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C16-EC–105

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BOARD DIPLOMA EXAMINATION, (C-16)

NOVEMBER/DECEMBER—2023

DECE - FIRST YEAR EXAMINATION

ELECTRONIC DEVICES AND POWER SUPPLIES

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 the factors that affect the resistance of a material.

2. List the applications of capacitors.

3. List the applications of AF and RF chokes.

4. Define a relay and state its applications.

5. List the different types of soldering methods.

6. Distinguish between intrinsic semiconductor and extrinsic semiconductor.

7. List the applications of Zener diode.

8. Define Alpha and Beta of a transistor.

9. Sketch the drain characteristics of JFET.

10. Define voltage regulation.

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. *(a)* Compare carbon and wire wound potentiometers. 6

(b) Define di-electric constant and di-electric strength of a material. 4

12. *(a)* List the steps involved in screen-printing for making PCBs. 5

(b) Explain the need of PCB in electronic equipment. 5

13. *(a)* Distinguish between drift current and diffusion current. 4

(b) Describe the formation of P-type semiconductor and state majority and minority carriers of P-type semiconductor. 6

14. Draw and explain the VI-characteristics of PN junction diode under forward bias and reverse bias. 10

15. *(a)* Distinguish between Zener and avalanche breakdowns. 5

(b) Compare performance characteristics of CB, CC and CE configurations. 5

16. *(a)* Explain the working of PNP transistor. 4

(b) Draw the input and output characteristics of common emitter configuration and show the cut-off, active and saturation regions. 6

17. With neat sketch, explain the construction and working of enhancement type n-channel MOSFET. 10

18. Explain the working of full-wave centre tap rectifier with circuit diagram and draw its input and output waveforms. List the disadvantages of centre tap full-wave rectifier. 8+2=10

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