



C09-EC-105

3031

BOARD DIPLOMA EXAMINATION, (C-09)

OCT/NOV—2014

DECE—FIRST YEAR EXAMINATION

BASIC ELECTRONICS

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 specifications of a resistor.
2. Define peak factor and form factor for sinusoidal a.c. quantity.
3. Classify the different types of capacitor.
4. List the types of laminate used in PCBs.
5. Mention the different types of horn.
6. Distinguish between intrinsic and extrinsic semiconductors.
7. Draw the characteristics of Zener diode.
8. Define alpha () and beta () of a transistor.
9. List the different types of transformer.
10. State the different losses in d.c. machines.

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PART—B

10×5=50

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

- 11.** (a) Explain the effect of temperature on resistance of a resistor. 5
(b) Describe the working of thermistor and mention its applications. 5
- 12.** (a) Derive the expression for energy stored in a capacitor. 5
(b) Find the equivalent inductance when inductors are connected in series aiding and opposing. 5
- 13.** (a) Draw the ISI symbols of SPDT, DPST and DPDT switches. 5
(b) Explain the construction and working of general purpose electromagnetic relay. 5
- 14.** (a) Explain the working of carbon microphone with a neat sketch. 5
(b) Compare between the performance characteristics of cone-type and horn-type loudspeakers. 5
- 15.** (a) Sketch energy level diagrams for conductors, semi-conductors and insulators. 4
(b) Explain the working of *p-n* junction diode in forward bias and reverse bias modes. 6
- 16.** (a) Draw the common emitter transistor configuration and sketch the input and output characteristics of CE configuration. 5
(b) Compare the performance characteristics of transistor in CB, CE and CC configurations. 5
- 17.** (a) Explain the working of an autotransformer. 5
(b) Compare lead acid cell with nickel iron cell. 5
- 18.** (a) Explain dynamically and statically induced e.m.f. 5
(b) Explain the principle of working of d.c. motor. 5
