



C09-EC-105

**3031**

**BOARD DIPLOMA EXAMINATION, (C-09)**

**OCT/NOV—2016**

**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. Mention the applications of wire-wound resistors.
2. Define electric field intensity.
3. List any three specifications of inductors.
4. List the performance factors of a relay.
5. Classify microphones based on impedance.
6. Define peak inverse voltage and cut-in voltage of diode.
7. What are the properties of intrinsic semiconductors?
8. The leakage current and  $\beta$  of a transistor connected in common emitter configuration are 20  $\mu$ A and 100 respectively. Calculate the collector current.
9. State the applications of miniature button cells.
10. Define efficiency of a DC machine.

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1

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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) Describe the working of a rheostat and mention its applications. 5  
(b) Explain the effect of temperature on resistance. 5
- 12.** (a) List the applications of mica and electrolytic capacitors. 5  
(b) Find the equivalent capacitance when three capacitors of 5, 10, 15 microfarads are connected in (i) series and (ii) parallel. 5
- 13.** (a) Sketch the ISI symbols of SPST, DPDT, pushbutton and rotary switches. 5  
(b) Explain the working of toggle switch with a neat sketch. 5
- 14.** Explain the constructional features and principle of operation of PMMC loudspeaker.
- 15.** Describe the formation and working of Zener diode.
- 16.** Explain the working of PNP transistor.
- 17.** Derive the e.m.f. equation of transformer.
- 18.** Explain the working principle of a single-phase induction motor.

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