Code No.: EC403PC	R20	H.T.No.			8	R						

CMR ENGINEERING COLLEGE: : HYDERABAD
UGC AUTONOMOUS
II–B.TECH–II–Semester End Examinations (Supply) - December- 2025
LINEAR IC APPLICATIONS
(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)	Define CMRR of op-amp.	[2M]
	b)	Draw the circuit diagram of Non -Inverting Amplifier.	[2M]
	c)	What are the different Features of IC 723?	[2M]
	d)	Explain How OpAmp is used as Differentiator.	[2M]
	e)	Sketch the characteristics of LPF and HPF.	[2M]
	f)	State the Barkhausen criterion for an oscillator.	[2M]
	g)	What is the significance of VCO in PLL?	[2M]
	h)	Draw the pin diagram of 555 Timer.	[2M]
	i)	Define resolution of a convertor.	[2M]
	j)	Which is the fastest ADC and why.	[2M]

PART-B **(50 Marks)**

2.	Differentiate the ideal and practical Op-amp characteristics.	[10M]
	OR	
3.	Derive the gain of a Inverting Op-Amp.	[10M]
4.	Explain the operation of Instrumentation Amplifier with Suitable Diagram.	[10M]
	OR	
5.	Draw and explain the Operation of Op Amp as an Integrator.	[10M]
6.	Design first order active low pass filter and derive its transfer function.	[10M]
	OR	
7.	With a neat diagram, explain the operation of Square wave generator.	[10M]
8.	Describe the operation of Monostable 555 Timer and derive the expression for the period of pulse generated by the timer.	[10M]
	OR	
9.	Draw the Block Diagram of 565 PLL and explain about each block.	[10M]
10.	Explain Inverted R-2R DAC with neat diagram and how it is advantage over weighted resistor DAC and R-2R ladder DAC.	[10M]
	OR	
11.	Discuss in detail the operation of successive approximation type ADC. Mention its advantages.	[10M]

****