Code No. 6090 / S

FACULTY OF ENGINEERING

B.E. 3/4 (EE/Inst.) I – Semester (Supplementary) Examination, July 2014

Subject : Linear integrated Circuits

Time : 3 hours **Max. Marks : 75**

Note: Answer all questions from Part - A. Answer any FIVE questions from Part - B.

PART – A (25 Marks)

1	List the non-ideal dc characteristics of an Op-amp.	2
2	What is CMRR? What is the CMRR of an ideal Op-amp?	2+1
3	Distinguish between astable, bistable and monostable multivibrators.	2
4	What is a peak detector?	2+1
5	How to avoid false triggering of 555 timer when reset function is not used?	2+1
6	How is R-2R ladder DAC superior to weighted resistor DAC?	2
7	What is the function of voltage regulator?	2+1
8	Mention the limitations of linear voltage regulators.	2
9	Distinguish between passive and active filters.	2
10	What is a universal filter?	2+1

PART – B (50 Marks)

11	a)	Define slew rate. How does this limit the response of an Op-amp? How can the slew rate be improved?	5
	b)	The input offset voltage of an Op-amp is 10mv dc. For a non-inverting amplifier with z_f = 10 KΩ and z_i = 1 KΩ. What is the maximum possible output offset voltage?	5
12		Explain the operation of a precision full wave rectifier circuit.	10
13	a)	Design a square wave generator to operate at a frequency of 1.5 kHz.	5
	b)	Explain dual slope integrating type ADC.	5
14	a)	Explain dual voltage regulator.	5
	b)	Explain series voltage regulator using Op-amp.	5
15	a)	State the merits and demerits of active filters over passive filters.	5
	b)	Determine i) 'Q' factor ii) f1 and f2 for a second order band pass filter with a center frequency of 1 kHz and bandwidth = 20 Hz.	5
16		Write short notes on a) D/A converters b) switched capacitor filter	5 + 5
17	a)	Design a BPF with butter worth response for the following specifications f_0 = 10 kHz, Q = 10 ; pass band gain ≥ 10.	5
	b)	Explain practical differentiator.	5

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