



C16-EC-401

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BOARD DIPLOMA EXAMINATION, (C-16)
OCTOBER—2020
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 any three advantages of integrated circuits (ICs) over discrete assembly circuits.
2. List the characteristics of ideal operational amplifier.
3. List the IC regulators and give their advantages.
4. List the applications of multivibrators.
5. Draw integrator circuit using op-amp.
6. Define lock range and capture range of PLL.
7. Draw the pin diagram of 555 IC.
8. State the need of A/D converter.
9. Define resolution and accuracy of D/A converter.
10. Draw the pinout diagram of IC MAX 1112 serial ADC.

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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 the criteria for valuation are the content but not the length of the answer.

- 11.** (a) Explain the surface mount technology (SMT). 6
(b) List any six merits of SMT. 4
- 12.** (a) Draw and explain operation of differential amplifier. 5
(b) Explain the operation of fixed positive voltage IC regulator. 5
- 13.** Explain the working of boot strap sweep circuit using op-amp. 10
- 14.** Explain the working of astable multivibrator using op-amp with waveforms. 10
- 15.** Draw the block diagram of 555 IC and explain the function of each PIN. 10
- 16.** (a) Explain the concept of PLL. 4
(b) Explain the operation of VCO (LM 566) 6
- * **17.** Draw and explain the working of instrumentation amplifier using three op-amps and list the advantages. 10
- 18.** Explain A/D conversion using successive approximation method with neat diagram. 10

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