

EE-8001 (CBGS)
B.E. VIII Semester Examination, June 2020
Choice Based Grading System (CBGS)
Advanced Electrical Drives
Time : Three Hours

Maximum Marks : 70

- Note:** i) Attempt any five questions.
ii) All questions carry equal marks.

1. Describe various methods of Speed control of the three phase induction motor in detail and suggest the solid state controllers for each in brief.
2. a) Discuss the effects of Power electronics devices for load and supply side and suggest the remedies of any in brief.
b) Give the two types speed control method of DC motor drive with diagram in brief.
3. a) Why Current sensing is required in electric drives? What are the common methods of current sensing?
b) Explain operation of a closed-loop speed control scheme with inner current loop.
4. Discuss the Chopper fed D.C. drives with regenerative braking. Show how it operate for four quadrant operation with the help of diagram.
5. Explain the vector control used for the synchronous motor drive in detail with Phasors and obtain expressions also.
6. Give the circuit diagram of Bipolar PMBLDC motor drive. Explain its operating principle and compare it with unipolar drive circuit of PMBLDC in detail.
7. a) Explain the various control strategies of Stepper motor.
b) Describe the operation of AC and DC servo motor with appropriate circuit diagrams and compare them.
8. Explain the following (any two).
 - a) Harmonic elimination techniques in convertors
 - b) Energy efficient electric motors
 - c) Energy conservation through solid state control
 - d) Line side pollution
