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C16–EC–401

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BOARD DIPLOMA EXAMINATION, (C–16)

MARCH/APRIL—2018

DECE—FOURTH SEMESTER EXAMINATION

LINEAR ICs AND APPLICATIONS

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 six merits of SMT technology.

2. List the ideal characteristics of operational amplifier.

3. List the types of IC regulators.

4. Define sweep voltage.

5. Draw the circuit diagram of summer using Op-amp.

6. Define lock range and capture range of PLL.

7. List the applications of PLL.

8. Define monotonicity and settling time of D/A converter.

9. List any three applications of current to voltage converter.

10. Draw the pin out diagram of IC MAX1112 serial ADC.

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. *(a)* Explain various levels of integration. 4

(b) List and explain the different types of IC packages and mention their power rating. 6

12. *(a)* Draw and explain the operation of inverting amplifier using Op-amp. 5

(b) Explain the operation of adjustable voltage IC regulator. 5

13. Draw the circuit diagram of Wien bridge oscillator using Op-amp and explain its operation. State the conditions required for stable operation of Wien bridge oscillator.

14. Draw and explain the working of Op-amp mono-stable multi-vibrator with waveforms.

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

16. *(a)* Draw and explain the block diagram of PLL IC-LM 565. 6

(b) Explain the frequency multiplier using PLL. 4

17. Draw and explain the instrumentation amplifier using three Op-amps and list advantages of it.

18. Explain the working of counter type A/D conversion with circuit diagram.

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