B.E Full Time Degree END SEMESTER EXAMINATIONS, April/May2019

Third Semester, EEE / R- 2012

EE 8304 Linear Integrated Circuits

Time: 3 Hours

Max. Marks: 100

Answer ALL Questions

PART – A (10 x 2 = 20 Marks)

1. What is need for photo etching process in IC fabrication?
2. Discuss on package types of monolithic ICs.
3. List the ideal characteristics of OpAmp.
4. Why is CMRR and slew rate determined?
5. How are ADCs catogorised?
6. Compare passive and active filters.
7. What is lock range in PLL ICs?
8. Why are Timer ICs called as clock generators?
9. Give the application of IC 8038.
10. What is the need for isolation amplifier?

PART – B (5 x 16 = 80Marks)

11.a With neat figure elaborate the etching process in IC Fabrication technique and discuss on realization of Transistor, resistors . (16)

12.a. Discuss on the realization of adder, subtractor, differentiator circuits using OpAmp using negative feedback circuit with uA741 OpAmp IC . The components are R1=1Kohm, R2=0.5 Kohm Rf1 =5 Kohm, c=1uF .Compute the output voltage and Af . (4+4+8)

(OR)

12.b. Write briefly on any two of the following with OpAmp: (8+8)

i. Compute Af; Rif; Rof; BW; offset voltage for a inverting amplifier.

ii. Differential Amplifier

iii. Sine wave Generator using OpAmp to output a frequency of 1 KHz

13. a Write briefly on any two of the following with OpAmp: (8+8)

i. Analog First order HighPass Filter
ii. Successive approximation ADC
iii. 3 Bit DAC

(OR)

13. b. Write briefly on any two of the following with OpAmp: (8+8)

i. Peak Detector Circuit
ii. Schmitt Trigger circuit
iii. Clipper circuits.

14. a. (i) Describe the 555 Timer IC . (8+8)
(ii) Design a Astable Multivibrater Circuit to generate output square wave using a 555 Timer IC and state how frequency values can be tuned with choice of C=0.02μF, variable resistor of 1Ohm to 2 KOhm. .

(OR)

14. b. With neat figures explain the (8+8)

(i) Principle of operation of VCO IC566

(ii) Frequency Division Application using PLL IC 565.

15. a. Answer any two of the following: (8+8)

i. Optocoupler
ii. Power amplifier.
iii. Application of regulator ICS

(OR)

15. b. What is voltage and current regulation? Discuss on voltage regulation ICs applicable for analog and digital circuits. (8+8)