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C09–EC–105

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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 of a transistor connected in common emitter configuration are 20 A and 100 respectively. Calculate the collector current.

9. State the applications of miniature button cells.

10. Define efficiency of a DC machine.

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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