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C23-EE–304

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BOARD DIPLOMA EXAMINATION, (C-23)

MARCH/APRIL—2026

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 Zener diode.

2. State the different configurations of transistors.

3. Compare half-wave, full-wave and bridge rectifiers.

4. List the different types of filters used in power supplies.

5. Write the different types of coupling methods in amplifiers.

6. State the need of power amplifier.

7. Mention the applications of oscillators.

8. What are the conditions required for sustained oscillators?

9. Draw the circuit diagram of operational amplifier as differentiator.

10. Give the advantages of integrated circuits over discrete circuits.

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. Explain formation of PNP and NPN transistors. 10

12. Explain the working and VI characteristics of IGBT and mention their applications. 10

13. Explain the working of Zener diode as a voltage regulator with a neat sketch. 10

14. Explain the operation of transistor as an amplifier. 10

15. *(a)* Distinguish between voltage amplifier and power amplifier. 5

(b) Define oscillator and state the need of square wave oscillator. 5

16. Explain the working of RC phase-shift oscillator with circuit diagram. 10

17. Draw the circuit of differential amplifier and explain its working. 10

18. Explain the working of Opamp as inverting amplifier with waveforms. 10

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