Code No.: EC404PC	R20	H.T.No.			8	R					

CMR ENGINEERING COLLEGE: : HYDERABAD
UGC AUTONOMOUS
II–B.TECH–II–Semester End Examinations (Supply) - December- 2025
ELECTRONIC CIRCUIT ANALYSIS
(ECE)

[Time: 3 Hours] **[Max. Marks: 70]**

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 20 marks. Answer all questions in Part A.
Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART-A **(20 Marks)**

1.	a)	List out the types distortions occurred in amplifiers.	[2M]
	b)	Define gain bandwidth of the amplifier.	[2M]
	c)	Define concept of feedback.	[2M]
	d)	Draw the block diagram of voltage series feedback amplifier.	[2M]
	e)	Explain why LC oscillators are not used at low frequencies.	[2M]
	f)	Differences between hartley and colpitts oscillators.	[2M]
	g)	What is class-A power amplifier?	[2M]
	h)	Defined stagger tuned amplifier.	[2M]
	i)	Why trigger is needed in multivibrators?	[2M]
	j)	What are the applications of monostable multivibrator?	[2M]

PART-B **(50 Marks)**

2.	Derive the expression for the CE short -circuit current gain as a function of frequency.	[10M]
	OR	
3.	Derive expressions for overall voltage gain and overall current gain of a two stage RC coupled amplifier.	[10M]
4.	Derive the expression for voltage gain, input resistance, output resistance of the current shunt feedback amplifier.	[10M]
	OR	
5.	An amplifier has a voltage gain of 400, f_1=50Hz, f_2=200kHz and distortion of 10% without feedback. Determine the amplifier voltage gain and D_f when a negative feedback is applied with feedback ratio of 0.01.	[10M]
6.	Draw the RC-phase shift oscillator and derive the condition for oscillations.	[10M]
	OR	
7.	With the help of suitable schematic explain the operation of a Wien Bridge oscillator and derive an expression for its frequency of operation.	[10M]
8.	Explain the operation of a class B push-pull power amplifier and derive its conversion efficiency and also list out its advantages and disadvantages.	[10M]
	OR	
9.	Describe the heat sinks for power amplifiers.	[10M]
10.	Explain the operation of astable multivibrators with neat diagram, waveforms.	[10M]
	OR	
11.	Explain the operation of Bootstrap time base generator circuit with neat diagram.	[10M]

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