

ELECTRICAL MACHINES-I LAB

Course Code	20EE3352	Year	II	Semester(s)	I
Course Category	Professional Core	Branch	EEE	Course Type	Lab
Credits	1.5	L-T-P	0-0-3	Prerequisite	Basic Electrical and Electronics Engineering Lab
Continuous Internal Evaluation:	15	Semester End Evaluation:	35	Total Marks:	50

Course Outcomes

Upon successful completion of the course, the student will be able to

CO1	Analyze the load characteristics of D.C generators. (L4)
CO2	Obtain the performance characteristics and speed control characteristics of DC motor (L3)
CO3	Determine efficiency of D.C machine. (L3)
CO3	Obtain the characteristics and testing methods of single-phase transformers. (L3)
CO4	conduct experiments as a team / individual by using equipment available in the laboratory
CO5	make an effective report based on experiments

Contribution of Course Outcomes towards achievement of Program Outcomes & Strength of correlations (3:High, 2: Medium, 1:Low)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1		3		3				3				3	3	1
CO2	3			3				3				3	3	1
CO3	3			3				3				3	3	1
CO4	3			3									3	1
CO5					3				3				3	1
CO6										3			3	1

Syllabus

Sl No.	Contents	
1	Load characteristics of DC shunt generator.	CO1
2	Load test on DC series generator.	CO5
3	Load test on DC compound generator.	CO6
4	Brake test on DC Compound motor.	CO2
5	Speed control of DC shunt motor by field and armature control.	CO5
		CO6
6	Hopkinson's test on D.C shunt machines.	CO3
7	Field's test on D.C series machines.	CO5
8	Separation of losses in DC shunt machine.	CO6
9	Determination of equivalent circuit parameters and voltage regulation using OC and SC tests on single phase transformer.	CO4
		CO5
10	Load test on single phase transformer.	

11	Parallel operation of two single phase transformers.	CO6
12	Sumpner's test on single phase transformers.	
13	Scott connection of transformers.	
14	Separation of losses in single phase transformer	

	Learning Resources
	Text Books
	<ol style="list-style-type: none"> 1. Electrical Machinery by Dr.P. S Bimbhra, 7/e, Khanna Publishers,2018. 2. Electric Machines by I.J. Nagarath and D.P. Kothari,4/e, McGraw Hill, 2010.