Code No: R1631042 **R16** SET - 1

III B. Tech I Semester Supplementary Examinations, October/November - 2020

LINEAR IC APPLICATIONS

(Common to Electronics and Communication Engineering, Electronics and Instrumentation Engineering, Electronics and Computer Engineering)

Time: 3 hours Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
2. Answer **ALL** the question in **Part-A**
3. Answer any **FOUR** Questions from **Part-B**

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PART –A (14 Marks)

1.	a)	What is the significance of Level translator?	[2M]
	b)	Define Drift and give its ideal and practical values.	[2M]
	c)	Draw the V to I convertor.	[2M]
	d)	What is an all-pass filter and Notch Filter?	[3M]
	e)	List the applications of PLL.	[3M]
	f)	What are the advantages of analog to digital conversion?	[2M]

PART –B (56 Marks)

2.	a)	Draw the circuit diagram of differential amplifier with dual input and balanced output. Derive the expressions for differential gain A_d, input resistance R_i, and output resistance R_o	[7M]
	b)	Write and explain about DC coupling and cascaded differential amplifier stages.	[7M]
3.	a)	List out the applications and Temperature ranges of IC 741 Op-amp.	[7M]
	b)	List out the DC characteristics of Op-amp and Explain.	[7M]
4.	a)	For the given output expression design an adder circuit using an Op-Amp: $V_0 = -(0.1V_1 + V_2 + 10V_3)$.	[7M]
	b)	With a neat sketch explain the operation of Anti log Amplifiers and derive its output voltage in detail.	[7M]
5.	a)	Design a second order butter worth low pass filter having an upper cut off frequency of 2 KHz.	[7M]
	b)	With a neat sketch explain the operation of IC 1496 balanced modulator.	[7M]
6.	a)	Explain the working of Astable multivibrator using 555 Timer with relevant circuits and waveforms.	[7M]
	b)	With a neat sketch, explain IC566 VCO operation and discuss any two applications.	[7M]
7.	a)	With a neat Sketch explain the R-2R ladder resistor type DAC.	[8M]
	b)	Define the following terms as related to ADC: i) Conversion time ii) Percentage resolution iii) Linearity.	[6M]

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