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

Question Paper Code : 52913

B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2019.

Fourth Semester

Electronics and Communication Engineering

EC 6404 — LINEAR INTEGRATED CIRCUITS

(Common to Medical Electronics / Robotics and Automation Engineering)

(Regulation 2013)

(Also Common to PTEC 6404 – Linear Integrated Circuits for B.E. (Part-Time) – Third Semester – Electronics and Communication Engineering – Regulation – 2014))

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is a Current Mirror circuit?

2. State the input terminals associated with an ideal Op-Amp.

3. What is the function of a sign changer?

4. List some important applications of a Comparator circuit.

5. State the commonly used terminologies associated with multipliers.

6. Illustrate the need of Gilbert multiplier cell.

7. Why the analog to digital data conversion is needed?

8. Outline any two specifications of ADC.

9. Identify the two basic requirements for sustained oscillations.

10. Why the bias voltages in electronic circuits need to be regulated?

PART B — (5 × 13 = 65 marks)

11. (a) Describe about BJT differential amplifier using active loads with neat sketch.

Or

(b) Explain about the various stages of a general Op-Amp circuit.

12. (a) (i) Describe the details of voltage follower circuit.

(ii) Outline the details about Voltage to Current converter.

Or

(b) Describe in detail about the Schmitt Trigger with suitable circuit and waveforms.

13. (a) Explain the internal configuration of the multiplier IC and explain.

Or

(b) Describe in detail about the voltage controlled oscillator with a suitable block diagram.

14. (a) Draw the current mode R-2R Ladder DAC and explain in detail.

Or

(b) Draw the block schematic of a Single Slope type ADC and explain the same in detail.

15. (a) Draw the internal circuit diagram of an IC723 regulator and explain.

Or

(b) Derive the frequency of oscillation of a saw tooth waveform generator using an Op-Amp and explain.

PART C — (1 × 15 = 15 marks)

16. (a) Summarize the open-loop Op-Amp configurations in detail.

Or

(b) Explain the operation of a video amplifier IC with neat sketch.

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