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C09–EC–105

3031

BOARD DIPLOMA EXAMINATION, (C–09)

APRIL/MAY—2015

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. Define resistance and list the specifications.

2. State the need for tapering in potentiometers.

3. State the factors affecting the capacitance of capacitor.

4. Sketch the symbols of DPST, DPDT and rotary switches.

5. List the specifications of microphones.

6. Distinguish between drift and diffusion currents.

7. Define , and state the relationship between them.

8. List the specifications of Zener diodes.

9. Classify transformers based on frequency of operation.

10. Mention the uses of stepper motor.

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 color coding of resistors. 5

(b) Compare the features of carbon and wire-wound resistors. 5

12. *(a)* List the applications of paper, polyester and electrolytic capacitors. 5

(b) Find the equivalent inductance when they are connected in series aiding, series opposing, parallel aiding and parallel opposing. 5

13. *(a)* Explain the working of toggle and push button switches. 5

(b) Explain the working of a general purpose relay with a neat sketch. 5

14. *(a)* Explain the working of a dynamic microphone with a neat sketch. 5

(b) Explain the working of horn-type loudspeaker with a neat sketch. 5

15. *(a)* Distinguish between intrinsic and extrinsic semiconductors. 5

(b) Describe the formation of *P-N* junction diode. 5

16. *(a)* Draw the common emitter configuration and sketch the input and output characteristics. 5

(b) Compare the performance characteristics of CB, CE and CC configurations. 5

17. *(a)* Explain the working principle of an autotransformer. 5

(b) Explain the losses in transformers. 5

18. *(a)* Explain the principle of a DC generator. 5

(b) Explain the working principle of an alternator. 5

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