



**DEPARTMENT OF MECHANICAL ENGINEERING**

**EE6351- Electrical Drives and Control**

**Section A&B**

1. With a neat diagram sketch explain the operation of a 2 point starter, 3 point starter and 4 point starter used for starting a DC shunt motors.
2. What are the different methods of starting 3-phase induction motors?
3. Explain the operation of a rotor resistance starter used in slip ring induction motor.
4. Discuss in brief various conventional methods of speed control of DC motors.(shunt, series).
5. Draw and explain the operation of a speed control of a DC shunt motor by a single phase fully controlled converter for continuous motor current.
6. Classify the characteristics of class A, B, C, D and E chopper drives.
7. Explain the speed torque characteristics of DC shunt, series and compound motor with neat diagram.
8. Describe various methods of electrical braking of DC motors (Shunt, series).
9. Explain the speed-torque characteristics three phase induction motor.
10. Discuss briefly the various methods of electrical braking applicable to induction motors.
11. Explain the method of speed control of three phase induction motor by
  - i) Stator voltage control
  - ii) Voltage / frequency control.
12. Explain the speed of slip ring induction motor is controlled by feeding back its slip power to the mains. What are its advantages and disadvantages? (OR) Explain slip power recovery scheme of three phase induction motor.
13. Explain with neat sketch the static Kramer and Scherbius system variable speed drive system used for slip power recovery scheme.
14. What are the different classes of motor duty and explain in detail.
15. Derive the expression for a thermal model of motor for heating and cooling. Also draw the heating and cooling curve.
16. Explain in detail the various factors influencing the selection of an electrical drive for a particular application.
17. Explain the factors of influencing the selection of electric drives.



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