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Question Paper Code : 91403

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2014.

Fourth Semester

Electronics and Communication Engineering

EC 2254/EC 44/EC 1254/080290022/10144 EC 405 — LINEAR INTEGRATED CIRCUITS

(Regulation 2008/2010)

(Common to PTEC 2254 Linear Integrated Circuits for B.E. (Part-Time) – Third Semester ECE - Regulation 2009)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are the advantages of IC over discrete component circuits?

2. What is meant by monolithic IC?

3. State the difference between conventional and precision rectifier.

4. Define Bandwidth of a filter.

5. What is the function of a phase detector in a PLL?

6. Define modulation index.

7. Give the applications of sample and hold circuit.

8. Define resolution of a DAC.

9. Define line and load regulation of a regulator.

10. What are the different protection circuits inside the monolithic IC regulator?

PART B — (5 × 16 = 80 marks)

11. (a) Explain the different types of resistor fabrication in an IC. (16)

Or

(b) (i) Describe the AC performance characteristics of a operational amplifier. (8)

(ii) Describe the DC performance characteristics of a operational amplifier. (8)

12. (a) With neat sketch explain the operation of a 3 op-amp instrumentation amplifier. (16)

Or

(b) Explain the operation of precision full wave rectifier with neat sketch. (16)

13. (a) Describe the working of a analog multiplier using emitter coupled transistor pair. (16)

Or

(b) (i) With neat diagram describe the AM detection using PLL. (8)

(ii) With neat diagram describe the FM detection using PLL. (8)

14. (a) (i) Describe the working of a weighted resistor type DAC. (8)

(ii) Describe the working of a R-2R type DAC. (8)

Or

(b) With neat sketch explain the working of a flash type ADC. (16)

15. (a) Describe the working of a Astable multivibrator using op-amp. (16)

Or

(b) Explain the operation of a switching regulator with neat diagram. (16)

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