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C23-EE-304

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BOARD DIPLOMA EXAMINATION, (C-23)

MARCH/APRIL—2025

DEEE – THIRD SEMESTER EXAMINATION

ELECTRONICS ENGINEERING

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. Draw the V-I characteristics of P-N junction diode.

2. List any three applications of IGBT.

3. State the need of voltage regulator in power supplies.

4. Draw basic block diagram of regulated power supply.

5. Define the terms *(a)* Feedback factor and *(b)* Amplifier.

6. List different types of coupling methods in amplifiers.

7. State the conditions required for sustained oscillations.

8. List any three applications of oscillators.

9. State the concept of virtual ground.

10. List the characteristics of an ideal operational amplifier.

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 is the content but not the length of the answer.

11. Explain the working of Zener diode and draw its V-I characteristics.

12. Explain and plot the input and output characteristics of transistor in CE configuration.

13. Explain the working and draw the circuit diagrams and waveforms of fullwave rectifier.

14. Explain the working of RC coupled amplifier with the circuit diagram and draw the frequency response curves.

15. *(a)* Explain the operation of transistor as an amplifier. 5

(b) State the need of an AF oscillator and RF oscillator. 5

16. Draw the circuit diagram and explain working of RC phase shift oscillator.

17. Explain the working of Op-Amp inverting amplifier.

18. Explain the operational amplifier as *(a)* Integrator and *(b)* Differentiator.

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