



# 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) &

Accredited by NBA (B.E - CSE, EEE, ECE, Mech & B.Tech.IT)



## DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

### 23EEB210 – ELECTRICAL MACHINES & DRIVES

#### QUESTION BANK

#### UNIT II: ELECTRICAL MOTORS

##### Part A – 2 Marks

1. Define the working principle of a DC motor.
2. What is the function of a commutator in a DC motor?
3. List the different types of DC motors.
4. Explain the significance of back EMF in a DC motor.
5. What is the main difference between a shunt and series DC motor?
6. Define slip in an induction motor.
7. What are the applications of three-phase induction motors?
8. What is the function of a rotor in an induction motor?
9. Differentiate between squirrel cage and wound rotor induction motors.
10. Explain the working principle of a synchronous motor.
11. What is meant by synchronous speed?
12. Define the term "universal motor."
13. List the advantages of servo motors.
14. Differentiate between AC and DC servo motors.
15. What is the function of a stepper motor?
16. Define reluctance motor.
17. Why is an induction motor called a rotating transformer?
18. What are the losses in an electrical motor?
19. Explain the need for starters in electrical motors.
20. Define torque in an electrical machine.
21. What is the significance of power factor in electrical motors?
22. Explain the term "pull-out torque" in an induction motor.
23. Differentiate between an induction motor and a synchronous motor.
24. What is meant by a hysteresis motor?
25. List the key applications of synchronous motors.

##### Part B – Detail

1. Explain the construction and working principle of a DC motor.
2. Compare and contrast the characteristics of DC shunt and series motors.
3. Discuss the significance of back EMF and derive its equation.
4. Explain the principle of operation of three-phase induction motors.
5. Describe the different methods of starting induction motors.
6. Explain the construction and working of a synchronous motor.

7. Discuss the performance characteristics of induction motors.
8. Explain the working of a universal motor with neat diagrams.
9. Describe the operation of a stepper motor and its applications.
10. Explain the construction and working of a reluctance motor.
11. Compare single-phase and three-phase induction motors.
12. Discuss the losses in an electrical motor and methods to minimize them.
13. Explain the necessity of starters in electric motors.
14. Describe the various types of torque developed in electrical motors.
15. Explain the concept of synchronous speed and its significance.
16. Discuss the different types of braking in induction motors.
17. Explain the construction and working of a servo motor.
18. Compare AC and DC servo motors.
19. Explain the effect of supply voltage variation on motor performance.
20. Discuss the applications of synchronous motors in industry.
21. Explain the concept of torque-slip characteristics in induction motors.
22. What are the differences between salient pole and non-salient pole synchronous motors?
23. Explain the concept of hysteresis loss in electrical motors.
24. Discuss the operation of single-phase induction motors.
25. Explain the function of damping winding in synchronous motors.