SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)
Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai
Accredited by NAAC-UGC with 'A++' Grade (Cycle III) &
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DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

23EEB210 – ELECTRICAL MACHINES & DRIVES

QUESTION BANK

UNIT III: SPEED CONTROL TECHNIQUES

Part A – 2 Marks

1. What are the different methods of speed control in DC motors?
2. What is the significance of armature resistance control in DC motors?
3. Explain the concept of field flux control in DC motors.
4. Define Ward Leonard method of speed control.
5. What is meant by voltage control in DC motors?
6. Explain the principle of rheostatic control in DC motors.
7. What is meant by chopper control in DC drives?
8. List the various methods of speed control of a three-phase induction motor.
9. What is the difference between V/f control and rotor resistance control?
10. Explain the principle of rotor resistance control in an induction motor.
11. What is the purpose of cascade control in induction motors?
12. Define slip power recovery in induction motors.
13. What is the effect of supply frequency on the speed of an induction motor?
14. What is the function of a starter in a DC motor?
15. List the types of starters used for DC motors.
16. What is the purpose of a star-delta starter?
17. What are the advantages of auto-transformer starters?
18. What is meant by soft starting of motors?
19. Define electrical braking in motors.
20. What are the types of electrical braking?
21. Differentiate between plugging and regenerative braking.
22. Explain the significance of dynamic braking in DC motors.
23. What are the applications of electrical braking?
24. How does V/f control help in the speed regulation of induction motors?
25. Define torque-slip characteristics in speed control of induction motors.

Part B – Detail

1. Explain in detail the different methods of speed control of DC shunt motors.
2. Describe the field flux control method and its applications in DC motors.
3. Explain armature resistance control in DC motors with necessary equations.
4. Discuss the Ward Leonard method of speed control with a neat diagram.
5. Compare the different methods of speed control in DC motors.
6. Explain the speed control techniques of three-phase induction motors.

7. Describe the principle of V/f control in AC drives.
8. Explain rotor resistance control for the speed regulation of an induction motor.
9. Discuss the concept of slip power recovery in induction motors.
10. Compare different starting methods of DC motors.
11. Explain the working of a three-point and four-point starter in DC motors.
12. Discuss the various types of starters used in induction motors.
13. Explain how an auto-transformer starter works with a neat diagram.
14. Discuss soft starting techniques and their advantages in motor control.
15. Explain the various electrical braking techniques in DC motors.
16. Compare regenerative braking and plugging in motor braking systems.
17. Discuss the different methods of dynamic braking in motors.
18. Explain the torque-speed characteristics of a three-phase induction motor.
19. Describe cascade control in induction motors with circuit diagrams.
20. Discuss the application of slip power recovery systems in induction motors.
21. Explain the need for smooth starting of motors and methods used.
22. Describe the principle and working of chopper-controlled DC motor drives.
23. Explain the effect of voltage variation on speed control in motors.
24. Discuss the applications of various speed control techniques in industries.
25. Explain the role of power electronic devices in modern speed control methods.