C14-EC-402

4456

BOARD DIPLOMA EXAMINATION, (C-14)

OCT/NOV—2018

DECE—FOURTH SEMESTER EXAMINATION

LINEAR INTEGRATED CIRCUITS

Time : 3 Hours] [*Total Marks* : 80

PART—A 3×10=30

Instruction : (1) Answer **all** questions. Each question carries **three** marks.

(2) Answers should be brief and straight to the point and shall not exceed **five** simple sentences.

1. Classify ICs based on manufacturing process.

2. Mention the merits of Surface Mount Technology (SMT).

3. Define input impedance, slew rate and input offset current.

4. State the concept of virtual ground.

5. Mention the conditions required for stable operation of Wien bridge oscillator.

6. Distinguish between voltage time base generation and current time base generation.

7. What are the applications of PLL?

8. Draw the circuit diagram of positive clamper. Draw its input and output waveforms.

9. List the applications of voltage to current converter.

10. State the need for A/D and D/A conversion.

PART—B 10×5=50

Instruction : (1) Answer any **five** questions and each question carries **ten** marks.

(2) Answers should be comprehensive and the criteria for valuation is the content but not the length of the answers.

11. (*a*) State the advantages and disadvantages of ICs over discrete assembly. 5

(*b*) Explain various levels of integration. 5

12. Draw the block diagram of IC 741 and explain each block. Draw its pin out diagram. 10

13. Draw and explain the working of Op-amp Schmitt trigger circuit with waveforms. 10

14. Explain the operation of fixed positive voltage regulators and fixed negative voltage regulators. 10

15. Explain the operation biased positive clippers with waveforms. 10

16. Draw and explain the working of monostable multivibrator using 555 IC. 10

17. Draw and explain operation of instrumentation amplifier using three Op-amps. 10

18. Draw the circuit of D/A conversion using R-2R ladder network and explain its working. 10

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