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C09-CHST–304

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BOARD DIPLOMA EXAMINATION, (C-09)

MARCH/APRIL—2021

DCHST - THIRD SEMESTER EXAMINATION

ELECTRICAL ENGINEERING AND BASIC ELECTRONICS

Time : 3 hours] [*Total Marks* : 80

PART—A 4×5=20

Instructions : (1) Answer *any* **five** questions.

(2) Each question carries **four** marks.

(3) Answers should be brief and straight to the point and shall not exceed five simple sentences.

1. Define Ohm's law.

2. Define the term permeability.

3. Define the term electric field intensity.

4. State the working principle of DC generator.

5. Write the formula for speed of DC motor.

6. State average value.

7. State the power and power factor in an AC circuit containing pure capacitance only.

8. State the types of storage cells.

9. What are the majority and minority carriers in N-type semiconductive material?

10. State the procedure to be adopted in case of electric shock.

PART—B

15×4=60

Instructions : (1) Answer *any* **four** questions.

(2) Each question carries **fifteen** marks.

(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

11. Explain self-inductance, mutual inductance and co-efficient of coupling.

12. *(a)* State power and energy with units.

(b) Explain the speed control of DC motor using armature control method.

13. List out the types of DC motors and draw the schematic diagram of each type.

14. Explain the constructional features of three-phase wound rotor induction motor.

15. Explain star-delta starter with a neat sketch.

16. *(a)* Explain how to run a three-phase induction motor in reverse direction.

(b) Explain the constant voltage method of battery charging.

17. Explain the working of PN junction diode in forward bias and reverse bias.

18. Explain the construction and working of moving iron voltmeter.

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