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Question Paper Code : 51401

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 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 — ($10 \times 2 = 20$ marks)

1. List any two advantages of ICS over discrete components.

2. Define Slew rate.

3. What is a voltage follower?

4. Draw the circuit diagram of peak detector.

5. State the operation of a basic PLL.

6. What is the need for frequency synthesizer?

7. What is a sample/hold circuit?

8. Give any two advantages of SA type ADC.

9. List the types of multivibrators.

10. What is an opto–coupler?

PART B — (5 × 16 = 80 marks)

11. (a) Explain the construction of monolithic bipolar transistor, monolithic diode and integrated resistors. (16)

Or

(b) Explain the Internal circuit diagram of IC 741. Discuss its AC and DC performance characteristics. (16)

12. (a) With neat diagram explain logarithmic amplifier and antilogarithmic amplifier. (16)

Or

(b) With neat diagram explain the application of op-amp as precision rectifier, clipper and clamper. (16)

13. (a) Explain the working of Analog multiplier using emitter coupled transistor pair. Discuss the applications of analog multiplier IC. (16)

Or

(b) Explain the application of PLL as AM detection, FM detection and FSK demodulation. (16)

14. (a) Explain weighted resistor type and R–2R Ladder type DAC. (16)

Or

(b) Explain Flash type, Single slope type and Dual slope type ADC. (16)

15. (a) With neat diagram explain IC 723 General Purpose regulator. (16)

Or

(b) Explain in detail voltage to frequency and frequency to voltage converters. (16)