C09–EC–**105**

3031

BOARD DIPLOMA EXAMINATION, (C–09)

OCT/NOV—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. List any three specifications of a resistor.

2. Define the temperature coefficient of resistance.

3. Define mutual inductance and coefficient of coupling.

4. List the characteristics of contact materials used in relays.

5. State the principle of operation of crystal headphone.

6. Distinguish between drift current and diffusion current.

7. Sketch the energy level diagrams for conductors and semiconductors.

8. Define alpha and beta factors of a transistor.

9. Define turns ratio, current ratio and voltage ratio of a transformer.

10. List the applications of an alternator.

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PART—B 10×5=50

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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)* Define electric charge and state the Coulomb's laws of electrostatics. 5

(b) State and explain Ohm's law. 5

12. Explain the color coding of capacitors.

13. *(a)* Sketch the ISI symbols of SPST, DPST, DPDT, push button and rotary switches. 5

(b) Explain the working of toggle switch with neat sketch. 5

14. Explain the working of condenser microphone.

15. Explain working of Zener diode and draw its *V-I* characteristics.

16. Explain the working of PNP transistor.

17. Distinguish between lead acid cell and nickel iron cell.

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

(b) Explain different losses in DC machines. 5

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