PRN:		Course Code :	ECE303R1

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

Linear Integrated Circuits & Applications

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

Time : 10.30 am to 1.30 pm Duration: **03**hrs

Instructions: All questions are compulsory.

			Marks	Bloom's Level	CLO
Q.1	**Attempt the following**				
	a)	Derive expression for voltage gain of voltage series feedback amplifier using Op-Amp.	08	L4	CLO4
	b)	What is Op-Amp? Explain the ideal characteristics of Op-Amp 741 .	08	L2	CLO1
		OR			
	b)	What is Differential amplifier? Explain Non-inverting amplifier.	08	L2	CLO1
Q.2	**Attempt the following**				
	a)	With neat circuit diagram explain summing and averaging amplifier in inverting configuration.	08	L3	CLO4
	b)	Describe the operation of voltage to current converter using Operational Amplifier with grounded load.	08	L3	CLO4
		OR			
	b)	With waveform diagram explain and derive expression for Integrator circuit using Op-Amp.	08	L3	CLO4
Q.3	**Attempt any two from the following**				
	a)	Derive expression for first order Butterworth lowpass filter.	08	L3	CLO3
	b)	Explain with diagram the frequency response of first order Butterworth high pass filter.	08	L3	CLO3
	c)	Explain band pass and band reject filters. Give the difference between them.	08	L4	CLO3
Q.4	**Attempt any two from the following**				
	a)	With neat circuit diagram, explain the operation of Wein Bridge oscillator circuit using Op-Amp.	08	L2	CLO2
	b)	Explain the conditions of oscillator.With block diagram explain oscillator	08	L2	CLO2
	c)	Explain the operation of Hartley oscillator using Op-Amp	08	L2	CLO2
Q.5	**Attempt any two of the following**				
	a)	Explain with diagram peak detector Circuit using Op-amp	09	L1	CLO1
	b)	What is Hysteresis. With neat circuit diagram and waveform explain the operation of Schmitt trigger.	09	L1	CLO1
	c)	With suitable examples explain clamper circuit using Op-Amp.	09	L1	CLO1
Q.6	**Attempt any two of the following**				
	a)	Explain sawtooth wave generator with waveform diagram.	09	L2	CLO2
	b)	What is Multivibrator. Explain how triangular wave is generated using Op-amp	09	L2	CLO2
	c)	Explain voltage to frequency converter using Op-Amp.	09	L2	CLO2

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