

**PRAGATI ENGINEERING COLLEGE: SURAMPALEM
(AUTONOMOUS)**

M.Tech II Semester Regular/Supplementary Examinations, July – 2024

**SPECIAL MACHINES
(PE&ED)**

Time: 3 hours

Max. Marks: 60

**Answer any FIVE questions
All questions carry EQUAL marks**

5X12=60M

Q.NO.		Question	BTL	CO	Marks
1.	a.	Explain Construction features and principle of operation of STEPPER motor	K2	CO1	6M
	b.	Describe the operation of variable reluctance type stepper motor with different modes of operation.	K3	CO1	6M
2.	a.	Derive torque speed characteristics of PMSM	K2	CO2	6M
	b.	Derive the expression for Torque for a switched Reluctance motor	K3	CO2	6M
3	a.	Explain the dynamic characteristics of Stepper motor.	K2	CO1	6M
	b.	Explain closed loop control of stepper motor.	K2	CO1	6M
4	a.	Derive the torque and EMF equations of PMSM.	K3	CO2	6M
	b.	Discuss different current control schemes for Permanent magnet Synchronous Motors.	K2	CO2	6M
5.	a.	With necessary diagrams, discuss about various power controllers used for PMSM	K2	CO2	6M
	b.	Explain Square wave permanent magnet brushless motor drives	K2	CO3	6M
6.	a	Explain the types of Servo Motors.	K2	CO4	6M
	b	Explain the operating principle of an AC Tachometer with a neat schematic diagram.	K2	CO4	6M
7	a	List any two major applications of Linear Induction motor and explain their suitability for such applications.	K2	CO5	6M
	b.	Explain the types DC linear Motors.	K2	CO5	6M
8	a	Differentiate between Brushless DC Motor with conventional DC Motors	K4	CO3	6M
	b	Explain the concept of Electronic Commutation.	K2	CO3	6M