C20-AEI–105

7012

BOARD DIPLOMA EXAMINATION, (C-20)

JUNE/JULY—2022

DAEI - FIRST YEAR EXAMINATION

ELECTRONICS COMPONENTS AND DEVICES

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 any three common faults in resistors.

2. Define the term resistance.

3. Define the term capacitance.

4. Define self-inductance.

5. Define switch.

6. State the need of horn loud speaker.

7. Define intrinsic semiconductor.

8. Define alpha and beta factors.

9. Define filter circuit.

10. List any three materials used in screen-printing.

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. *(a)* Explain the working of slider switch with diagram.

(OR)

(b) *(i)* List different types of relays based on principle of operation. 4

(ii) List specifications and applications of relays. 4

12. *(a)* Explain the construction and working of PMMC loudspeaker with diagram.

(OR)

(b) Explain the working of carbon microphone with diagram. 4

13. *(a)* Explain the formation of PN junction diode with diagram.

(OR)

(b) Explain the working of varactor diode with diagram.

14. *(a)* Explain the working of NPN transistor with diagram.

(OR)

(b) Explain working of transistor in CB configuration with diagram.

15. *(a)* Explain the working of half-wave rectifier circuit with waveforms.

(OR)

(b) Explain about maintenance free battery and list any two applications.

PART—C

10×1=10

Instructions : (1) Answer the following question.

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

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

16. *(a)* A uniform wire with a resistance of 18 Ω is divided into three equal pieces and then they are joined in parallel. Find the equivalent resistance of the parallel combination. 5

(b) How would you use a river and two waterfalls to model a parallel configuration of two resistors? How does this analogy break down? 5

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