



C20-AEI-105

7012

**BOARD DIPLOMA EXAMINATION, (C-20)
OCTOBER/NOVEMBER—2023**

DAEI – FIRST YEAR EXAMINATION

ELECTRONIC 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 applications of rheostat.
2. Define the term ‘temperature coefficient of resistance’.
3. List any three specifications of capacitors.
4. Define coefficient of coupling.
5. List any three uses of MCB.
6. List any three types of baffles.
7. State three electrical properties of solid semiconductor materials.
8. Define saturation region of transistor.
9. List any three uses of storage batteries.
10. State any three standard PCB specifications.

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 toggle switch with a diagram. 8

(OR)

(b) (i) State the necessity of connectors in electronic circuits. 4

(ii) Draw the ISI symbols of SPST, SPDT, DPST, DPDP, Multi-pole multi-throw switches. 4

12. (a) Explain the construction and working of PMMC loudspeaker with a diagram. 8

(OR)

(b) Explain the working of dynamic microphone with a diagram. 8

13. (a) Explain the formation of P-type material with a diagram. 8

(OR)

(b) Explain the formation of PN junction diode with a diagram. 8

14. (a) Explain the input and output characteristics of CB configuration with a diagram. 8

(OR)

(b) Explain the working of transistor as amplifier in CE configuration. 8

15. (a) Explain the working of full wave rectifier circuit with waveforms. 8

(OR)

(b) Explain the operation of LC filter with a diagram. 8

PART—C

10×1=10

- Instructions :** (1) Answer the following question.
(2) The question carries **ten** marks.
(3) Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer.

- 16.** (a) Two inductors whose self-inductances are given as 45 mH and 65 mH respectively, are positioned next to each other on a common magnetic core so that 85% of the lines of flux from the first coil are cutting the second coil. Calculate the total mutual inductance that exists between the two coils. 5
- (b) When two coils having inductances of 3H and 12H respectively were wound uniformly onto a non-magnetic core, it was found that their mutual inductance was 1.5H. Calculate the coupling coefficient that exists between. 5

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