystal oscillator	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 AstableMultivibrator.	09	L2	CLO4
	c)	What is One shot circuit. Explain with diagram the operation and waveform of one shot circuit.	09	L2	CLO4

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