C20-EC–105

7032

BOARD DIPLOMA EXAMINATION, (C-20)

SEPTEMBER/OCTOBER—2021

DECE - FIRST YEAR EXAMINATION

ELECTRONIC COMPONENTS 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. State the physical factors that affect the value of a resistor.

2. Define dielectric strength and dielectric constant of a material.

3. Draw the ISI symbols of SPST, DPST and DPDT switches.

4. List the materials used in screen printing.

5. Draw the energy band diagrams of conductors and semiconductors.

6. Distinguish between drift and diffusion currents.

7. Explain the diode equation.

8. Sketch the input and output characteristics of CE configuration.

9. State the advantages of JFET over BJT.

10. Define voltage regulation and ripple factor.

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. Explain the colour code used in resistors with necessary diagram and table.

OR

Explain the working of thermistor and sensistor.

12. With a neat sketch explain the working of general-purpose electromagnetic relay and mention its applications.

OR

Explain the steps involved in making double sided PCBs.

13. Explain the formation of P-type semiconductor and its energy band diagram with necessary diagrams.

OR

Explain the working of PN junction diode with forward and reverse biasing and plot diode V-I characteristics.

14. Explain the construction and working of n channel JFET.

OR

Explain the construction and working of n channel depletion type MOSFET.

15. Explain the working of full wave bridge rectifier with neat circuit diagram and waveforms.

OR

Draw the circuit diagram of transistor series voltage regulator and explain its operation.

Instructions : (1) Answer the following question.

(2) It carries **ten** marks.

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

16. Define α, β and γ of a transistor and find the relationship between α and β, β and γ, α, β and γ.

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