Roll No ....

EE/EX-5002-CBGS

B.E. V Semester

Examination, June 2020

Choice Based Grading System (CBGS)

Electrical Machine - II

Time : Three Hours

Maximum Marks : 70

Note: i)   Attempt any five questions.

ii)   All questions carry equal marks.

1. a)   Name the different parts of a dc machine and state the function of each part.

    b)   Derive the emf equations of a dc machine.

2. a)   What are the methods used for improving commutation in dc machine?

    b)   Explain the cross magnetization and demagnetization effects of armature reaction in a dc machine.

3. a)   Explain the operation of a three point starter with the help of a neat diagram.

    b)   What are the methods of speed control of a dc motor.

4. a)   Explain how the efficiency of a dc machine is calculated from Swinburne's test.

    b)   Explain the different types of braking of dc machines.

5. a) With the help of a neat diagram, describe the main parts of an alternator with their functions.

   b) Derive e.m.f. equation for an alternator.

6. a) Discuss the synchronous impedance method for calculating regulation of an alternator.

   b) What is armature reaction? Explain the effect of armature reaction in the terminal voltage of alternator at unity power factor load.

7. a) What is synchronizing power. Derive equation for synchronizing power of cylindrical rotor alternator.

   b) What is the necessity of parallel operation of alternators? State the condition necessary for parallel operation of alternators.

8. a) Explain the effect of damper winding in an alternators.

   b) A three-phase 6.6KV, 50 Hz, 500 KVA, star connected alternator has an effective resistance of .5 Ω/phase and synchronous reactance of 5Ω/phase. Determine the voltage regulator at full load at unity power factor.

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