6246

BOARD DIPLOMA EXAMINATIONS

OCT/NOV-2019

DME – THIRD SEMESTER

BASIC ELECTRICAL ENGINEERING & ELECTRONICS

Time: 3 hours   Max. Marks: 80

PART – A   **3 X 10 = 30**

Instructions: 1. *Answer **all** questions.*
2. *Each question carries **Three** Marks.*
3. *Answer should be brief and straight to the point and should not exceed five simple sentences.*

1. State Lenz's law.

2. Define (a) Self inductance (b) Mutual inductance.

3. List any six applications of DC motor.

4. State the working principle of a DC generator.

5. Define i) Form factor ii) Peak factor.

6. List the types of three phase induction motors.

7. Define phase and phase difference.

8. Distinguish between Intrinsic and extrinsic semiconductors in any three aspects.

9. Draw the diagram of pipe-earthing system.

10. State any three effects of electric shock.

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PART – B   **5 X 10 = 50**

Instructions: 1. *Answer any **Five** questions*
2. *Each question carries **TEN** Marks.*
3. *Answer should be comprehensive and Criteria for Valuation is the content but not the length of the answer.*

11. a) Define electrical resistance and state the laws of electrical resistance.

b) Explain the faraday's laws of electromagnetic induction.

12. a) Explain Electric field and Electric field Strength.

b) Explain factors affecting the capacitance of a capacitor.

13. Explain the speed control of DC shunt motor, using

i)   Field control method   ii) Armature control method.

14. a) List the different types of losses in a DC machines.

b) Explain the working principle of a Transformer with a neat sketch.

15. Define i) Cycle   ii) Amplitude (peak Value) iii) Time Period

iv) Frequency   v) Instantaneous value of an alternating quantity.

16. A series circuit having a resistance of 12 Ω is series with a capacitance of 100µF is connected across 230V, 50 Hz supply. Calculate

(i) Reactance (ii) Impedance (iii) Current (iv) Power factor (v) Power.

17. a) Explain the operation of a LED.

b) Write any five differences between N-Type and P-Type semiconductors.

18. Draw & Explain the construction and working of Induction type 1-Ø energy meter.