SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY: PUTTUR
(AUTONOMOUS)
B.Tech II Year II Semester Regular & Supplementary Examinations June-2024
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	Draw the Hybrid-pi model and explain the significance of each and every component in it.	CO1	L3	4M
	b	Deduce the expressions for the hybrid π parameters gm, gb'e, gb'c, rbb' and gce.	CO4	L4	8M

OR

2	Define Coupling and explain various types of coupling mechanisms used in multistage amplifiers.	CO2	L2	12M

UNIT-II

3	a	Explain in detail about the basic Amplifiers used in Feedback amplifiers.	CO3	L2	6M
	b	Explain Feedback amplifier topologies with necessary diagrams.	CO3	L2	6M

OR

4	a	Show that negative feedback reduces gain of an Amplifier.	CO4	L2	4M
	b	Analyze the effect of negative feedback on Output resistance for Voltage series and Current series feedback amplifier.	CO5	L4	8M

UNIT-III

5	a	Construct RC phase shift oscillator using BJT and deduce its expression for frequency of oscillations.	CO4	L4	6M
	b	Determine the frequency of oscillations when a RC phase shift oscillator has R=10kΩ, C=0.01μF and RC = 2.2 KΩ. Also find the minimum current gain needed for this purpose.	CO5	L3	6M

OR

6	a	Explain the working of a Crystal oscillator and sketch its characteristics.	CO4	L3	8M
	b	In a transistorized Hartley oscillator, the two inductances are 2 mH and 20 μH while the frequency is to be changed from 950 KHz to 2050 KHz. Calculate the range over which the capacitor is to be varied.	CO6	L3	4M

UNIT-IV

7	a	Classify the Large Signal Power Amplifier based on biasing condition.	CO2	L4	6M
	b	Discuss about Transformer coupled Class A Power Amplifier with diagram and determine its Maximum efficiency.	CO2	L3	6M

OR

8	Compare different types of tuned amplifiers with suitable circuit diagrams.	CO1	L2	12M

UNIT-V

9	a	Define multivibrator? List out the types of multivibrators.	CO1	L1	4M
	b	With a neat circuit diagram explain the working of a collector coupled Astable multivibrator and draw the necessary waveforms.	CO3	L2	8M

OR

10	a	Explain the operation of the Emitter Coupled Monostable multivibrator.	CO3	L2	8M
	b	List the applications of Monostable multivibrator.	CO1	L1	4M

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