6032

BOARD DIPLOMA EXAMINATION, (C-16)

MAY/JUNE—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. What are the physical factors that affect the value of a resistor?

2. List the specifications of inductors.

3. Define the terms dielectric constant and dielectric strength of a material.

4. Sketch the I.S.I symbols of SPST, SPDT and DPDT switches.

5. List the materials used in soldering.

6. Distinguish between drift current and diffusion current.

7. List any three applications of Zener diode.

8. Sketch the input characteristics of CB configuration.

9. List the advantages of JFET over BJT.

10. Define ripple factor for rectifier circuits.

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 the features of carbon and wire wound potentiometers.   4

       (b)   Explain the terms stray inductance and stray capacitance.   6

12.   Explain the steps involved in making double-sided PCB in sequence.   10

13.   Explain the formation of N-type semiconductor and draw its energy band diagram.   10

14.   Describe the working of PN junction diode with forward bias and reverse bias.   10

15.   *(a)*   Explain diode equation.   5

       (b)   Define alpha and beta of a transistor and give the relationship between them.   5

16.   Explain the construction and working of N-P-N transistor.   10

17.   Explain the construction and operation of N-channel JFET.   10

*   **18.**   Draw the circuit of centre-tapped full-wave rectifier and explain its working with waveforms.   10

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