



C14-AEI-302

4215

**BOARD DIPLOMA EXAMINATION, (C-14)  
SEPTEMBER/OCTOBER - 2020  
DAEI—THIRD SEMESTER EXAMINATION**

ELECTRICAL MACHINES

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. List any three parts of DC machine and materials used for it.
2. List the various applications of DC series and shunt generators.
3. List the different types of losses in DC machine.
4. List the types of single-phase transformers.
5. State the condition for maximum efficiency of single-phase transformer.
6. Define slip of an induction motor.
7. List the various losses of an induction motor.
8. Define pitch factor.
9. List the applications of synchronous motor.
10. State the principle of stepper motor.

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**PART—B**

10×5=50

- 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. Explain the principle of working of DC motor.
12. Explain the speed control of DC motor by (a) armature voltage method and (b) field control method.
13. Explain the principle of working of single-phase transformer.
14. Explain the working of auto transformer.
15. Explain the principle of working of three-phase induction motor.
16. Explain slip-torque characteristics curves of an induction motor.
17. Explain the principle of working of an alternator.
18. (a) Explain the term 'synchronous impedance'.  
(b) Explain the principle of working of universal motor.

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