C-20-EC–402

# 7440

BOARD DIPLOMA EXAMINATION, (C-20)

JUNE/JULY—2022

DECE - FOURTH SEMESTER EXAMINATION

## ELECTRONIC CIRCUITS-II

*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 applications of clampers.
2. Draw the circuit diagram of unbiased positive clipper.
3. Distinguish between linear and digital ICs.
4. List the six merits of SMT technology.
5. State the concept of virtual ground.
6. Define sweep voltage.
7. Define lock range of PLL.
8. List any three applications of PLL.
9. State the need for A/D conversion.
10. List the IC numbers of any three ADCs.

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PART—B 8×5=40

Instructions : (1) Answer all questions.

(2) Each question carries eight marks.

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

11. *(a)* Explain the need of wave shaping circuits.

(OR)

*(b)* Explain the double ended diode clippers with waveforms.

12. *(a)* Explain with the circuit diagram working of differential amplifier using BJT.

(OR)

*(b)* Explain the operation of inverting amplifier using op-amp and derive the expression for voltage gain.

13. *(a)* Draw the circuit diagram of Miller's sweep circuit using op-amp and explain its operation.

(OR)

* *(b)* Draw the circuit diagram of Wien bridge oscillator using op-amp and explain its operations.

14. *(a)* Explain the working of mono-stable multivibrator using 555 IC with a circuit diagram.

(OR)

*(b)* Draw the internal block diagram of PLL-LM 565 and explain its operations.

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15. *(a)* Explain D/A converter using R-2R ladder network.

(OR)

*(b)* Explain the A/D conversion using counter method.

PART—C 10×1=10

Instructions : (1) Answer the following question.

(2) The question carries ten marks.

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

16. Prove that frequency of op-amp oscillator is dependent only on components connected externally.

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