Total No. of Questions : 8] *[Total No. of Printed Pages : 1*

Roll No .....

EE/EX-404 (GS)

B.E. IV Semester Examination, June 2020

Grading System (GS)

Electrical Machine - I

Time : Three Hours

Maximum Marks : 70

Note: i) Answer any five questions.
ii) All questions carry equal marks.

1. A 40 kVA, 1-phase transformer has iron losses of 800 W and Cu loss of 1140 W when supplying its full load of at unity power factor. Calculate the efficiency of the transformer at unity power factor at full load and half load.

2. State the various losses that occur in a single phase transformer and explain how these can be measured by open and short circuit tests.

3. Describe the rotor construction of double cage motor. State the advantages of this motor as compared to a plain induction motor.

4. Why are the tap-changing transformer required? Explain the operation of no-load tap-changing transformer.

5. Starting from the first principle develop the equivalent circuit of a 3-phase induction motor. Draw and explain the phasor diagram.

6. Draw the torque speed characteristics of 3-phase induction machine.

   OR

   What is an open-delta system? What are the applications of this system?

7. Distinguish between distribution and power transformer.

   OR

   Write short notes on:
   i) Conservator
   ii) Cooling system of transformer

8. Write short notes on any two of the following :
   a) Linear induction motor
   b) Impact of unbalanced supply and harmonics on performance of 3-ϕ induction motor.
   c) Parallel operation of transformers.
   d) Cogging and Crawling

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