

(Electrical & Electronics Engg. Branch)

ELECTRICAL DRIVES

(EX-802)

Time: Three Hours

Maximum Marks : 100

Minimum Pass Marks : 35

Note Attempt one question from each Unit. All questions carry equal marks. Assume data if missing.

Unit —I

1. Explain that the steady-state stability of a drive depends on relative characteristics of the motor and load and not just on motor (or load) characteristics.

Or

2. Explain why a d. c. series motor is more suited to deal with torque over loads than other d. c. motors.

Unit —II

3. Explain the operation of a closed-loop speed control scheme with inner current control loop. What are various functions of inner current control loop ?

Or

4. Field control is employed for getting speeds higher than rated and armature voltage control is employed for getting speeds less than rated. Why ?

Unit —III

5. What are the drawbacks associated with the operation of induction motor with unbalanced rotor impedances ?

Or

6. A squirrel-cage induction motor is to fed from a non-sinusoidal supply. It is preferred to use a motor with large leakage reactance Why ?

Unit—IV

7. Why the rotor resistance control is preferred in low power crane drives ? How does the rotor resistance counter help during counter-torque braking ?

Or

8. How the speed and power factor of a wound rotor induction motor are controlled by injecting a voltage in the rotor circuit ? What should be the relation between the frequency of the injected voltage and the frequency of the rotor induced voltage ? www.rgpvonline.com

Unit—V

9. Why a cyclo converter controlled synchronous motor (or induction motor) drive is preferred over inverter controlled synchronous motor (or induction motor) drive for low speed applications ?

Or

10. Draw a block diagram of a closed loop operation of a synchronous motor drives. Explain it.