

GIET(POLY),JAGATPURCUTTACK

DISCIPLINE-- Electrical Engg.	SEMESTER-- 6 TH	NAME OF THE TEACHING FACULTY-- AMIYA RANJAN DAS
SUBJECT-- TESTING AND MAINTENANCE OF ELECTRICAL MACHINES	NO. OF DAYS PER WEEK CLASS ALLOTTED-- 4+1 (TUTORIAL)	SEMESTER: FROM--16.01.2024 TO--26.04.2024 NO OF WEEKS--15
WEEK	CLASS/DAY	THEORY/PRACTICAL TOPICS
1 st	1 st	1. Installation, commissioning and Testing of machine. 1.1- Inspection of arrival of machine and inspection procedure before its installation.
	2 nd	1.1- Inspection of arrival of machine and inspection procedure before its installation (contd..)
	3 rd	1.1- Inspection of arrival of machine and inspection procedure before its installation (contd..)
	4 th	1.2- Generalized procedure of installation of electrical machines.
	5 th	TUTORIAL
2 nd	1 st	1.2- Generalized procedure of installation of electrical machines (contd..)
	2 nd	1.2- Generalized procedure of installation of electrical machines (contd..)
	3 rd	1.3- Electric wiring for motors and switch gears.
	4 th	1.3- Electric wiring for motors and switch gears (contd..)
	5 th	TUTORIAL
3 rd	1 st	1.3- Electric wiring for motors and switch gears (contd..)
	2 nd	1.4- General requirement for electric installation according to Indian electricity rules.
	3 rd	1.4- General requirement for electric installation according to Indian electricity rules (contd..)
	4 th	1.4- General requirement for electric installation according to Indian electricity rules (contd..)
	5 th	TUTORIAL
4 th	1 st	1.5- Necessity of starters and relays for both DC and AC machines.
	2 nd	1.5- Necessity of starters and relays for both DC and AC machines (contd..)
	3 rd	1.6- Testing before giving supply and testing report.
	4 th	2. Installation, commissioning and Testing of Transformer. 2.1- Basic idea of dispatch, inspection, storage and handling of transformer.
	5 th	TUTORIAL
5 th	1 st	2.1- Basic idea of dispatch, inspection, storage and handling of transformer (contd..)
	2 nd	2.2- Civil construction feature regarding connection like ventilation, noise level, space for free movement.
	3 rd	2.2- Civil construction feature regarding connection like ventilation, noise level, space for free movement (contd..)
	4 th	2.2- Civil construction feature regarding connection like ventilation, noise level, space for free movement (contd..)
	5 th	TUTORIAL
6 TH	1 st	2.3- Foundation and drainage of oil.
	2 nd	2.4- Cabling and cable box for transformer.
	3 rd	2.5- Provision for fire protection.
	4 th	2.6- Provision for bushings support location of switch gear.
	5 th	TUTORIAL
	1 st	2.7- Steps for commissioning fitting of all accessories.
	2 nd	2.8- Filling of oil, drying out.

