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Question Paper Code: 31352

B.E. / B.Tech. DEGREE EXAMINATION, NOVEMBER 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. State lithography process.
2. List the IC package types of Op-amp.
3. Draw the pin configuration of IC741.
4. Define input bias current and input offset current.
5. Compare the first order low pass and high pass filters.
6. How many clock periods are required for an 8 bit successive approximation time ADC for a single conversion?
7. A PLL frequency multiplier has an input frequency of f and a decade counter is included in the loop. What will be the frequency of the PLL?
8. Draw the pin configuration of VCO.
9. List the different types of voltage regulators.
10. Define power amplifier.

PART - B (5 x 16 = 80 Marks)

11. (a) Illustrate the basic processes involved in fabricating ICs using planar technology. (16)

Or

- (b) Explain internal circuit of Op-amp with neat diagram. (16)

12. (a) (i) Explain the DC characteristics of an Op-amp. (8)
(ii) Illustrate the frequency response characteristics of Op-amp with suitable equations and plots. (8)

Or

- (b) With circuit and waveforms explain the application of Op-amp as (i) Summer
(ii) Integrator. (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) (i) Illustrate the operation of sample and hold circuits. (8)
(ii) Outline the concepts of binary weighted resistor type D/A conversion techniques. (8)

14. (a) With neat circuit diagram, summarize the operation of astable multivibrator and monostable multivibrator. (16)

Or

- (b) (i) Explain the functional blocks of Phase Lock Loop circuit. (8)
(ii) Outline the concepts of FSK demodulation. (8)

15. (a) With neat circuit diagram, explain any two types of voltage regulators. (16)

Or

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