C09–EC–**105**

3031

BOARD DIPLOMA EXAMINATION, (C–09)
OCT/NOV—2013
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) Answer should be brief and straight to the point and shall not exceed *five* simple sentences.

1. A resistor colour code is yellow, violet, brown and gold. What is its resistance range?

2. What are thermistors and sensistors?

3. What are the factors affecting the capacitance of a capacitor?

4. State the need for connectors in electronic equipment.

5. Define directivity of a microphone.

6. Distinguish between drift and diffusion currents.

7. Draw the symbols of semiconductor diode and Zener diode and mention one application each.

8. Relate   and   factors.

9. List the types of storage batteries.

10. State e.m.f. equation of a DC generator.

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

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

12. Find the expression for the equivalent inductance, when two inductors are connected in series aiding. 10

13. Explain the performance characteristics of a relay. 10

14. *(a)* Explain the need for baffle and mention different types of baffles. 5

(b) Explain the need for a horn-type loudspeaker with reference to its construction and advantages. 5

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

(b) What is doping and list out any two each of trivalent and pentavalent impurities? 5

16. Draw the input and output characteristics of a common-base transistor in detail. 10

17. Derive the e.m.f. equation of transformer. 10

18. Explain the working principle of a single-phase induction motor. 10

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