MARRI LAXMAN REDDY
INSTITUTE OF TECHNOLOGY AND MANAGEMENT
(AN AUTONOMOUS INSTITUTION)
(Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad)
Accredited by NBA and NAAC with 'A' Grade & Recognized Under Section2(f) & 12(B)of the UGC act,1956

MLRS

II B.Tech II Sem Supply End Examination, July 2022
Linear IC Applications
(ECE)

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

Note: 1. Question paper consists: Part-A and Part-B.
   2. In Part – A, answer all questions which carries 20 marks.
   3. In Part – B, answer any one question from each unit.
      Each question carries 10 marks and may have a, b as sub questions.

PART- A
                                              (10*2 Marks = 20 Marks)

1.	a)	Define differential amplifier and draw its block diagram.	2M	CO1	BL1
	b)	Draw the non inverting op-amp circuit diagram and derive its output voltage	2M	CO1	BL1
	c)	Define CMMR and give its ideal and practical values.	2M	CO2	BL1
	d)	Explain the operation of op-amp.	2M	CO2	BL4
	e)	Draw the circuit diagram of all pass filter and write its output voltage equation.	2M	CO3	BL1
	f)	What is an oscillator?	2M	CO3	BL1
	g)	Describe various applications of 555 timer.	2M	CO4	BL2
	h)	Draw the pin diagram of IC 555.	2M	CO4	BL1
	i)	List specifications of DAC.	2M	CO5	BL1
	j)	What are advantages of dual slope ADC?	2M	CO5	BL1

PART- B
                                              (10*5 Marks = 50 Marks)

2	a)	Differentiate between SSI, MSI, LSI and VLSI.	5M	CO1	BL2
	b)	Explain the fundamentals of Differential amplifier.	5M	CO1	BL4

OR

3		Explain the working of Non-Inverting amplifier and derive the equation of its Gain.	10M	CO1	BL4

4	a)	What are the advantages of instrumentation amplifier?	5M	CO2	BL1
	b)	How op-amp is used for comparator? Explain its working.	5M	CO2	BL4

OR

5		Describe the working of practical differentiator circuit. Derive the expression for output voltage.	10M	CO2	BL2

6	a)	Draw the circuit diagram of first order high pass filter and its frequency response.	5M	CO3	BL1
	b)	With a neat diagram, explain the band reject filter. Derive the expression for output voltage.	5M	CO3	BL6

OR

7		How to generate a saw tooth wave form? Explain the working of such a circuit with neat circuit diagram.	10M	CO3	BL4

8	a)	Discuss about the operation of astable multivibrator using 555 IC Timer.	5M	CO4	BL2
	b)	Illustrate the role of the basic building blocks of PLL.	5M	CO4	BL3

OR

9		Draw the circuit of Schmitt trigger using 555 timer and explain its operation.	10M	CO4	BL4

10	a)	With a neat diagram, explain the successive approximation converter in detail.	5M	CO5	BL4
	b)	With a neat diagram, explain about the counter type A/D converter in detail.	5M	CO5	BL4

OR

11		Explain the working of R-2R ladder DAC with neat circuit diagram and write its limitations.	10M	CO5	BL4

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