Code No: RT31042 **R13** SET - 1

III B. Tech I Semester Supplementary Examinations, May - 2018

LINEAR IC APPLICATIONS

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

Time: 3 hours Max. Marks: 70

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

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PART –A

1	a)	What are the properties of dual input unbalanced output differential amplifier?	[3M]
	b)	Define CMRR of op-amp.	[3M]
	c)	Derive the gain of non inverting amplifier.	[4M]
	d)	Draw the schematic of a second order High-pass filter and sketch the frequency response.	[4M]
	e)	Mention the applications of 555 timer used as Monostable and Astable operations.	[4M]
	f)	What are the specifications of AD 574 (12 bit ADC)	[4M]

PART -B

2	a)	Analyze the dual input balanced output configuration of differential amplifier using DC.	[8M]
	b)	Write and Explain about DC coupling and cascaded differential amplifier stages.	[8M]
3	a)	Briefly explain the various types of IC packages. Mention the criteria for selecting an IC package.	[8M]
	b)	With a neat sketch explain the frequency compensation using pole – zero method.	[8M]
4	a)	Explain, how to obtain triangular wave using a square wave generator.	[8M]
	b)	Draw the circuit of Log and Anti log Amplifiers explain its operation.	[8M]
5	a)	Compare Active filters with passive filters.	[6M]
	b)	Discuss in detail about band pass and band reject filters.	[10M]
6	a)	Explain the operation of astable multivibrator using 555 IC Timer.	[8M]
	b)	Design a Mono stable multivibrator for 3ms pulse width.	[8M]
7	a)	Draw the circuit of weighted resistor DAC and derive expression for output analog voltage Vo.	[10M]
	b)	Find out step size and analog output for 4 -bit R-2R ladder DAC, when input is 0 1 1 1 and 1 1 1 1, assume Vref=+5V.	[6M]

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