O.P.Code: 20EC0409	R20	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)

B.Tech II Year II Semester Regular & Supplementary Examinations August-2023

ELECTRONIC CIRCUIT ANALYSIS

(Electronics & Communications Engineering)

Time: 3 Hours **Max. Marks: 60**

(Answer all Five Units **5 x 12 = 60** Marks)

		UNIT-I			
1	a	With the help of necessary circuit diagrams and approximations, deduce the expression for CE short circuit current gain and derive the relation between f_β and f_T.	CO4	L4	6M
	b	Construct the block diagram of n-stage cascade amplifier and analyze its various parameters.	CO5	L3	6M
		OR			
2	a	With diagram, calculatethe expressions for Voltage gain, current gain, Input and ouput resistances of a Cascade amplifier.	CO4	L4	6M
	b	Explain the effect of cascading on bandwidth in multistage amplifiers.	CO3	L3	6M
		UNIT-II			
3	a	Explain in detail about the basic Amplifiers used in Feedback amplifiers.	CO3	L2	6M
	b	Analyze Emitter follower circuit with necessary diagram for input and output resistances with feedback.	CO6	L4	6M
		OR			
4	a	Compare various types of feedback amplifiers	CO2	L4	6M
	b	Explain Feedback amplifier topologies with necessary diagrams.	CO3	L2	6M
		UNIT-III			
5	a	A Colpitts oscillator is designed with C1 = 100 pF and C2 = 7500 pF. The inductance is variable. Determine the range of inductance values, if the frequency of oscillations is to vary between 950 KHz to 2050 KHz.	CO6	L3	6M
	b	Appraise the concept of stability in Oscillators.	CO1	L4	6M
		OR			
6	a	With circuit diagram, describe the stagger tuning operation. Sketch necessary waveforms.	CO4	L4	6M
	b	Explain the working of a Crystal oscillator and sketch its characteristics.	CO4	L3	6M
		UNIT-IV			
7	a	Inspect about Transformer coupled Class A Power Amplifier with diagram and determine its Maximum efficiency.	CO3	L4	6M
	b	Examine the stability considerations of a tuned amplifier.	CO2	L3	6M
		OR			
8	a	A Class B push pull amplifier drives a load of 16Ω, connected to the secondary of ideal transformer. The Vcc is 25V. If number of turns on primary is 200 and secondary is 50. Determine maximum power output, DC power input and efficiency.	CO5	L3	6M
	b	With circuit diagram, describe the stagger tuning operation. Sketch necessary waveforms.	CO3	L3	6M
		UNIT-V			
9	a	Examine the operation of Emitter Coupled Monostable multivibrator.	CO3	L4	6M
	b	Derive the expression for pulse width, T of collector coupled Monostable multivibrator.	CO4	L4	6M
		OR			
10	a	Summarize the effect of cascading single tuned amplifiers on bandwidth.	CO4	L4	6M
	b	Demonstrate the operation of Bistable multivibrator with neat circuit diagram.	CO3	L2	6M

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