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EE - 8301

B.E. VIII Semester

Examination, June 2015

Advanced Electrical Drives  
(Elective-III)

Time : Three Hours

Maximum Marks : 70

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

#### UNIT-I

1. a) Discuss the effects of power Electronics devices on load and supply side and suggest the remedies of any in brief. 7
- b) Give the two types speed control method of DC motor drive with diagram in brief. 7

OR

Describe various methods of speed control of the three phase induction motor in detail and suggest the solid state controllers for each in brief. 14

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#### UNIT-II

2. a) Explain in brief the operation of pulse tacho - generators with circuit diagrams. 7
- b) Give types of sensors and transducers are used in closed loop schemes with brief explanation. 7

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OR

Discuss the chopper fed D.C drives with regenerative braking. Show how it operate for four Quadrant operation with the help diagrams. 14

#### UNIT-III

Explain the vector control used for the synchronous motor drive in detail with phasors and obtain expressions also. 14

OR

Describe construction, working principle of induction motor drive. Obtain the torque expression.

#### UNIT-IV

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4. Discuss the construction, operation of switched reluctance motor. Also draw position angle characteristics. explain it. 14

OR

Give the circuit diagram of Bipolar PMBLDC motor drive. Explain its operating principle and compare it with unipolar drive circuit of PMBLDC in detail. 14

#### UNIT-V

5. Write short notes on the following:- 14

- a) Stepper motor and microstepping.
- b) AC and DC servo motor

OR

- a) Harmonic elimination techniques in converters.
- b) Energy efficient electric motors.

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