

2: ELECTRICAL TECHNOLOGY (FA, FB, FC)

Scheme of Examination

Std. XI

Paper	Title of the Paper	Theory		Practical		Term work	Project work	I.V.*	Total Marks
		Marks	Time (Hrs)	Marks	Time (Hrs)				
3	Electrical Machines	80	3	80	3	20	10	10	200

* IV = Industrial Visits ** OJT = On Job Training

Paper III: Electrical Machines (FC)

Objectives

To enable the students to

1. Understand the student to use & principle of different measuring electrical Instruments
2. Know various magnet & electromagnet.
3. Know various D.C. Motors construction, working principle & its application.
4. Know various single phase transformer construction principle and transformer equation & small transformer rewinding.
5. Know various single phase motors, construction working principle, applications.
6. Know various speed controls of single phase motors.
7. Students able to rewinding the different single phase motors
8. Students able to estimating, coasting and Billing

Theory

Sr. No.	Unit	Sub-Unit	No. of Periods
1.	Measuring instruments	Introduction, types of measuring instruments, analog and digital, ammeter, voltmeter, wattmeter, multimeter, Ohm-meter, frequency meter, clip on meter, energy meter, tachometer, megger, earth resistance tester	9
2.	Electromagnetism	Introduction, types of magnets, basic magnetic terms, electromagnet, difference between permanent and electromagnet, magnetic rules, right hand rule, cork screw rule, end rule, dynamically, statically, mutual induction.	12

3.	D.C. motor	Introduction of D.C. motor, working principle, construction, types of D.C. motors, necessity of starters, types of starters	15
4.	Single phase Transformer	Introduction, types of transformer, transformation ratio, rewinding, transformer testing	12
5.	Single phase A.C. motor	Introduction, working principles, types of single phase motor, construction, working principles, speed control and change of DOR, lubricants, testing of single phase motors, fault finding and trouble shooting, study of data sheet and up keeping of motor	15
6.	Single Phase A.C. motor winding	Introduction types of single phase motor winding, fundamental definitions, winding tools and equipments, winding materials	15
7.	Rewinding Procedure	Name plate data, inside data, method of removing burn coil and rewinding procedure, varnishing and baking methods, winding problems and developed diagram	30
8.	Estimation, costing and billing	Elements of estimation, elements of costing, billing	12
Total			120