2107095

BACHELOR OF VOCATION
Robotics and Automation
Subject: Special Machines and Controllers
Subject Code: DBEE-308
Semester: Sixth
July 2021
Theory (External): 35 Marks
Time: 03 Hours

Instructions to the Students

1. This Question paper consists of two Sections. All sections are compulsory.
2. Section A comprises 10 questions of objective type in nature. All questions are compulsory. Each question carries 1 mark.
3. Section B comprises 8 essay type questions out of which students need to do any 5. Each question carries 5 marks.
4. Read the questions carefully and write the answers in the answer sheets provided.
5. Do not write anything on the question paper.
6. Wherever necessary, the diagram drawn should be neat and properly labelled

Roll Number											

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SECTION –A (SHORT/OBJECTIVE TYPE QUESTIONS)
(10x1=10 Marks)

A. Define the function of electrical machine

B. Enlist the applications of linear motor

C. Define the applications of power controller of PM brushless DC motors.

D. Discuss the function of Hybrid stepper motor

E. Describe Torque equations of PM brushless DC motors.

F. Define the function of sensor with respect to switched reluctance motors.

G. Enlist different types of power converters for SRM.

H. Describe EMF expression of PM synchronous motors.

I. Define the concept of Phasor diagram of PM synchronous motors.

J. Classify different types of linear induction motor.

SECTION –B (ESSAY TYPE QUESTIONS)
(5x5=25 Marks)

1. Explain the construction and working of stepper motor with neat diagram.
2. Explain the construction and working of switched reluctance motor with neat diagram.
3. Explain the construction and working of PMBDC motor with neat diagram along with its merits and demerits.
4. Explain the working of rotor sensing mechanism and logic controller of SRM with neat diagram.
5. Explain the characteristics of PMBDC motor with suitable example and applications.
6. Explain torque speed characteristics of permanent magnet synchronous motors with suitable example.
7. Explain the construction and working of servomotor with neat diagram along with its merits and demerits.
8. Describe the construction and principle of operation of linear induction motor.

===END OF PAPER===