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

T 3214

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 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 × 2 = 20 marks)

1. Define unity gain bandwidth of an OP-Amp.

2. Define slew rate. What causes it?

3. Draw the circuit diagram of a non-inverting amplifier.

4. Give any four applications of a comparator.

5. What is FSK technique?

6. Draw the circuit of AM detector using PLL.

7. Which type ADC is the fastest? Why?

8. What is adaptive delta modulation?

9. What is a switched capacitor filter?

10. List the characteristics of optocoupler.

PART B — (5 × 16 = 80 marks)

11. (a) What is a current mirror? Discuss in detail the Wildar current source. (16)

Or

(b) Explain :

(i) Band gap reference. (12)

(ii) Methods of improving slew rate. (4)

12. (a) (i) Explain the operation of Instrumentation amplifier. (8)

(ii) Detail the working of Log and Antilog amplifiers. (8)

Or

(b) With a neat circuit, explain the operation of Schmitt trigger. (16)

13. (a) (i) Explain PLL used as an Am Detection. (8)

(ii) Explain how frequency multiplication is done using PLL. (8)

Or

(b) (i) With a neat sketch, explain the working of variable transconductance multiplier. (10)

(ii) Write notes on frequency synthesiser. (6)

14. (a) (i) Explain the working of Dual scope ADC. (8)

(ii) With a neat circuit, explain the operation of a Binary weighted resistor D/A converter. (8)

Or

(b) (i) Write notes on Analog switches. (6)

(ii) Explain Delta modulation. What are its advantages and disadvantages? (10)

15. (a) What are the various blocks that form a Basic Voltage Regulator? Explain the series and shunt voltage regulator. List advantages of IC voltage regulators. (16)

Or

(b) (i) Discuss the operation of IC 555 as a monostable multivibrator. Draw the waveform and explain. (8)

(ii) Draw the functional block diagram of switching regulator and explain. (8)
