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C20-EC–402

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BOARD DIPLOMA EXAMINATION, (C-20)

OCTOBER/NOVEMBER—2023

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 different linear and non-linear wave shaping circuits.

2. List the applications of clampers.

3. State the concept of virtual ground.

4. List different IC packages.

5. List the characteristics of ideal operational amplifier.

6. List the applications of voltage and current time-base generators.

7. Define lock range of PLL.

8. List any three applications of PLL.

9. List IC numbers of any three DACs.

10. State the need for A/D and D/A conversion.

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 RC integrator circuit with waveforms.

(OR)

(b) Explain the working of Zener diode clipper with waveforms.

12. *(a)* Explain the functional block diagram of an operational amplifier.

(OR)

(b) Explain the function of Op-Amp as inverting amplifier with a circuit diagram.

13. *(a)* Explain the working of Op-Amp based Wein-bridge oscillator circuit.

(OR)

(b) Explain the working of Op-Amp based Schmitt trigger circuit with waveforms.

14. *(a)* Draw internal block diagram of PLL-LM565 and explain its working.

(OR)

(b) Draw the internal block diagram of 555 IC and explain the function of each block.

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

(OR)

(b) Explain A/D conversion using successive approximation method.

PART—C

10×1=10

Instructions : (1) Answer the following question.

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

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

16. Explain how Op-Amp used for mathematical applications such as buffering, scale changing and integrating.

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