Discipline : Electrical	Semester 5th	Name of the teaching faculty : Er. Rabindra Patra
Subject : Energy conversion -II	No of days weeks/classes allotted : 5	Semester from 15.9.2022 to 22.12.2022
		No of weeks : 15
Weeks	Class day	theory
12.9.2022 to 17.9.2022	1st	
	2nd	
	3rd	ALTERNATOR: Types of alternator and their constructional features
	4th	Basic working principle of alternator and the relation between speed and frequency
	5th	Biswakarma puja
19.9.2022 to 24.9.2022	1st	Terminology in armature winding and expressions for winding factors (Pitch factor, Distribution factor).
	2nd	Explain harmonics, its causes and impact on winding factor.
	3rd	E.M.F equation of alternator. (Solve numerical problems).
	4th	E.M.F equation of alternator. (Solve numerical problems).
	5th	Explain Armature reaction and its effect on emf at different power factor of load.
26.9.2022 to 1.10.2022	1st	The vector diagram of loaded alternator. (Solve numerical problems)
	2nd	Testing of alternator (Solve numerical problems) Open circuit test.
	3rd	Testing of alternator (Solve numerical problems) Short circuit test
	4th	Determination of voltage regulation of Alternator by direct loading and synchronous impedance method. (
	5th	Parallel operation of alternator using synchro-scope and dark & bright lamp method.
3.10.2022 to 8.10.2022	1st	Durga puja holiday
	2nd	
	3rd	
	4th	
	5th	
10.10.2022 to 15.10.2022	1st	Explain distribution of load by parallel connected alternators.
	2nd	SYNCHRONOUS MOTOR: Constructional feature of Synchronous Motor
	3rd	Principles of operation, concept of load angle
	4th	Derive torque, power developed
	5th	Effect of varying load with constant excitation.
17.10.2022 To 22.10.2022	1st	Effect of varying excitation with constant load
	2nd	Power angle characteristics of cylindrical rotor motor
	3rd	Explain effect of excitation on Armature current and power factor
	4th	Hunting in Synchronous Motor

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	5th	Hunting in Synchronous Motor
24.10.2022 To 29.10.2022	1st	Diwali
	2nd	Function of Damper Bars in synchronous motor and generator.
	3rd	Describe method of starting of Synchronous motor
	4th	State application of synchronous motor.
	5th	THREE PHASE INDUCTION MOTOR: Production of rotating magnetic field , Constructional feature of Squirrel cage and Slip ring induction motors
31.10.2022 To 5.11.2022	1st	Working principles of operation of 3-phase Induction motor.
	2nd	Define slip speed, slip and establish the relation of slip with rotor quantities
	3rd	Derive expression for torque during starting and running conditions and derive conditions for maximum torque. (solve numerical problems)
	4th	Torque-slip characteristics
	5th	Derive relation between full load torque and starting torque etc. (solve numerical problems)
7.11.2022 to 12.11.2022	1st	Last Monday of kartika
	2nd	Establish the relations between Rotor Copper loss, Rotor output and Gross Torque and relationship of slip with rotor copper loss. (solve numerical problems)
	3rd	Methods of starting and different types of starters used for three phase Induction motor
	4th	Methods of starting and different types of starters used for three phase Induction motor
	5th	Explain speed control by Voltage Control, Rotor resistance control, Pole changing, frequency control methods.
14.11.2022 to 19.11.2022	1st	Explain speed control by Voltage Control, Rotor resistance control, Pole changing, frequency control methods.
	2nd	Prathamastami
	3rd	Plugging as applicable to three phase induction motor
	4th	Describe different types of motor enclosures.
	5th	Explain principle of Induction Generator and state its applications
21.11.2022 to 26.11.2022	1st	SINGLE PHASE INDUCTION MOTOR: Explain Ferrari's principle.
	2nd	Explain double revolving field theory and Cross-field theory to analyze starting torque of 1-phase induction motor
	3rd	Explain double revolving field theory and Cross-field theory to analyze starting torque of 1-phase induction motor
	4th	. Explain Working principle, Torque speed characteristics, performance characteristics and application of following single phase motors.

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	5th	Split phase motor. Capacitor Start motor
28.11.2022 To 3.12.2022	1st	Capacitor start, capacitor run motor
	2nd	Permanent capacitor type motor. Shaded pole motor
	3rd	Explain the method to change the direction of rotation of above motors
	4th	COMMUTATOR MOTORS: Construction, working principle, running characteristic and application of single phase series motor.
	5th	Construction, working principle and application of Universal motors
5.12.2022 To 10.12.2022	1st	Construction, working principle and application of Universal motors
	2nd	Working principle of Repulsion start Motor, Repulsion start Induction run motor, Repulsion Induction motor.
	3rd	Last Thursday of margasira
	4th	SPECIAL ELECTRICAL MACHINE: Principle of Stepper motor.
	5th	Principle of variable reluctant stepper motor.
12.12.2022 to 17.12.2022	1st	Principle of Permanent magnet stepper motor.
	2nd	Principle of hybrid stepper motor.
	3rd	Applications of Stepper motor.
	4th	. THREE PHASE TRANSFORMERS: Explain Grouping of winding, Advantages.
	5th	Explain parallel operation of the three phase transformers.
19.12.2022 to 24.12.2022	1st	Explain tap changer (On/Off load tap changing)
	2nd	Maintenance Schedule of Power Transformers.
	3rd	Maintenance Schedule of Power Transformers.
	4th	Closing of attendance
	5th	

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