

GOVT. POLYTECHNIC MAYURBHANJ LESSON PLAN- 2022/23 (SUMMER)

Discipline : ELECTRICAL		Semester: 6th Sem		Name of the Teaching Faculty :Debasis Patra	
Subject : SGPD		No. of Days / per week class allotted : 05		Semester From date : 14.02.2023	To Date : 23.05.2023
MONTH	Week	Day	Unit	Topics	
FEBRUARY	3rd		UNIT-1	1.INTRODUCTION TO SWITCHGEAR	
		2nd		Essential Features of switchgear	
		4th		Switchgear Equipment	
		5th		Bus-Bar Arrangement & Switchgear Accommodation	
		6th		Short Circuit & Faults in a power system.	
	4th		UNIT-2	2.FAULT CALCULATION	
		1st		Symmetrical faults on 3-phase system & Limitation of fault current.	
		2nd		Percentage Reactance & Percentage Reactance and Base KVA.	
		4th		Short – circuit KVA & Reactor control of short circuit currents.	
		5th		Location of reactors.	
		6th		Steps for symmetrical Fault calculations.	
	5th	1st		Solve numerical problems on symmetrical fault.	
		2nd			
MARCH	1ST	4th	UNIT-3	CLASS TEST-1	
				3. FUSES	
		5th		Introduction	
		6th		Desirable characteristics of fuse element.	
	2nd	1st		Fuse Element materials.	
		2nd		DOLO PURNIMA	
		4th		Types of Fuses and important terms used for fuses.	
		5th			
		6th		Low and High voltage fuses.	
	3rd	1st		Current carrying capacity of fuse element & Difference Between a Fuse and Circuit Breaker.	
		2nd		Question Discussion	
				4. CIRCUIT BREAKERS	
		4th		Definition and principle of Circuit Breaker & Arc phenomenon and principle of Arc Extinction.	
		5th		Methods of Arc Extinction.	
		6th		Definitions of Arc voltage, Re-striking voltage and Recovery voltage.	
		1st		Classification of circuit Breakers & Oil circuit Breaker.	

APRIL	4th	2nd	UNIT-4	Plain brake oil circuit breaker.
		4th		Arc control oil circuit breaker.
		5th		Low oil circuit breaker & Maintenance of oil circuit breaker.
		6th		Air-Blast circuit breaker and its classification.
	5th	1st		Sulphur Hexa-fluoride (SF6) circuit breaker & Vacuum circuit breakers.
		2nd		Switchgear component.
		4th		RAMA NAVAMI
		5th		Problems of circuit interruption & Resistance switching, Circuit Breaker Rating.
	2nd	1st	UNIT-5	Question Discussion
				5. PROTECTIVE RELAYS
		2nd		Definition of Protective Relay & Fundamental requirement of protective relay.
		4th		Basic Relay operation & Electromagnetic Attraction type
		5th		GOOD FRIDAY
		6th		Induction type relay.
	3rd	1st		Definition of following important terms- Pick-up current, Current setting, Plug setting Multiplier, Time setting Multiplier.
		2nd		Classification of functional relays- Induction type over current relay (Non-directional) & Induction type directional power relay.
		4th		Induction type directional over current relay.
		5th		MOHABISUBA SANKRANTI
		6th		Differential relay- Current differential relay-Voltage balance differential relay & Types of protection
	4th	1st		Question Discussion
		2nd		INTERNAL EXAM
				6. PROTECTION OF ELECTRICAL POWER EQUIPMENT AND LINES
		4th		Protection of alternator.
		5th		Differential protection of alternators.
		6th		EID-UL-FITAR
	5th	1st	UNIT-6	Balanced earth fault protection
		2nd		Protection systems for transformer- Buchholz relay.
		4th		Protection of Bus bar.
		5th		Protection of Transmission line.
		6th		Different pilot wire protection (Merz-price voltage Balance system).
	1st	1st		Explain protection of feeder by over current and earth fault relay.
		2nd		Question Discussion
				7. PROTECTION AGAINST OVER VOLTAGE AND LIGHTING
		4th		Voltage surge and causes of over voltage.
		5th		BUDDHA PURNIMA

	6th		Internal cause of over voltage & External cause of over voltage (lightning)
2nd	1st	UNIT-7	Mechanism of lightning discharge.
	2nd		Types of lightning strokes & Harmful effect of lightning.
	4th		Lightning arresters and Type of lightning Arresters- Rod-gap lightning arrester.
	5th		Horn-gap arrester.
	6th		Valve type arrester.
	1st		Surge Absorber
3rd	2nd		Question Discussion
	4th		CLASS TEST-2
	5th		SABITRI AMABASYA
			8. STATIC RELAY
	6th	UNIT-8	Advantage of static relay.
	1st		Instantaneous over current relay & Principle of IDMT relay.
4th	2nd		Question Discussion