Reg. No. : | | | | | | | | | | |

Question Paper Code: 54326

B.E. / B.Tech. DEGREE EXAMINATION, DEC 2020

Fourth Semester

Electronics and Communication Engineering

15UEE426- PRINCIPLE OF ELECTRICAL MACHINES

(Regulation 2015)

Duration: 1.15 hrs Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

(Answer any six of the following questions)

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

PART – B (3 x 8= 24 Marks)

(Answer any three of the following questions)

11.	With neat diagram, explain the various parts of a D.C machine.	CO1- U	(8)
12.	Explain the principle of operation of a transformer. Also derive its EMF equation.	CO2- U	(8)
13.	Compare the various starting methods of three phase induction motor.	CO3- U	(8)
14.	Discuss the various starting methods of synchronous motor.	CO4- U	(8)
15.	Describe the constructional features and principle of operation of hysteresis motor.	CO5- U	(8)