UTKAL INSTITUTE OF ENGINEERING & TECHNOLOGY

DISCIPLINE: ETC	SEMESTER: 4TH Sem	NAME OF THE TEACHING FACULTY: Er KALAKAR MOHANTY		
SUBJECT: ELECTRICAL MACHINE	No of Days/Per week class allotted: 4 Class P/W**(60)**	Semester From Date:16/01/2024 To Date:26/04/2024 No. Of Weeks: **15**		
WEEK	**CLASS DAY**	**THEORY TOPICS(PART-1 ELECTRICAL MATERIAL)**	**REMARKS**	
1st	1st	Properties & uses of different conducting material.	Date	Dean/Principal
	2nd	1.2 Properties & use of various insulating materials used electrical engineering.		
	3rd	1.3 Various magnetic materials & their uses.		
	4th	2.1 Construction, Principle & application of DC Generator		
2nd	1st	2.2 Classify DC generator including voltage equation.		
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	3rd	2.4 Parallel operation of DC generators.		
	4th	2.1 Construction, Principle & application of DC Generator		
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	2nd	2.1 Construction, Principle & application of DC Generator		
	3rd	3.1 Principle of working of a DC motor.		
	4th	3.2 Concept of development of torque & back EMF in DC motor including simple problems.		
4th	1st	3.3 Derive equation relating to back EMF, Current, Speed and Torque equation		
	2nd	3.4 Classify DC motors & explain characteristics, application.		
	3rd	3.5 Three point & four point stator/static of DC motor by solid State converter.		
	4th	3.6 Speed of DC motor by field control and armature control method.		
5th	1st	3.7 Power stages of DC motor & derive Efficiency of a DC motor.		
	2nd	3.2 Concept of development of torque & back EMF in DC motor including simple problems.		

	3rd	3.3 Derive equation relating to back EMF, Current, Speed and Torque equation		
	4th	3.4 Classify DC motors & explain characteristics, application.		
6th	1st	4.1 Mathematical representation of phasors, significant of operator "J"		
	2nd	4.2 Addition, Subtraction, Multiplication and Division of phasor quantities		
	3rd	4.3 AC series circuits containing resistance, capacitances, Conception of active, Reactive and apparent power and Q-factor of series circuits & solve related problems		
	4th	4.4 Find the relation of AC Parallel circuits containing Resistances, Inductance and Capacitances Q-factor of parallel circuits		
7th	1st	4.1 Mathematical representation of phasors, significant of operator "J"		
	2nd	4.2 Addition, Subtraction, Multiplication and Division of phasor quantities.		
	3rd	4.3 AC series circuits containing resistance, capacitances, Conception of active, Reactive and apparent power and Q-factor of series circuits & solve related problems.		
	4th	4.4 Find the relation of AC Parallel circuits containing Resistances, Inductance and Capacitances Q-factor of parallel circuits.		
8th	1st	Ideal transformer.		
	2nd	5.2 Construction & working principle of transformer		
	3rd	5.3 Derive of EMF equation of transformer, voltage transformation ratio		
	4th	5.4 Discuss Flux, Current, EMF components of transformer and their phasor diagram under no load Condition.		
9th	1st	5.5 Phasor representation of transformer flux, current EMF primary and secondary Voltages under loadedcondition		
	2nd	Problems only on finding moment of resistance of T-beam section when N.A. lies within or up to the bottom of flange shall be asked in written examination		
	3rd	5.6 Types of losses in Single Phase (1-ø) Transformer.		
	4th	**Doubt Clear Class**		

10th	1st	5.7 Open circuit & short-circuit test (simple problems)			
	2nd	5.8 Parallel operation of Transformer.			
	3rd	6.1 Construction feature, types of three-phase induction motor			
	4th	6.2 Principle of development of rotating magnetic field in the stator.			
11th	1st	6.3 Establish relationship between synchronous speed, actual speed and slip ofinduction motor			
	2nd	6.4 Establish relation between torque, rotor current and power facto			
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	4th	6.1 Construction feature, types of three-phase induction motor			
12th	1st	6.3 Establish relationship between synchronous speed, actual speed and slip ofinduction motor			
	2nd	7.1 Construction features and principle of operation of capacitor type and shaded pole type of single-phase induction motor			
	3rd	7.2 Explain construction & operation of AC series motor.			
	4th	7.3 Concept of alternator & its application.			
13th	1st	7.1 Construction features and principle of operation of capacitor type and shaded pole type of single-phase induction motor			
	2nd	7.2 Explain construction & operation of AC series motor.			
	3rd	7.3 Concept of alternator & its application.			
	4th	7.3 Concept of alternator & its application.			
14th	1st	1.2 Networks			
	2nd	7.3 Concept of alternator & its application.			
	3rd	**Doubt Clear Class**			
	4th	ASSIGNMENT			
15th	1st	SAMPLE PAPER QUESTION DISCUSSION			
	2nd	ASSIGNMENT			
	3rd	**Doubt Clear Class**			
	4th	SAMPLE PAPER QUESTION DISCUSSION			

Jyotiprakash Swain   Chittaranjan Parida

HOD   **DEAN**   **PRINCIPAL**