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Question Paper Code: 53323

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

Third Semester

Mechanical Engineering

15UEE323 - ELECTRICAL MACHINES

(Regulation 2015)

Duration: 1:15hrs

Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

(Answer any six of the following questions)

1. D.C. motors are widely used in CO1- R
(a) Pumping sets (b) Air compressors (c) Electric traction (d) Machine shops
2. Working Principle of Motor _____ CO1- R
(a) Fleming Right Hand Rule (b) Ohms Law
(c) Fleming Left Hand Rule (d) None of the Above
3. A transformer core is laminated to reduce CO2- R
(a) Hysteresis loss (b) Copper loss (c) Eddy current loss (d) All the above losses
4. An ideal transformer has _____. CO2- R
(a) Core loss (b) Magnetic leakage
(c) No winding resistance (d) None of the above
5. Star-delta starting of motors is not possible in case of CO3- R
(a) Single phase motors (b) Variable speed motors
(c) Low horse power motors (d) High speed motors
6. A 50 Hz, three phase supply is given to a four pole induction motor. CO3- R
The synchronous speed of the machine is _____
(a) 3000 rpm (b) 1500 rpm (c) 1000 rpm (d) 750 rpm

7. Synchronous condensers are used to CO4- R
 (a) Improve starting torque (b) Improve the power factor
 (c) Reduce hunting (d) All of the above
8. In a synchronous motor, damper windings are provided on CO4- R
 (a) Rotor shaft (b) Stator frame (c) Pole faces (d) None of the above
9. An universal motor is also called as _____ CO5- R
 (a) Induction motor (b) Synchronous motor (c) AC series motor (d) Stepper motor
10. The electric motor used in portable drill is CO5- R
 (a) Capacitor run motor (b) Universal motor
 (c) Hysteresis motor (d) Repulsion motor

PART – B (3 x 8= 24 Marks)

(Answer any three of the following questions)

11. Sketch the construction of DC Motor and explain about various parts associated with it. CO1- U (8)
12. Sketch the single phase transformer and explain about its construction and working principle CO2- U (8)
13. Explain the construction and working principle of three phase induction motor. CO3-U (8)
14. Recognize the principle of operation of a synchronous motor with a neat sketch. Also demonstrate how it can be self started. CO4- U (8)
15. Analyze briefly about any two types of single phase induction motor. CO5- U (8)