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Question Paper Code: 50345

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2017

Fourth Semester

Electrical and Electronics Engineering

15UEE405 - ANALOG INTEGRATED CIRCUITS

(Regulation 2015)

Duration: Three hours   Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. The Standard Package configurations of manufacturing IC

    (a) Glass metal package   (b) Ceramic flat package
    (c) Dual-in-line   (d) All the above

2. Photolithography involves

    (a) Making Photographic mask and photo etching
    (b) Only Photo etching
    (c) Only Masking
    (d) None of these

3. An ideal op-amp should have

    (a) Zero input impedance and output impedance

    (b) Infinite input and output impedance

    (c) Infinite input impedance and zero output impedance

    (d) Zero input impedance and infinite output impedance

4. An integrator is mostly preferred over a differentiator because of

    (a) More stability   (b) Less voltage drift
    (c) Less noise   (d) All the above

5. The clamper is also known as

    (a) DC restorer   (b) DC inserter
    (c) DC level shifter   (d) All the above

6. How many levels is possible 2 bit DAC?

    (a) 2   (b) 4   (c) 8   (d) 16

7. IC 555 can be used as

    (a) Monostable Multivibrator   (b) Pulse detector
    (c) Ramp generator   (d) All the above

8. The frequency deviation of VCO is directly proportional to

    (a) DC control voltage   (b) Applied power supply
    (c) Ground   (d) Frequency of the signal

9. LM 317 is a

    (a) Voltage regulator IC   (b) Fixed three terminal voltage regulator IC
    (c) Current regulator IC   (d) Fixed three terminal current regulator IC

10. A power amplifier is a

    (a) Current amplifier   (b) Voltage amplifier
    (c) Transresistance   (d) Transconductance amplifier

PART - B (5 x 2 = 10 Marks)

11. List the advantages of integrated circuits.

12. Mention the characteristics of an ideal op-amp.

13. Mention the difference between Schmitt trigger and comparator.

14. What is the purpose of having a low pass filter in PLL?

15. Define line regulation.

PART - C (5 x 16 = 80 Marks)

16. (a) Explain the basic planar processes involved to fabricate IC using silicon planar technology with neat sketch. (16)

Or

    (b) With neat sketch explain the steps involved in fabrication of FET. (16)

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17. (a) Explain the AC and DC characteristics of op-amp in detail. (16)

Or

(b) With neat sketch explain the operation of differentiator and integrator. (16)

18. (a) (i) Discuss the operation of instrumentation amplifier with neat diagram. (8)

(ii) Explain the working of clipper and clamber circuit. (8)

Or

(b) Construct the dual slope and successive approximation type A/D converter. (16)

19. (a) (i) Explain the working principle of IC555 timer in monostable mode. (8)

(ii) Explain the working of voltage controlled oscillator with neat diagram. (8)

Or

(b) With a neat diagram explain the applications of PLL. (16)

20. (a) Explain in detail about LM723 voltage regulators. (16)

Or

(b) Illustrate the working principles of function generator IC8038 with neat block diagram. (16)

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