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C16–M–**305**

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BOARD DIPLOMA EXAMINATION, (C–16)

OCT/NOV—2017

DME—THIRD SEMESTER EXAMINATION

BASIC ELECTRICAL ENGINEERING AND 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 *(a)* reluctance and *(b)* retentivity.

2. State Fleming's right hand rule.

3. Classify the DC generators on basis of excitation.

4. State the working of DC motor.

5. Define *(a)* frequency and *(b)* time period.

6. Draw the neat sketch of a welding transformer.

7. List applications of single phase induction motors.

8. Define *P*-type and *N*-type semiconductors with an example.

9. Classify the different types of electrical measuring instruments.

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

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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)* Explain magnetic flux and magnetic field.   5

     (b) State Faraday's laws of electro magnetic induction.   5

12. State and explain Kirchhoff's laws with examples.   10

13. Draw the schematic diagrams of each type of DC motor and also write the voltage and current equations.   10

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

     (b) Define power and power factor in a AC circuits.   5

15. A coil of 0·03 H is connected in series with a resistance of 10 and is connected across single phase 230 V, 50 Hz AC supply. Calculate *(a)* impedance, *(b)* current, *(c)* active power, *(d)* power factor and *(e)* voltage drop across inductance and reactance.   10

16. Explain the constructional features of three phase induction motor.   10

17. Explain the working of a *P-N* junction diode with forward and reverse bias.   10

18. Explain the working principle of PMMC instrument.   10

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