Vedang Institute of Technology, 2nd Shift

Khurda

Department of Electrical & Electronics Engineering

Lesson Plan for Even Semester

Course: Diploma in Engineering

Teachers Name: Monalisa Dash

Semester: 4th

Subject : **Electrical Machine**

Session Duration: 2020-21 Classes From: 19/04/2021 to 13/08/2021

Date	Module	Topics To Be Covered
1st	1st	Discuss properties & uses of different conducting material.
	2nd	Discuss properties & use of various insulating materials used electrical engineering.
	3rd	Explain various magnetic materials & their uses.
	4th	Explain construction of DC Generator
2nd	1st	Principle. & application of DC Generator
	2nd	Principle. & application of DC Generator
	3rd	Classify DC generator including voltage equation.
	4th	Derive EMF equation & simple problems.
3rd	1st	Derive EMF equation & simple problems.
	2nd	Solve Problems.
	3rd	
	4th	Define parallel operation of DC generators
4th	1st	Explain Principle of working of a DC motor.
	2nd	Explain Principle of working of a DC motor.
	3rd	PROBLEM
	4th	
5th	1st	Explain concept of development of torque & back EMF in DC motor including simple problems.
	2nd	DC motor simple problems.
	3rd	DC motor simple problems
	4th	Derive equation relating to back EMF, Current, Speed and Torque equation

6th	1st	Classify DC motors & explain characteristics, application.
	2nd	State & explain three point & four point stator/static of DC motor by solid State converter
	3rd	State & explain three point & four point stator/static of DC motor by solid State converter
	4th	State & explain three point & four point stator/static of DC motor by solid State converter
7th	1st	Explain Speed of DC motor by field control method.
	2nd	Explain Speed of DC motor by armature control method.
	3rd	State Mathematical representation of phasors, significant of operator "J"
	4th	Discuss Addition, Subtraction, Multiplication and Division of phasor quantities.
8th	1st	Explain AC series circuits containing resistance, capacitances. Conception of active, reactive and apparent power and Q-factor of series circuits & solve related problems.
	2nd	PROBLEM SOLVING
	3rd	
	4th	Find the relation of AC Parallel circuits containing Resistances. Inductance and Capacitances Q-factor of parallel circuits.
9th	1st	PROBLEM SOLVING
	2nd	
	3rd	Star and Delta circuit.
	4th	Line and Phase relationship
10th	1st	Power equation with numerical problems
	2nd	State construction & working principle of transformer & define connection of Ideal transformer
	3rd	Derive of EMF equation of transformer, voltage transformation ratio.
	4th	
11th	1st	Discuss Flux, Current, EMF components of transformer and their phasor diagram under no load condition.
	2nd	
	3rd	Discuss Phasor representation of transformer flux, current EMF primary and secondary voltages under loaded condition.
	4th	Explain types of losses in Single Phase (1-ø) Transformer.
12th	1st	PROBLEM SOLVING
	2nd	Explain open circuit & short-circuit test (simple problems)
	3rd	Explain construction feature, types of three-phase induction motor.

	4th	State principle of development of rotating magnetic field in the stator.
13th	1st	
	2nd	Establish relationship between synchronous speed, actual speed and slip of induction motor.
	3rd	
	4th	Establish relation between torque, rotor current and power factor.
14th	1st	Explain starting of an induction motor by using DOL and Star-Delta stator. State industrial use of induction motor.
	2nd	
	3rd	Explain construction features of shaded pole type of single-phase induction motor.
	4th	Explain construction features of capacitor type of single-phase induction motor.
15th	1st	
	2nd	Explain principle of operation of capacitor type of single-phase induction motor.
	3rd	
	4th	Explain principle of operation of shaded pole type of single-phase induction motor.
16th	1st	
	2nd	Explain construction & operation of AC series motor.
	3rd	
	4th	Concept of alternator & its application.
17th	1st	Problem Solving
	2nd	
	3rd	Previous Year Question Paper Solving
	4th	

Faculty Signature

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