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

CMR ENGINEERING COLLEGE: : HYDERABAD
UGC AUTONOMOUS
II–B.TECH–II–Semester End Examinations (Supply) - February- 2023
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)	What are the characteristics of Ideal Op-Amp.	[2M]
b)	Define CMRR of Op-Amp.	[2M]
c)	What is voltage Regulator? List the types of voltage regulators?	[2M]
d)	What is the necessity of voltage regulation?	[2M]
e)	List the different types of Filters?	[2M]
f)	State the Bkhausen Criterion?	[2M]
g)	Define Capture range, Lock range?	[2M]
h)	List any two applications of IC 555 timer in monostable mode?	[2M]
i)	How many resistors are required in a 12 bit weighted resistor DAC.	[2M]
j)	What is meant by resolution of DAC?	[2M]

PART-B **(50 Marks)**

2.	Discuss the AC Characteristics of an Op-Amp in detail.	[10M]
	OR	
3.	Draw the pin Diagram of 741 Op-Amp and explain each pin in detail.	[10M]
4.	Draw the circuit Diagram of Instrumentation Amplifier using 741 Op-Amp and explain its operation.	[10M]
	OR	
5.	Explain the Features of IC 723?	[10M]
6.	Design a First Order High Pass filter with a cutoff frequency of 500 KHz with a pass band gain of 2.	[10M]
	OR	
7.	Draw and explain the Block Diagram of VCO?	[10M]
8.	Explain how 555 timer is used as Astable multivibrator & Derive the expression for its frequency of Oscillations.	[10M]
	OR	
9.	Draw and explain the block diagram of PLL?	[10M]
10.	Discuss Successive Approximation ADC with necessary diagrams and suitable examples.	[10M]
	OR	
11.	List and explain the specifications of DAC.	[10M]

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