Reg. No. : | | | | | | | | | | |

Question Paper Code: 33502

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2019

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. List out the applications of the metallization process.
3. Define common - mode rejection.
4. Define CMRR and slew rate.
5. How the gain of basic instrumentation amplifier is determined?
6. Name any two types of oscillators.
7. Draw the circuit of basic 555 timer used in monostable(one shot) mode.
8. Draw the pin configuration of VCO.
9. What is power booster?
10. Classify the modes of adjustable voltage regulator.

PART - B (5 x 16 = 80 Marks)

11. (a) Explain the fabrication of MOSFET. (16)

Or

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

12. (a) Describe the DC characteristics of op-amp. (16)

Or

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

13. (a) With the circuit diagram, discuss the following applications of operational amplifier:

(i) Sample and hold circuit (6)

(ii) Comparator (5)

(iii) V/I converter (5)

Or

(b) (i) Draw the functional diagram of successive approximation type A/D converter and explain its principle of operation. (10)

(ii) Draw a neat R-2R ladder DAC and explain its principle. (6)

14. (a) Describe the block diagram and connection diagram of voltage controlled oscillator. (16)

Or

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

15. (a) With suitable schematic diagram describe the functioning of an 8038 function generator IC. (16)

Or

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