Register No: ……………………….

B.E. DEGREE EXAMINATIONS: APRIL / MAY 2011

Fourth Semester

ELECTRONICS AND INSTRUMENTATION ENGINEERING

U07EI404: Linear Integrated Circuits

Time: Three Hours   **Maximum Marks: 100**

Answer All Questions:-

PART A (10 x 1 = 10 Marks)

1. In which integrated circuits, all circuit components are manufactured into or on top of a single chip of silicon?

   a) Monolithic   b) Hybrid   c) Both a&b   d) Masking

2. Melting point of silicon is

   a)1430 C   b)1420 C   c)1530 C   d) 1440 C

3. Differential input voltage between non-inverting & inverting input terminals is

   a) 1V   b) 0V   c) -1V   d) 2V

4. CMRR is expressed in

   a) Ampere   b) Volt   c) Decibels   d) No unit

5. Test and measurement instrumentation is the application of

   a) Clipper   b) Clamper   c) Peak detector   d)Both b&c

6. The Clamper is also called as

   a) dc inserter   b) dc restorer c) ac inserter   d) Both a&b

7. Name the free running multivibrator which operates at a set frequency fo

   a) VCO   b) PLL   c) LM 317   d) LM 723

8. The 565 PLL is very useful as a _____ demodulator

   a) PSK   b) MSK   c) QPSK   d) FSK

9. The function of a voltage regulator is to provide _____ dc voltage for powering.

   a) Stable   b) Linear   c) Non-linear   d) Unstable

10. _____ is a circuit which compares a signal voltage applied at one input of an op-amp with a known reference voltage at the other input.

   a) Comparator   b) Summer   c) Integrator   d) Peak detector.

PART B (10 x 2 = 20 Marks)

11. Define Integrated Circuit.

12. Write the base chemical reaction in the epitaxial growth process of pure silicon.

13. What is an Op – Amp?

14. Define CMRR.

15. What are the Ideal Characteristics of Op – Amp?

16. Draw the pin configuration of VCO.

17. What are the different types of voltage regulators?

18. Define Line Regulation and Load Regulation.

19. What is the resolution for a DAC?

20. For an n-bit flash type A/D convertor, what is the number of comparators required and write the disadvantages of that convertor.

PART C (5 x14 = 70 Marks)

21. a) Explicate the basic process involved in fabricating ICs using Planer technology

[OR]

b) Explain the fabrication of a typical circuit

22. a) With circuit and waveforms explain the application of Op – Amp as

(i) Summer (ii) Differentiator   (iii) Integrator

[OR]

b) (i) Sketch the Peak detector using Op-Amp & Explain its operation

(ii) Draw the comparator circuit using Op-Amp and explain its operation

23. a) Explain the functioning of PLL circuit and applications

[OR]

b) Explain the functional block, characteristics and applications of VCO

24. a) Explain the operation of i) Astable Multivibrator   ii) Monostable Multivibrator using op-amp.

[OR]

b) Explain the operation of following D/A conversion

(i) Binary weighted resistor DAC   (ii) R – 2R Ladder type DAC

25. a) Explain about Opto couplers and Opto electronic ICs

[OR]

b) Draw the internal circuit of LM 380 power amplifier and explain its operation

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