

DC MACHINES & TRANSFORMERS LAB

Course Code	23EE3352	Year	II	Semester(s)	I
Course Category	Professional Core	Branch	EEE	Course Type	Lab
Credits	1.5	L-T-P	0-0-3	Prerequisite	EEW Lab
Continuous Internal Evaluation:	30	Semester End Evaluation:	70	Total Marks:	100

Course Outcomes	
Upon successful completion of the course, the student will be able to	
CO1	Analyze the load characteristics of D.C generator. (L4)
CO2	Obtain the performance characteristics and speed control characteristics of DC motor (L3)
CO3	Determine efficiency of DC machine. (L3)
CO4	Determine the performance parameters of single-phase transformer. (L3)
CO5	Conduct experiments as a team / individual by using equipment available in the laboratory
CO6	Summarize, tabulate and make an effective report on the conducted 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				3	3	1
CO5					3				3				3	1
CO6										3			3	1

Any 10 of the following experiments are to be conducted:

Syllabus		
Exp. No.	Contents	Mapped CO
1	Load test on DC shunt generator-Determination of characteristics.	CO1
2	Load test on DC compound generator-Determination of characteristics.	CO5
3	Brake test on DC shunt motor- Determination of performance curves.	CO6
4	Brake test on DC compound motor-Determination of performance curves.	CO2
5	Speed control of DC shunt motor by Field Current and Armature Voltage Control.	CO5
6	Swinburne's test - Predetermination of efficiencies as DC Generator and Motor.	CO6
7	Hopkinson's test on DC shunt Machines.	CO3
8	Fields test on DC series machines-Determination of efficiency.	CO5
9	OC & SC tests on single phase transformer.	CO6
10	Sumpner's test on single phase transformer.	CO4
11	Scott connection of transformers.	CO5
12	Parallel operation of Single-phase Transformers.	CO6

Learning Resources

Text Books

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| 1. Dr. P. S Bimbhra, Electrical Machinery, 7/e, Khanna Publishers,2018.
2. I.J. Nagarath and D.P. Kothari, Electric Machines,4/e, McGraw Hill, 2010. |
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E- Resources

https://ems-iitr.vlabs.ac.in/List%20of%20experiments.html
