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

Question Paper Code: 31052

B.E. / B.Tech. DEGREE EXAMINATION, APRIL 2015.

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. Classify integrated circuits.
2. List out the applications of the metallization process.
3. Define an ideal Op-amp.
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 block diagram of PLL.
9. Define fixed voltage series regulator.
10. Write down pin configuration of an IC8038.

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) Oxidation.
(iv) Ion Implantation.

Or

(b) (i) Explain the fabrication of MOSFET. (8)

(ii) List out the ideal characteristics of Op-amp. (8)

12. (a) With a neat circuit diagram, explain the working of the following circuits using an ideal Op Amp (i) Integrator (ii) Differentiator. (16)

Or

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

13. (a) (i) Design an V to I and I to V converter using IC741. (8)

(ii) Explain the design and analysis of filter circuit using first order low pass Butterworth filter. (8)

Or

(b) (i) With a neat block diagram, explain the working of Successive approximation type analog to digital converter. (10)

(ii) Design a Wien bridge oscillator using Op-amp. (6)

14. (a) Explain with the circuit diagram and waveform of Monostable and Astable multivibrator using IC555 timer. (16)

Or

(b) (i) Explain about monolithic PLL IC565. (8)

(ii) Write a note on application of PLL IC565. (8)

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

Or

(b) (i) Write notes on isolation amplifier. (8)

(ii) With neat diagram explain about optocoupler IC. (8)

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