

6435

BOARD DIPLOMA EXAMINATION, (C-16)

MAY/JUNE—2023

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. Classify Integrated Circuits (ICs) based on manufacturing process.
2. Define CMMR and slew rate of an operational amplifier.
3. Draw the circuit diagram of non-inverting operational amplifier.
4. Give the conditions required for stable operation of op-amp based Weinbridge oscillator circuit.
5. State the use of analog computer.
- * 6. List the applications of PLL.
7. Draw the PIN diagram of 555 IC.
8. List any three applications of voltage to current converter circuit.
9. State the need of D/A converter.
10. Define resolution and accuracy of D/A converter.

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PART—B

10×5=50

- Instructions :** (1) Answer *any five* questions.
(2) Each question carries **ten** marks.
(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

- 11.** (a) Explain the surface mount technology(SMT). 6
(b) List any four merits of SMT technology. 4
- 12.** (a) Explain the operation of adjustable voltage regulator (LM317). 5
(b) Explain inverting amplifier using op-amp. 5
- 13.** Explain the working of RC phase shift oscillator using op-amp with a neat diagram. 10
- 14.** Explain the working of Schmitt trigger using op-amp with waveforms. 10
- 15.** Explain the working of monostable multivibrator circuit using 555 IC. 10
- 16.** (a) Explain the working of frequency multiplier using PLL. 5
(b) Explain FM demodulator using PLL. 5
- 17.** (a) Explain the working of current to voltage converter circuit. 6
(b) Draw the instrumentation amplifier with three op-amps. 4
- 18.** Explain A/D conversion using counter method with a neat diagram. 10

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