

DHABALESWAR INSTITUTE OF POLYTECHNIC

LESSON PLAN

Discipline: Elect. Engg	Semester: 6th	Name of the Teaching Faculty Ajay Kumar Pradhan
Subject: Testing & maintenance of E.M. Machine	No. of days per week Class Allotted: 5 days	Semester from Dt. 14.2.23 to Dt. 23.5.23 No. of Weeks: 15
Week	Class Day	Theory / Practical Topics
1st	1st day	Installation, commissioning and Testing of machine:- Inspection of arrival of machine and inspection procedure before its installation.
	2nd day	Generalised procedure of installation of Electrical machine.
	3rd day	Electric wiring for motors and switch gears.
	4th day	General requirement of Electric installation according to Indian Electricity Rules.
2nd.	1st day	Necessity of starters and relays for both DC and AC machines.
	2nd day	Testing before giving supply and testing report.
	3rd day	Installation, commissioning and Testing of Transformer:- Basic idea on despatch inspection, storage and handling of transformer.
	4th day	Civil construction feature regarding connection like Ventilation, noise level and space for movement.

DHABALESWAR INSTITUTE OF POLYTECHNIC

LESSON PLAN

Week	Class Day	Theory / Practical Topics
3 rd	5 th day	Foundation and drainage of oil.
	1 st day	Cabling and Cable box for transformer
	2 nd day	provision for fire protection
	3 rd day	provision for bushing support
	4 th day	Location of switchgear.
4 th	5 th day	steps for commissioning fitting of all accessories.
	1 st day	Filling of oil, drying out
	2 nd day	Charging the breather with fresh silica gel.
	3 rd day	Cleaning of bushing, binning of conductor and cables.
	4 th day	Earthing of tank cover, Neutral earthing.
5 th	1 st day	Finishing of protection circuits
	2 nd day	Setting of relays.
	3 rd day	Installation, commissioning & Testing of Substation:-
	4 th day	Design and planning of indoor substation.
	5 th day	General requirement of layout of indoor substation with key diagram
		Consideration of safe operation of Substation.

DHABALESWAR INSTITUTE OF POLYTECHNIC

LESSON PLAN

Week	Class Day	Theory / Practical Topics
6th	5th day	Installation of outdoor substation
	1st day	Selection of site, transport and receipt of trams former
	2nd day	Checking of insulation resistance of the winding;
	3rd day	Testing of transformer oil.
	4th day	Protection fittings, construction of mounting.
7th	5th day	Earthing arrangement and Final commissioning.
	1st day	Testing and commissioning of Substation.
	2nd day	Installation of control and relay panels.
	3rd day	Preliminary preparation
	4th day	Sequence card for erection of switch gear equipment.
8th	1st day	Location of place, Unpacking
	2nd day	Unpacking of equipments
	3rd day	Foundation of substation
	4th day	Erection and installation of relays.
	5th day	Busbar earthing connection Earthing
9th.	1st day	Connection of main cable
	2nd day	Safety precaution.
	3rd day	Installation of outdoor circuit breakers

DHABALESWAR INSTITUTE OF POLYTECHNIC

LESSON PLAN

Week	Class Day	Theory / Practical Topics
10th	4th day	Receipt and storage of outdoor circuit breakers.
	5th day	Civil works for circuit breakers
	1st day	Various steps for installation of c.b.
	2nd day	Precommissioning tests.
	3rd day	Maintenance.
11th	4th day	Preventive maintenance and planning (Daily)
	5th day	Preventive maintenance and planning (Weekly)
	1st day	Preventive maintenance and planning (Monthly)
	2nd day	Preventive maintenance and planning (Half Yearly)
	3rd day	Preventive maintenance and planning (Yearly)
12th	4th day	Advantages of preventive maintenance.
	5th day	Breakdown maintenance.
	1st day	List of tools / instruments and materials used for maintenance making or preparing maintenance schedule of D.C. machines.
	2nd day	Preparing maintenance schedule of Induction machines
	3rd day	Preparing maintenance schedule of Synchronous machines

DHABALESWAR INSTITUTE OF POLYTECHNIC

LESSON PLAN

Week	Class Day	Theory / Practical Topics
13th	4th day	maintenance schedule of transformer.
	5th day	maintenance schedule of transmission line & Distribution line
	1st day	maintenance schedule of Underground cables, Circuit breakers.
	2nd day	maintenance schedule of Switch gear and protective relay
	3rd day	maintenance schedule of Substation.
	4th day	maintenance schedule of SF-6 circuit breakers.
	5th day	maintenance of Batteries in substation.
14th	1st day	Revision.
	2nd day	Revision
	3rd day	Revision
	4th day	Revision
	5th day	Question discussion
15th	1st day	Question discussion
	2nd day	Question discussion