



## Pr. 1 ELECTRICAL MACHINE LAB-II

Name of the Course: Diploma in Electrical Engineering			
Faculty: Mr Ruhia Hansda		semester wef-14/09/2022-21/01/2023	
Course code:	Th.4	Semester:	5 <sup>th</sup>
Total Period:	90 Periods	Examination:	3 Hrs
Lab. Periods:	6P / Week	Term Work/Sessional:	25
Tutorial:	-	End Semester Examination:	50
Maximum marks:	75		

### VISION:

To create competent & industry ready Electrical Diploma Engineers with professional and social values to meet future challenges.

### MISSION:

- To prepare diploma holders through "qualitative competency based education system" to compete with national requirement along with core values.
- To produce dynamic Electrical Engineers to serve the society and industry.
- To develop leadership qualities, communication skills, critical thinking and attitude for lifelong learning.

### PROGRAM EDUCATIONAL OBJECTIVES:

PEO1	Apply technical knowledge and skills learned in the field of Electrical Engineering to excel in Professional and/or higher education.
PEO2	To provide students an excellent academic environment and make them aware the needs of Society and Industry to become a successful Professional/Entrepreneur.
PEO3	To engage in lifelong learning, career enhancement to adopt emerging technologies

### Course outcomes:-

Co1	Operate the ac machines with the ac starter.
Co2	Determine efficiency, regulations of different machines.
Co3	Measure the power of a 3-phase Load by energy meter and wattmeter.
Co4	Understands Starting, Speed control and direction of motion of 3-phase and 1-phase motors.



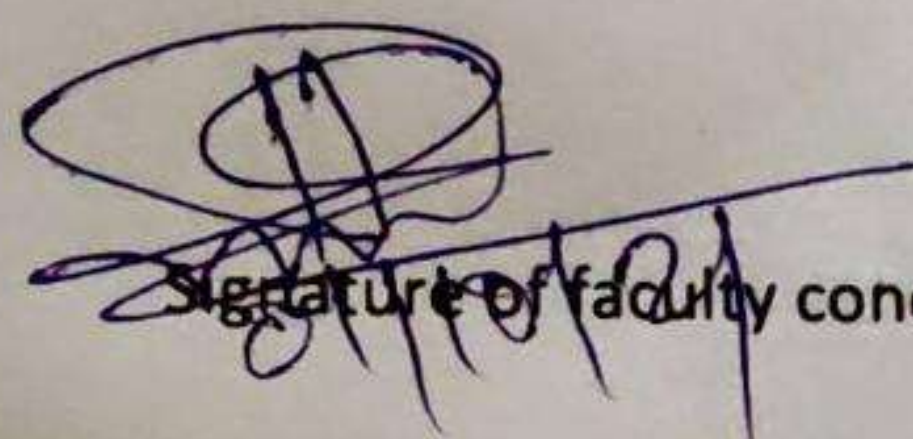


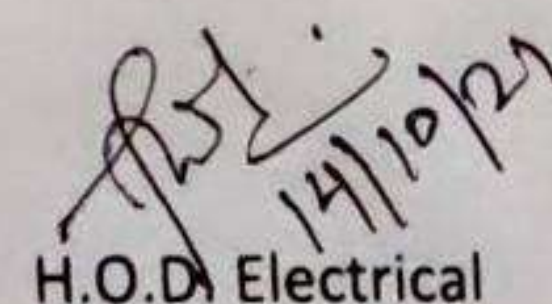
**GOVERNMENT POLYTECHNIC KORAPUT  
DEPARTMENT OF ELECTRICAL ENGINEERING**

**LESSON PLAN**

**Experiments**

Week	Day Each 3 Period	Experiments
1 <sup>st</sup>	1 <sup>st</sup>	1. Identification of different terminals of a DC machine by test lamp method and multimeter method & to measure insulation resistance by megger
	2 <sup>nd</sup>	1. Identification of different terminals of a DC machine by test lamp method and multimeter method & to measure insulation resistance by megger
2 <sup>nd</sup>	1 <sup>st</sup>	2. Dimensional and material study of various parts of a DC machine.
	2 <sup>nd</sup>	2. Dimensional and material study of various parts of a DC machine.
3 <sup>rd</sup>	1 <sup>st</sup>	3. Plot OCC of a DC shunt generator at constant speed and determine critical resistance from the graph.
	2 <sup>nd</sup>	3. Plot OCC of a DC shunt generator at constant speed and determine critical resistance from the graph.
4 <sup>th</sup>	1 <sup>st</sup>	4. Plot External Characteristics of a DC shunt generator at constant speed.
	2 <sup>nd</sup>	4. Plot External Characteristics of a DC shunt generator at constant speed.
5 <sup>th</sup>	1 <sup>st</sup>	4. Plot External Characteristics of a DC shunt generator at constant speed
	2 <sup>nd</sup>	5. Study of Three point starter, connect and run a DC shunt motor & measure the no load current.
6 <sup>th</sup>	1 <sup>st</sup>	5. Study of Three point starter, connect and run a DC shunt motor & measure the no load current.
	2 <sup>nd</sup>	6. Study of Four point starter, connect and run a DC compound motor & measure no load current.
7 <sup>th</sup>	1 <sup>st</sup>	6. Study of Four point starter, connect and run a DC compound motor & measure no load current.
	2 <sup>nd</sup>	6. Study of Four point starter, connect and run a DC compound motor & measure no load current.
8 <sup>th</sup>	1 <sup>st</sup>	7. Control the speed of a DC shunt motor by field flux control method & armature voltage control method.
	2 <sup>nd</sup>	7. Control the speed of a DC shunt motor by field flux control method & armature voltage control method.
9 <sup>th</sup>	1 <sup>st</sup>	8. Determine the armature current vs. speed characteristic of a DC motor
	2 <sup>nd</sup>	8. Determine the armature current vs. speed characteristic of a DC motor
10 <sup>th</sup>	1 <sup>st</sup>	9. Determine the efficiency of a DC machine by brake test method.
	2 <sup>nd</sup>	9. Determine the efficiency of a DC machine by brake test method.
11 <sup>th</sup>	1 <sup>st</sup>	9. Determine the efficiency of a DC machine by brake test method.
	2 <sup>nd</sup>	10. Identification of terminals, determination of voltage transformation ratio of a single phase transformer.
12 <sup>th</sup>	1 <sup>st</sup>	10. Identification of terminals, determination of voltage transformation ratio of a single phase transformer.
	2 <sup>nd</sup>	11. Perform OC Test and SC test of a single phase transformer.
13 <sup>th</sup>	1 <sup>st</sup>	11. Perform OC Test and SC test of a single phase transformer.
	2 <sup>nd</sup>	12. Determine the voltage regulation of a single phase transformer at different loads.
14 <sup>th</sup>	1 <sup>st</sup>	12. Determine the voltage regulation of a single phase transformer at different loads.
	2 <sup>nd</sup>	13. Polarity test of single phase transformer and parallel operation of two single phase transformers.
15 <sup>th</sup>	1 <sup>st</sup>	13. Polarity test of single phase transformer and parallel operation of two single phase transformers.
	2 <sup>nd</sup>	

  
Signature of faculty concerned

  
14/10/21  
H.O.D. Electrical