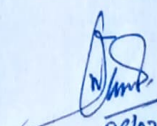
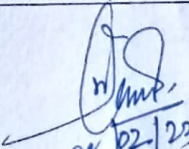


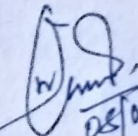
DISCIPLINE (ELECTRICAL ENGG.)	SEMETER –6th sem (2022-2023)	NAME OF THE FACULTY- Er.Abiswa Kar
SUBJECT:- SWITCH GEAR AND PROTECTIVE DEVICES	NO OF CLASS/WEEKS	SEMESTER FROM-14.02.2023 to 25.05.2023 NO OF WEEKS:15
WEEKS – 15	CLASS/DAY	Theory
14.02.2023 to 18.02.2023	1st	INTRODUCTION TO SWITCHGEAR Essential Features of switchgear. Switchgear Equipment.
	2nd	Bus-Bar Arrangement. Switchgear Accommodation. Short Circuit. Short circuit.
	3rd	Faults in a power system. FAULT CALCULATION
	4th	MAHA SHIVA RATRI
20.02.2023 to 25.02.2023	1st	Symmetrical faults on 3-phase system. Limitation of fault current. Percentage Reactance.
	2nd	Percentage Reactance and Base KVA. Short – circuit KVA. Reactor control of short circuit currents. Location of reactors.
	3rd	Steps for symmetrical Fault calculations.
	4th	Solve numerical problems on symmetrical fault.
	5th	FUSES Desirable characteristics of fuse element.
27.02.2023 to 04.03.2023	1st	Fuse Element materials. Types of Fuses and important terms used for fuses.
	2nd	Low and High voltage fuses.
	3rd	Current carrying capacity of fuse element. Difference Between a Fuse and Circuit Breaker.
	4th	CIRCUIT BREAKERS Definition and principle of Circuit Breaker.
	5 th	Arc phenomenon and principle of Arc Extinction.
06.03.2023 to 11.03.2023	1 st	Methods of Arc Extinction. Definitions of Arc voltage, Re-striking voltage and Recovery voltage.
	2nd	DOLO PURNIMA
	3rd	HOLI
	4th	Classification of circuit Breakers.
	5th	Classification of circuit Breakers.
13.03.2023 to	1st	Oil circuit Breaker and its classification


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18.03.2023	2nd	Plain brake oil circuit breaker. Arc control oil circuit breaker.
	3rd	Low oil circuit breaker.
	4th	Maintenance of oil circuit breaker. Air-Blast circuit breaker and its classification.
	5th	Sulphur Hexa-fluoride (SF6) circuit breaker.
20.03.2023 to 25.03.2023	1st	Vacuum circuit breakers.
	2nd	Switchgear component.
	3rd	Problems of circuit interruption.
	4th	Resistance switching. Circuit Breaker Rating.
	5th	PROTECTIVE RELAYS ,Definition of Protective Relay.
27.03.2023 to 01.04.2023	1st	Fundamental requirement of protective relay.
	2nd	Basic Relay operation Electromagnetic Attraction type Induction type
	3rd	Basic Relay operation Electromagnetic Attraction type Induction type
	4th	RAMA NAVAMI
	5 th	UTKAL DIVAS
03.04.2023 to 08.04.2023	1st	Definition of following important terms
	2nd	Pick-up current. Current setting. Plug setting Multiplier. Time setting Multiplier.
	3rd	Classification of functional relays
	4th	Induction type over current relay (Non-directional)
	5th	Induction type directional power relay.
10.04.2023 to 15.04.2023	1st	Induction type directional over current relay.
	2nd	Differential relay Current differential relay Voltage balance differential relay.
	3rd	Types of protection
	4th	PROTECTION OF ELECTRICAL POWER EQUIPMENT AND LINES
	5th	Protection of alternator. Differential protection of alternators. Balanced earth fault protection.
17.04.2023 to 22.04.2023	1st	Protection of alternator. Differential protection of alternators. Balanced earth fault protection
	2nd	Protection systems for transformer.
	3rd	Buchholz relay.
	4th	Buchholz relay.
	5th	ID-UI-FITRE
24.04.2023 to 29.04.2023	1st	Protection of Bus bar.
	2nd	Protection of Transmission line.
	3rd	Different pilot wire protection (Merz-price voltage Balance system)


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	4th	Explain protection of feeder by over current and earth fault relay.
	5th	PROTECTION AGAINST OVER VOLTAGE AND LIGHTING
01.05.2023 to 06.05.2023	1st	Voltage surge and causes of over voltage.
	2nd	Internal cause of over voltage.
	3rd	External cause of over voltage (lighting)
	4th	Mechanism of lightning discharge.
	5th	Types of lightning strokes.
08.05.2023 to 13.05.2023	1st	Harmful effect of lightning.
	2nd	Lightning arresters and Type of lightning Arresters.
	3rd	Rod-gap lightning arrester.
	4 th	Rod-gap lightning arrester.
	5 th	Horn-gap arrester.
15.05.2023 to 20.05.2023	1st	Horn-gap arrester.
	2nd	Valve type arrester.
	3 rd	Surge Absorber
	4 th	Surge Absorber
	5 th	STATIC RELAY:
22.05.2023 to 25.05.2023	1 st	Advantage of static relay.
	2 nd	Instantaneous over current relay.
	3 rd	Instantaneous over current relay.
	4 th	Principle of IDMT relay.


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