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4251**BOARD DIPLOMA EXAMINATION, (C-14)****MARCH /APRIL-2019****DME - THIRD SEMESTER EXAMINATION****BASIC ELECTRICAL & ELECTRONICS ENGINEERING**

Time: 3 hours

Max. Marks: 80

PART-A**10x3=30M**

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 self inductance.
- 2) State faraday's laws of electromagnetic induction.
- 3) Define a) magnetic field strength b) permeability.
- 4) Draw the power flow diagram of a D.C genetor.
- 5) Define RMS Value of a sinusoidal AC wave.
- 6) List the main constructional parts of an alternator.
- 7) Define a) instantaneous value and
b) time period of an alternating quantity.
- 8) Draw the symbol of PNP and NPN transistors.
- 9) Draw the connection diagram of 1- ϕ energy meter with load.
- 10) State the purpose of earthing of electrical equipment and machinery.

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PART-B

5x10=50M

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) State Fleming's right hand rule 4+6
b) Derive the expression for energy stored in a magnetic field.
- 12) a) State and explain Kirchhoff's laws. 5+5
b) When a resistor of 5Ω connected across a supply of 40V, calculate the current following through the circuit and power dissipated in the circuit.
- 13) a) Explain about back e.m.f in a DC motor. 5+5
b) Draw the connection diagram of welding generator.
- 14) a) Explain the necessity of starters in a D.C machine. 5+5
b) Explain the working principle of a transformer.
- 15) Explain DOL starter of a 3 ϕ Induction motor with a neat sketch.
- 16) a) Explain the working of principle of 3- ϕ Induction motor. 7+3
b) What are the different types of 1- ϕ Induction Motors.
- 17) Explain the operation of zener diode with the help of a neat sketch.
- 18) Explain the construction and working principle of moving Iron voltmeter.

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