A Reg. No. :

1. Which of the following rule is used to determine the direction of rotation of D.C motor   CO1- R

   (a) Coloumb's law   (b) Lenz's law

   (c) Fleming's right - hand rule   (d) Fleming's left – hand rule

2. The shaft torque of a D.C motor is less than its armature torque because of   CO1- R

   (a) Copper losses   (b) Mechanical losses   (c)Back emf   (d) Rotational losses

3. Power transformers are designed to have maximum efficiency at   CO2- R

   (a) Full load   (b)50% load   (c)80% load   (d) No load

4. The open circuit test in a transformer is used to measure   CO2- R

   (a) Copper loss   (b) Winding loss   (c) Total loss   (d) Core loss

5. A 3-phase slip ring induction motor has   CO3- R

   (a) Double cage rotor   (b) Wound rotor

   (c) Short-circuited rotor   (d) Any of the above

6. The torque of an induction motor is   CO3- R

    (a) Directly proportional to slip   (b) Inversely proportional to slip

    (c) Proportional to the square of the slip   (d) None of the above

7. The damping winding in a synchronous motor is generally used   CO4- R

    (a) To provide starting torque only   (b) To reduce noise level

    (c)To reduce eddy currents   (d) To prevent hunting and provide the starting torque

8. The speed regulation of a synchronous motor is   CO4- R

    (a) 100%   (b) 50%   (c) 25%   (d) 0%

9. The power factor of a single phase induction motor is usually   CO5- R

    (a) Lagging   (b) Always leading   (c)Unity   (d) Unity to 0.8 leading

10. A universal motor is one   CO5- R

    (a) Which can run on any value of supply voltage

    (b) Which has infinitely varying speed

    (c) Which can operate on AC as well as DC voltage

    (d) Which can work as single phase or three phase motor

<div align="center">PART – B (5 x 2= 10 Marks)</div>

11. What is the function of carbon brush used in D.C generator?   CO1- R

12. Define the term voltage regulation of transformer.   CO2- R

13. What do you meant by slip of induction motor?   CO3- R

14. What is the relation between electrical degree and mechanical degree?   CO4- R

15. List the applications of single phase induction motor.   CO5- R

<div align="center">PART – C (5 x 16= 80 Marks)</div>

16. (a)   With neat diagram, explain the various parts of a D.C machine.   CO1- U   (16)

<div align="center">Or</div>

    (b)   Discuss how D.C motors are classified? Also explain their   CO1- U   (16)
           characteristics.

17. (a) Explain the principle of operation of a transformer. Also derive its EMF equation.   CO2- U   (16)

Or

(b) With necessary circuit diagrams, explain how to obtain equivalent circuit of a single phase transformer.   CO2- U   (16)

18. (a) Compare the various starting methods of three phase induction motor.   CO3- U   (16)

Or

(b) Draw and explain the torque-slip characteristics of three phase induction motor.   CO3- U   (16)

19. (a) Discuss the various starting methods of synchronous motor.   CO4- U   (16)

Or

(b) Explain the construction details and principle of operation of alternator.   CO4- U   (16)

20. (a) Describe the constructional features and principle of operation of hysteresis motor.   CO5- U   (16)

Or

(b) With a neat diagram, explain the capacitor start capacitor run single phase induction motor. Also draw the slip-torque characteristics.   CO5- U   (16)

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