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**B.E / B.TECH (Full-Time) DEGREE EXAMINATIONS, APRIL/MAY 2012**

**ELECTRICAL AND ELECTRONICS ENGINEERING BRANCH**

**FIFTH SEMESTER**

**EE9303 LINEAR INTEGRATED CIRCUITS**

**Time : 3 Hours**

**Regulations 2008**

**Max.Marks : 100**

**Answer All Questions**

**Part – A**

**10 x 2 = 20 Mark**

1. What are the characteristics of ideal op-amp?
2. The input to inverting input of an ideal op-amp is 0 volts and to non-inverting terminal is - 0.1 volts. Compute the value at the output voltage.
3. What do you understand by the terms acquisition time and aperture time in sample and hold circuits?
4. How the inverted R-2R DAC is better than R-2R ladder DAC?
5. What are the requirements for producing sustained oscillations in feedback circuits?
6. What is a Schmitt trigger?
7. What is purpose of modulating voltage in 555 Timer?
8. What are the problems associated with switch type phase detector?
9. What are the limitations of fixed voltage regulators?
10. What is an opto-coupler IC?

**Part – B**

**5 x 16 = 80 Mark**

11. (a) Write short notes on:

- |                           |     |
|---------------------------|-----|
| (i) Float Zone Process    | (8) |
| (ii) Isolation Techniques | (8) |

12. (a) (i) Derive an expression to determine the output of a Differentiator using ideal op-amp. (8)

(ii) Draw and explain the clipper circuit which will clip the input signal below a reference voltage. (8)

(OR)

(b) Explain the working of Dual slope ADC. Also explain how it offers better noise rejection ratio. (16)

13. (a) Draw the circuit of a first order and second order butter worth active low pass filter and derive its transfer functions. (16)

(OR)

(b) Draw and explain the operation of triangular wave generator. (16)

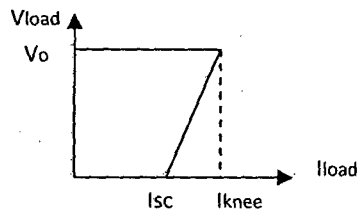
14. (a) (i) Draw and explain the functional block diagram of PLL. (8)

(ii) Draw the FSK demodulator circuit using IC565 and explain its operation. (8)

(OR)

(b) Draw and explain the operation of Astable multivibrator using 555 Timer. (16)

15. (a) (i) Construct a suitable circuit for the characteristic curve shown below and its operation (12)



(ii) Discuss the limitations of linear voltage regulators. (4)

(OR)

(b) Discuss with relevant diagram the working of 8038 IC's. (16)