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C14–EC–**402**

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BOARD DIPLOMA EXAMINATION, (C–14)

MARCH/APRIL—2016

DECE—FOURTH SEMESTER EXAMINATION

LINEAR INTEGRATED CIRCUITS

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

PART—A 3×10=30

Instructions : (1) Answer **all** questions.

(2) Each question carries **three** marks.

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

1. List the advantages of integrated circuits over discrete assembly.

2. Mention the power ratings of various IC packages.

3. Define CMRR, open-loop voltage gain and input offset voltage.

4. Draw the pin out diagram of IC 741.

5. Define sweep voltage and mention its applications.

6. List the types of IC regulators.

7. Classify clippers.

8. Mention the applications of clampers.

9. Give the advantages of instrumentation amplifier.

10. List the applications of current to voltage converter.

PART—B 10×5=50

Instructions : (1) Answer *any* **five** questions.

(2) Each question carries **ten** marks.

(3) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

11. Describe the stages of fabrication of capacitor on monolithic IC.

12. Draw and explain the circuit of OP-AMP non-inverting amplifier and derive the equation for its voltage gain.

13. Draw the circuit of OP-AMP Wien bridge oscillator and explain its working. State the conditions required for stable operation of Wien bridge oscillator.

14. Draw and explain the working of OP-AMP astable multivibrator with waveforms.

15. Draw and explain the block diagram of IC 555.

16. Explain the working of frequency multiplier and FM demodulator using PLL.

17. Draw the circuit of D/A conversion using weighted resistors and explain its working.

18. Explain the successive approximate method of A/D conversion with circuit diagram.

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