

CBCS SCHEME

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Fourth Semester B.E. Degree Examination, June/July 2024 Electrical Drives and Control

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Explain with block diagram the elements of electrical drive. (10 Marks)
b. Explain about the classes of motor duty with a neat diagram. (10 Marks)

OR

- 2 a. Explain heating and cooling curves of a motor and obtain the expression for heating time constant. (10 Marks)
b. Explain different types of electric drives. (10 Marks)

Module-2

- 3 a. Explain in detail about plugging and regenerative electric braking in DC motors. (10 Marks)
b. Discuss in detail about characteristics of DC shunt motor. (10 Marks)

OR

- 4 a. Explain the speed-torque characteristics of three phase induction motor. (10 Marks)
b. Discuss in detail plugging type electric braking in three phase induction motor. (10 Marks)

Module-3

- 5 a. Explain with neat sketch the operation of two point starter of DC series motor. (10 Marks)
b. Explain with neat sketch the operation of four point starter of DC shunt motor. (10 Marks)

OR

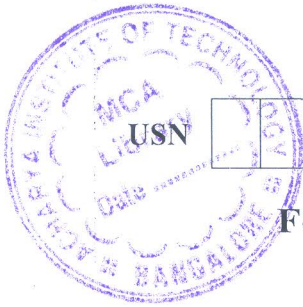
- 6 a. Explain the operation of a rotor rheostat starter for a 3 phase induction motor. (10 Marks)
b. Explain the operation of a star-delta starter for a three phase induction motor. (10 Marks)

Module-4

- 7 a. Explain the different methods of speed control employed in DC shunt motor. (10 Marks)
b. Explain with the help of a connection diagram the Ward Leonard method of speed control of DC motors. (10 Marks)

OR

- 8 a. Explain the single phase half wave converter drive speed control for DC drive with waveforms. (10 Marks)
b. Explain with neat sketch the chopper control method of speed control of DC motors. (10 Marks)



Module-5

- 9 a. Explain the different methods of speed control from stator side used in three phase induction motor. (10 Marks)
- b. Explain in detail about slip power recovery scheme conventional scherbius system method. (10 Marks)

OR

- 10 a. Explain the static Cramer method of speed control of three phase induction motor. (10 Marks)
- b. Explain voltage source inverter fed AC drive speed control of induction motor with circuit. (10 Marks)