	4 th	2.10-Cleaning of bushing, fixing of conductor & cables, earthing of tank and cover, neutral earthing.
	5 th	TUTORIAL
8 TH	1 st	2.10-Cleaning of bushing, fixing of conductor & cables, earthing of tank and cover, neutral earthing (contd..)
	2 nd	2.11-Fixing of protection circuits and setting of relays.
	3 rd	3. Installation, commissioning and Testing of Substation. 3.1-Design and planning of indoor substation.
	4 th	3.2-General requirement of layout of indoor substation with key diagram.
	5 th	TUTORIAL
9 TH	1 st	3.3-Consideration of safe operation of substation.
	2 nd	3.4-Installation of outdoor substation. 3.4.1-Selection of site, transport & receipt of transformer, checking of insulation resistance of the winding, testing of transformer oil, protection fittings, construction of mounting, earthing arrangement & final commissioning.
	3 rd	3.4.1-Selection of site, transport & receipt of transformer, checking of insulation resistance of the winding, testing of transformer oil, protection fittings, construction of mounting, earthing arrangement & final commissioning (contd..)
	4 th	3.4.1-Selection of site, transport & receipt of transformer, checking of insulation resistance of the winding, testing of transformer oil, protection fittings, construction of mounting, earthing arrangement & final commissioning (contd..)
	5 th	TUTORIAL
10 TH	1 st	3.5-Testing and commissioning of substation. 3.5.1-Installation of control and relay panels.
	2 nd	3.5.2-Preliminary preparation. 3.5.3-Sequence card for erection of switch gear equipments.
	3 rd	3.5.4-Location of place. 3.5.5-Unpacking 3.5.6-Foundation.
	4 th	3.5.7-Erection. 3.5.8-Relays.
	5 th	TUTORIAL
11 TH	1 st	3.6-Bus-bare earthing connection, earthing. 3.6.1-Connection to main cable.
	2 nd	3.6.2-Safety precaution.
	3 rd	3.7-Installation of outdoor circuit breaker. 3.7.1-Receipt and storage.
	4 th	3.7.2-Civil works. 3.7.3-Various steps for installation.
	5 th	TUTORIAL
12 TH	1 st	3.7.4-Pre-commissioning tests.
	2 nd	4. Maintenance. 4.1-Fundamental of maintenance.
	3 rd	4.2-Preventive maintenance and planning. (Daily, weekly, monthly, Half-yearly & Yearly maintenance)
	4 th	4.2-Preventive maintenance and planning. (Daily, weekly, monthly, Half-yearly & Yearly maintenance) (contd..)
	5 th	TUTORIAL
	1 st	4.2-Preventive maintenance and planning. (Daily, weekly, monthly, Half-yearly & Yearly maintenance) (contd..) 4.3-Advantages of preventive maintenance.
	2 nd	4.4-Breakdown maintenance. List of tools/Instruments & materials used for maintenance.

13th		Machines, Synchronous machines, Transformer, Transmission line, Distribution lines, Underground cables, Circuit breakers, Switchgear & protective relays & Substations, SF-6 circuit breakers, Batteries in substation.
	4th	4.5- Making or preparing maintenance schedule of DC Machines, Synchronous machines, Transformer, Transmission line, Distribution lines, Underground cables, Circuit breakers, Switchgear & protective relays & Substations, SF-6 circuit breakers, Batteries in substation. (contd..)
14th	5th	TUTORIAL
	1st	4.5- Making or preparing maintenance schedule of DC Machines, Synchronous machines, Transformer, Transmission line, Distribution lines, Underground cables, Circuit breakers, Switchgear & protective relays & Substations, SF-6 circuit breakers, Batteries in substation. (contd..)
	2nd	4.5- Making or preparing maintenance schedule of DC Machines, Synchronous machines, Transformer, Transmission line, Distribution lines, Underground cables, Circuit breakers, Switchgear & protective relays & Substations, SF-6 circuit breakers, Batteries in substation. (contd..)
	3rd	4.5- Making or preparing maintenance schedule of DC Machines, Synchronous machines, Transformer, Transmission line, Distribution lines, Underground cables, Circuit breakers, Switchgear & protective relays & Substations, SF-6 circuit breakers, Batteries in substation. (contd..)
	4th	4.5- Making or preparing maintenance schedule of DC Machines, Synchronous machines, Transformer, Transmission line, Distribution lines, Underground cables, Circuit breakers, Switchgear & protective relays & Substations, SF-6 circuit breakers, Batteries in substation. (contd..)
15th	5th	TUTORIAL
	1st	4.5- Making or preparing maintenance schedule of DC Machines, Synchronous machines, Transformer, Transmission line, Distribution lines, Underground cables, Circuit breakers, Switchgear & protective relays & Substations, SF-6 circuit breakers, Batteries in substation. (contd..)
	2nd	4.5- Making or preparing maintenance schedule of DC Machines, Synchronous machines, Transformer, Transmission line, Distribution lines, Underground cables, Circuit breakers, Switchgear & protective relays & Substations, SF-6 circuit breakers, Batteries in substation. (contd..)
	3rd	4.5- Making or preparing maintenance schedule of DC Machines, Synchronous machines, Transformer, Transmission line, Distribution lines, Underground cables, Circuit breakers, Switchgear & protective relays & Substations, SF-6 circuit breakers, Batteries in substation. (contd..)
	4th	4.5- Making or preparing maintenance schedule of DC Machines, Synchronous machines, Transformer, Transmission line, Distribution lines, Underground cables, Circuit breakers, Switchgear & protective relays & Substations, SF-6 circuit breakers, Batteries in substation. (contd..)
	5th	TUTORIAL

Sign of faculty

Sign of HOD
 Head of Dept. of
 Electrical & ETC Engg.
 G. E. T. (POLY), ...

Sign of Principal