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

III B. Tech I Semester Supplementary Examinations, October/November - 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 is a Level translator?	[3M]
	b)	Define slew rate and PSRR	[4M]
	c)	Draw the circuit of (i) voltage to current (V to I) converter with grounded load (ii) current to voltage (I to V) converter with grounded load	[4M]
	d)	Mention the applications of Analog switches.	[4M]
	e)	Define lock range, capture range and pull-in-time.	[4M]
	f)	Draw the circuit of R-2R ladder DAC.	[3M]

PART -B

2	a)	What is an Op-amp. Briefly explain the necessity and function of different stages of an Op-amp with respect to its block schematic.	[8M]
	b)	Explain the DC analysis of single input unbalanced output amplifier.	[8M]
3	a)	Define and explain the significance of following terms : i)CMRR ii) Drift	[8M]
	b)	List out electrical characteristics of an op-amp.	[8M]
4	a)	Draw the circuit diagram of instrumentation amplifier using 741 op - amp and explain its operation.	[8M]
	b)	With a neat sketch explain the op-amp differentiator circuit.	[8M]
5	a)	Explain the operation of a sample and hold amplifier.	[10M]
	b)	Explain IC1496 balanced modulator with a neat sketch.	[6M]
6	a)	Explain the operation of Schmitt trigger circuit with input and output waveforms.	[8M]
	b)	Describe PLL with block diagram. Also discuss applications of PLL in phase detector and voltage controlled oscillator.	[8M]
7	a)	Explain the working of a dual slope A/D converter.	8M]
	b)	Enlist the advantages and disadvantages of dual slope ADC.	[8M]

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