Reg. No. :

Question Paper Code: 33502

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2018

Third Semester

Electronics and Instrumentation Engineering

01UEI302 - LINEAR INTEGRATED CIRCUITS AND APPLICATIONS

(Regulation 2013)

Duration: Three hours   Maximum: 100 Marks

Answer ALL Questions.

PART A - (10 x 2 = 20 Marks)

1. Give the classifications of ICs according to level of integration.

2. On what factors does the threshold voltage depend?

3. Draw the pin configuration of IC*741*.

4. Define CMRR and slew rate.

5. What are the advantages of voltage follower?

6. What are all the important features of instrumentation amplifier?

7. List out the features of IC555 timer.

8. Draw the pin configuration of VCO.

9. Calculate the required input angle voltage and resultant output voltage for angles of (a) $\pm 45^0$.

10. What is meant by optocoupler?

PART - B (5 x 16 = 80 Marks)

11. (a) Explain the following steps involved in IC fabrication with neat sketches   (16)

    (i) Crystal growth and wafer preparation.
    (ii) Epitaxial growth.
    (iii) Photo lithography
    (iv) Ion Implantation.

Or

(b) Illustrate the basic processes involved in fabricating Diode using planar technology.
(16)

12. (a) Illustrate the frequency response characteristics of Op-amp with suitable equations and plots.   (16)

Or

(b) Explain about the AC characteristics of Op-Amp.   (16)

13. (a) What is an instrumentation amplifier? Draw and explain the commonly used three Op-amp instrumentation amplifier circuits. Derive expression for its gain.   (16)

Or

(b) Describe in detail and explain the operation of an Non-inverting Schmitt trigger. (16)

14. (a) With neat circuit diagram, explain the operation of astable multivibrator with necessary waveforms..   (16)

Or

(b) With the help of a neat sketch, explain PLL demodulation of an FM signal.   (16)

15. (a) With functional block diagram explain about general purpose linear IC723 regulator.   (16)

Or

(b) Outline the concepts of ICL 8038 function generator IC.   (16)

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