MEPE–205(C)

M. E. (Electrical Engg.) (Second Semester)
EXAMINATION, June, 2010
ADVANCED ELECTRIC DRIVES
(Elective – III)
[MEPE – 205 (C)]

Time : Three Hours
Maximum Marks : 100
Minimum Pass Marks : 40

Note : Attempt any *five* questions. All questions carry equal marks.

1. Discuss the dynamic conditions of a drive system and obtain the equation of motion and explain the torque speed steady state stability of the induction motor.

2. Discuss the chopper controlled traction drives using closed loop drive system.

3. Discuss the significance of signal flow graph representation of the systems with the help of block diagram, simplifications. Also obtain the gain using Mason's formula for speed control of a d. c. motor having both speed and current loops.

4. Discuss the drive consideration for a paper mill, in detailed.

Or

Closed loop scheme for cement mills and in brief, the selection criteria of the drives for the different sections of the mills.

(a) Explain the advantages and disadvantages of A. C. and D. C. drives using thyristorised power.

(b) Describe the inverter operated induction motors for the cranes and coal mines. If possible suggest the converters used for the same.

5. Describe the switched reluctance motor in all respect, in detail and obtain the expression of torque.

6. Discuss construction, working principle, control techniques circuit diagram of PMBL DC motor.

Or

Describe the linear induction motor principle, their types and obtain the expression of tractive efforts torque ? How does it differ from the conventional rotary induction motor ?

7. Discuss the design criteria of energy efficient motors regarding standards, selection of motor and applications as a case study of three phase induction motor.

Or

(a) Explain static var controllers.

(b) Control of doubly fed motors with their field of applications.