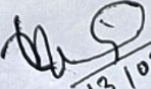


Discipline : ETC	Semester:- 4 <sup>th</sup>	Name of the Teaching Faculty: GANESH PRADHAN
Subject:- ELECTRICAL MACHINE	No of Days/per Week Class Allotted :-  04	Semester From:- 14.02.2023 To:- 23.05.2023
Week	Class Day	Theory
1 <sup>st</sup>	1 <sup>st</sup>	Properties of different conducting material.
	2 <sup>nd</sup>	uses of different conducting material
	3 <sup>rd</sup>	Properties of various insulating materials used electrical engineering
	4 <sup>th</sup>	uses of various insulating materials used electrical engineering
2 <sup>nd</sup>	1 <sup>st</sup>	Various magnetic materials
	2 <sup>nd</sup>	Uses of Various magnetic materials
	3 <sup>rd</sup>	Construction, of DC Generator.
	4 <sup>th</sup>	Principle & application of DC Generator
3 <sup>rd</sup>	1 <sup>st</sup>	Classify DC generator including
	2 <sup>nd</sup>	voltage equation.of dc generator
	3 <sup>rd</sup>	Derive EMF equation.
	4 <sup>th</sup>	simple problems on dc generator
4 <sup>th</sup>	1 <sup>st</sup>	Parallel operation of DC generators.
	2 <sup>nd</sup>	Conditions for Parallel operation of DC generators
	3 <sup>rd</sup>	Principle of working of a DC motor
	4 <sup>th</sup>	Construction of a DC motor
5 <sup>th</sup>	1 <sup>st</sup>	Concept of development of torque
	2 <sup>nd</sup>	back EMF in DC motor including simple problems
	3 <sup>rd</sup>	Derive equation relating to back EMF, Current, Speed and Torque equation
	4 <sup>th</sup>	Classify DC motors
6 <sup>th</sup>	1 <sup>st</sup>	explain characteristics of dc motor
	2 <sup>nd</sup>	application of DC motors
	3 <sup>rd</sup>	Three point & four point stator/static of DC motor by solid State converter.
	4 <sup>th</sup>	Speed control of DC motor by field control method
7 <sup>th</sup>	1 <sup>st</sup>	Speed control of DC motor by armature control method
	2 <sup>nd</sup>	Power stages of DC motor & derive Efficiency of a DC motor.
	3 <sup>rd</sup>	Mathematical representation of phasors, significant of operator "j"
	4 <sup>th</sup>	Addition, Subtraction, Multiplication and Division of phasor quantities
8 <sup>th</sup>	1 <sup>st</sup>	AC series circuits containing resistance, capacitances, Conceptionof active ,Reactive and apparent power and Q-factor of series circuits & solverelated problems
	2 <sup>nd</sup>	Find the relation of AC Parallel circuits containing Resistances, Inductance and Capacitances Q-factor of parallel circuits
	3 <sup>rd</sup>	. Construction & working principle of transformer



	4 <sup>th</sup>	Derive of EMF equation of transformer, voltage transformation ratio
9 <sup>th</sup>	1 <sup>st</sup>	Discuss Flux, Current, EMF components of transformer and their phasor diagram under no load Condition.
	2 <sup>nd</sup>	Phasor representation of transformer flux, current EMF primary and secondary Voltages under loaded condition
	3 <sup>rd</sup>	Types of losses in Single Phase (1- $\phi$ ) Transformer
	4 <sup>th</sup>	Open circuit & short-circuit test (simple problems)
10 <sup>th</sup>	1 <sup>st</sup>	Parallel operation of Transformer
	2 <sup>nd</sup>	Auto Transformer
	3 <sup>rd</sup>	Construction feature, types of three-phase induction motor.
	4 <sup>th</sup>	Principle of development of rotating magnetic field in the stator.
11 <sup>th</sup>	1 <sup>st</sup>	Establish relationship between synchronous speed, actual speed and slip of induction motor.
	2 <sup>nd</sup>	Slip of induction motor
	3 <sup>rd</sup>	Establish relation between torque, rotor current and power factor.
	4 <sup>th</sup>	Methods of starting of I.M.
12 <sup>th</sup>	1 <sup>st</sup>	Explain starting of an induction motor by using DOL and Star-Delta stator.
	2 <sup>nd</sup>	State industrial use of induction motor
	3 <sup>rd</sup>	Principle of capacitor type induction motor
	4 <sup>th</sup>	Construction features of operation of capacitor type induction motor
13 <sup>th</sup>	1 <sup>st</sup>	Construction features of shaded pole type of single-phase induction motor
	2 <sup>nd</sup>	Principle of shaded pole type of single-phase induction motor
	3 <sup>rd</sup>	Explain construction of AC series motor
	4 <sup>th</sup>	Explain operation of AC series motor Applications of AC series motor
14 <sup>th</sup>	1 <sup>st</sup>	
	2 <sup>nd</sup>	Concept of alternator
	3 <sup>rd</sup>	Application of alternator
	4 <sup>th</sup>	<b>PREVIOUS SEMESTER QUESTION DISCUSSION</b>
15 <sup>th</sup>	1 <sup>st</sup>	DISCUSSION OF ASSIGNMENT QUESTION
	2 <sup>nd</sup>	CLASS TEST-II
	3 <sup>rd</sup>	<b>OMR TEST</b>
	4 <sup>th</sup>	

G. Prachan  
Teaching Faculty

  
13/02/23  
HOD,ETC