Roll No.

ELECTRICAL AND ELECTRONICS ENGINEERING

III Semester

EE8304 Linear Integrated Circuits

(Regulation 2012)

Time: 3 Hours   Answer ALL Questions   Max. Marks 100

PART-A (10 x 2 = 20 Marks)

1. What are the advantages of ICs over discrete circuits.?

2. Distinguish between isotropic and anisotropic etching processes.

3. Define CMRR of an op-amp.

4. What is the need for frequency compensation in practical op-amps?

5. Write the limitations of dual slope ADC.

6. What is a sample and hold circuit? Where is it used?

7. Draw the circuit diagram of a R-2R ladder D/A converter

8. Compare V/I and I/V converters.

9. What is a linear voltage regulator?

10. Mention the advantages of opto-couplers.

Part – B (5 x 16 = 80 marks)

11. With neat sketches, explain how a monolithic diode can be fabricated.

12. a) Discuss about the voltage series feedback and shunt feedback amplifiers in detail.
    (OR)
    b) Derive the gain and explain the operation of inverting and non-inverting Op-Amp.

13. a) Draw and discuss the operation of a first order butter worth active low pass filter and derive its transfer functions.

    (OR)
    b) What is delta sigma modulation? With a neat diagram, explain the A/D conversion technique using Delta modulator.

14. a) Draw the block diagram of a monostable multivibrator using 555 timer and derive an expression for its frequency of oscillation.
    (OR)
    b) With neat circuit diagrams explain the operation of Phase Lock Loop. Also discuss its merits and applications.

15 a) (i)Explain the features and operations of 8038 function generator.   (8)

(ii) Discuss the need and applications of isolation amplifiers.   (8)

(OR)

b) (i)Write a technical note on switching regulator.   (8)

(ii) Draw and explain the operation of an opto electronic IC.   (8)