BHADRAK ENGINEERING SCHOOL & TECHNOLOGY(BEST),ASURALI,BHADRAK

ELECTRICAL MACHINE (Th- 01)

CHAPTER-WISE DISTRIBUTION OF PERIODS

Sl. No.	Name of the Chapter	Periods as per Syllabus	Required period	Expected Marks
01	ELECTRICAL MATERIAL	04	04	10
02	DC GENERATOR	10	08	20
03	DC MOTOR	10	10	20
04	AC CIRCUITS	10	10	20
05	TRANSFORMER	08	10	10
06	INDUCTION MOTOR	10	09	10
07	SINGLE PHASE INDUCTION MOTOR	08	08	10
	TOTAL	60	59	100

Sign of Lect. **Sign of HOD.** **Sign of AIC** **Sign of Vice Principal**

LESSON PLAN

Discipline: ET& C Engg	Semester Fourth (4th)	Name of the Faculty: Er K.M. Jena
Subject- Electrical Machine	No of days /week class allotted: Six (6)	Semester From Date: 14.02.2023 to Date:23.05.2023 No of weeks:15
Week No.	**Class day**	**Theory Topics**
1st	1st	Introduction to Electrical Machine
	2nd	**Chapter-1(Electrical material)** Properties & uses of different conducting material
	3rd	Properties of various insulating materials used electrical engineering.
	4th	Uses of various insulating materials used electrical engineering.
	5th	various magnetic materials & their uses.
	6th	***Possible Question Answer Discussion***
2nd	1st	**Chapter-2 (DC Generator)** Construction of DC Generator.
	2nd	Principle of DC Generator Application of DC Generator
	3rd	Classify DC Generator
	4th	Voltage Equation of DC Generator
	5th	Derive EMF Equation
	6th	Simple Problem
3rd	1st	Define Parallel operation Of DC Generator
	2nd	Cont.
	3rd	Cont.
	4th	***Possible Question Answer Discussion***
	5th	**Chapter-3(DC Motor)** Principle of working of DC Motor
	6th	Concept of Development of Torque & Back EMF in DC Motor
4th	1st	**MT-01**
	2nd	Derive equation relating to back EMF, current,
	3rd	Derive equation relating to speed & Torque equation
	4th	Classify DC motors & Explain characteristics, application.
	5th	Three-point stator & Four-point Stator/
	6th	static of DC Motors by solid state converter
5th	1st	Speed of DC motor by field control method
	2nd	Speed of DC motor by Armature control method
	3rd	Power stage of DC motor & derive efficiency of a dc motor.
	4th	***Possible Question Answer Discussion***
	5th	**Chapter-4 (AC Circuits)**

		Mathematical representation of phasors, significant of operator "J"
	6th	Addition, Subtraction, Multiplication and Division of phasor quantities.
6th	1st	AC series circuits containing resistance, capacitances
	2nd	Conception of Active, Reactive & Apparent power
	3rd	Q-Factor of series ckt
	4th	Solve related problems
	5th	Find the relation of AC parallel circuit Containing Resistances & Inductance
	6th	Find the relation of AC parallel circuit Containing capacitances
7th	1st	Q-factor of parallel circuits.
	2nd	Problem solving
	3rd	***Possible Question Answer Discussion***
	4th	**MT-02**
	5th	**Chapter-5(Transformer)** Ideal transformer.
	6th	construction of transformer
8th	1st	working principle of transformer
	2nd	Derive of EMF equation of transformer, voltage transformation ratio.
	3rd	Discuss Flux, Current, EMF components of transformer and their phasor diagram under no load condition.
	4th	Phasor representation of transformer flux, current EMF
	5th	Primary and secondary voltages under loaded condition.
	6th	Types of losses in Single Phase (1-ø) Transformer.
9th	1st	Explain open circuit & short-circuit test (simple problems)
	2nd	Explain Parallel operation of Transformer.
	3rd	Auto Transformer
	4th	***Possible Question Answer Discussion***
	5th	**Chapter-6(Induction motor)** Construction feature of three-phase induction motor.
	6th	Construction types of three-phase induction motor.
10th	1st	**MT-03**
	2nd	Principle of development of rotating magnetic field in the stator.
	3rd	Establish relationship between synchronous speed, actual speed and slip of induction motor.
	4th	continue
	5th	Establish relation between torque, rotor current and power factor.
	6th	Cont.
11th	1st	Explain starting of an induction motor by using DOL Starter

	2nd	Explain starting of an induction motor by using Star-Delta stator.
	3rd	State industrial use of induction motor
	4th	***Possible Question Answer Discussion***
	5th	**Chapter-7 (Single phase induction motor)** Construction features of capacitor type of single-phase induction motor.
	6th	Cont.
12th	1st	Principle of operation of capacitor type of single-phase induction motor
	2nd	Cont.
	3rd	Explain construction features shaded pole type of single-phase induction motor.
	4th	Cont.
	5th	Explain principle shaded pole type of single-phase induction motor.
	6th	Explain construction of AC series motor.
13th	1st	Explain operation of AC series motor.
	2nd	Concept of alternator
	3rd	& its application
	4th	***Possible Question Answer Discussion***
	5th	MT-04
	6th	Previous year question answer discussion
14th	1st	Previous year question answer discussion
	2nd	Previous year question answer discussion
	3rd	Previous year question answer discussion
	4th	Revision
	5th	Revision
	6th	Revision
15th	1st	Revision
	2nd	Revision
	3rd	Revision
	4th	Revision
	5th	Revision
	6th	Revision

Coverage of Chapters up to the internal assessment (4th week of April 2023)**: 1, 2, 3 &4.**