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4215**BOARD DIPLOMA EXAMINATION, (C-14)****MARCH /APRIL-2019****DAEIE - THIRD SEMESTER EXAMINATION****ELECTRICAL MACHINES**

Time: 3 Hours]

[Max. Marks : 80

PART-A**10x3=30**

Instructions: 1) Answer **all** the questions. Each question carries **three** marks.
2) Answers should be brief and straight to the point and shall not exceed five simple sentences.

- 1) Classify D.C generators based on their excitation.
- 2) Write the significance of Back EMF of a D.C motor.
- 3) Write the necessity of a starter in a D.C motor.
- 4) Define efficiency of a transformer.
- 5) List the losses in a single - phase transformer.
- 6) Define Slip, Slip Speed of an induction motor.
- 7) Write the torque equation of an induction motor.
- 8) Define a) Pitch factor b) Distribution factor of the armature winding.
- 9) List any three applications of synchronous motor.
- 10) List any three applications of an universal motor.

PART-B

5x10=50M

Instructions: 1) Answer any **five** questions. Each question carries **ten** marks.

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

11) Explain in brief the construction of D.C generator with a sketch and label the parts.

12) Explain the speed control of a D.C motor by armature voltage method.

13) Derive the EMF equation of the single-phase transformer.

14) Explain the working of Auto transformer.

15) Describe the principle of operation of a three phase induction motor.

16) Sketch a) D.O.L b) STAR-DELTA starters of an induction motor.

17) Explain the working principle of synchronous motor.

18) a) Explain the working principle of an alternator. 5M

b) Explain working principle of shaded pole motor. 5M

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