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

D 4151

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2008.

Fourth Semester

(Regulation 2004)

Electronics and Communication Engineering

EC 1254 — LINEAR INTEGRATED CIRCUITS

(Common to B.E. (Part-Time) Third Semester Regulation 2005)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — ($10 \times 2 = 20$ marks)

1. State the applications of band gap reference circuit.

2. What is a current mirror? What are its advantages?

3. What is a V to C converter?

4. Draw the circuit of an integrator.

5. Define lock range and capture range.

6. List the applications of PLL.

7. What is an analog switch?

8. Define resolution of DAC.

9. Name two applications of an isolation amplifier.

10. What are the advantages of a switched capacitor filter?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain the working of a Wildar current source. (6)

(ii) What is slew rate? Discuss the methods of improving slew rate. (10)

Or

(b) (i) What is an active load? Explain the CE amplifier with active load. (8)

(ii) Explain pole-zero compensation. (8)

12. (a) Explain a monostable amplifier. Deduce the expression for a closed loop voltage gain of a non-inverting amplifier. (16)

Or

(b) (i) Explain the operation of a Schmitt trigger. (10)

(ii) Explain log and antilog amplifiers. (6)

13. (a) Explain a four quadrant Gillbert cell multiplier circuit. (16)

Or

(b) (i) Explain VCO with suitable waveforms. (10)

(ii) Write short note on frequency synthesizer. (6)

14. (a) (i) Explain Sample and Hold circuit with suitable sketches. (8)

(ii) Explain binary weighted resistance D/A converter. (8)

Or

(b) (i) With a neat sketch explain the working of dual slope A/D converter. (10)

(ii) What is delta modulation? Explain Adaptive DM. (6)

15. (a) (i) Explain the operation of a monostable multivibrator using 555 timer. (10)

(ii) Write short notes on Optocoupler. (6)

Or

(b) (i) Explain F/V convertor with a neat block diagram. (10)

(ii) Draw the circuit of a switched capacitor Integrator and deduce the expression for the characteristic frequency of the Integrator. (6)

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