GANDHISCHOOLOFENGINEERING

BHABANDHA,BERHAMPUR

BRANCH:-ELECTRONICS &TELECOMMUNICATIONENGINEERING

SEMESTER:-4TH

SUBJECT:-ELECTRICAL MACHINE

NameoftheFaculty-ER AMARESH CHOUDHURY

	Topic to be taken				Actual topic taken			
Sl. No	**Topic/Module**	**No.ofperiod**	**Detailsofthetopics**	**Date**	**TopicNo.**	**TopicName**	**Date**	**Remarks**
1	ELECTRICAL MATERIAL	03	Properties & uses of different conducting material. 1.2 Properties & use of various insulating materials used electrical engineering. 1.3 Various magnetic materials & their uses.	13/02/2023 To 15/02/2023	1.1 1.2 1.3	Properties & uses of different conducting material. Properties & use of various insulating materials used electrical engineering. Various magnetic materials & their uses.	13/02/2023 14/02/2023 15/02/2023	
2	DC GENERATOR	07	2.1 Construction, Principle & application of DC Generator. 2.2 Classify DC generator including voltage equation. 2.3 Derive EMF equation & simple problems. 2.4 Parallel operation of DC generators.	16/02/2023 TO 28/02/2023	2.1 2.2 2.3	Construction, Principle & application of DC Generator. Classify DC generator including voltage equation. Derive EMF equation & simple problems.	16/02/2023 & 20/02/2023 21/02/2023 & 22/02/2023 23/02/2023 & 27/02/2023	

					2.4	Parallel operation of DC generators.	28/02/2023	
3	DC MOTOR	10	3.1 Principle of working of a DC motor. 3.2 Concept of development of torque & back EMF in DC motor including simple problems. 3.3 Derive equation relating to back EMF, Current, Speed and Torque equation 3.4 Classify DC motors & explain characteristics, application. 3.5 Three point & four-point stator/static of DC motor by solid State converter. 3.6 Speed of DC motor by field control and armature control method. 3.7 Power stages of DC motor & derive Efficiency of a DC motor.	11/03/2023 TO 21/03/2023	3.1 3.2 3.3 3.4 3.5 3.6 3.7	Principle of working of a DC motor. Concept of development of torque & back EMF in DC motor including simple problems. Derive equation relating to back EMF, Current, Speed and Torque equation Classify DC motors & explain characteristics, application. Three point & four-point stator/static of DC motor by solid State converter. Speed of DC motor by field control and armature control method. Power stages of DC motor & derive Efficiency of a DC motor.	01/03/2023 02/03/2023 & 06/03/2023 09/03/2023 13/03/2023 & 14/03/2023 15/03/2023 & 16/03/2023 20/03/2023 21/03/2023	
4	AC CIRCUITS	08	4.1 Mathematical representation of phasors, significant of operator "J" 4.2 Addition, Subtraction, Multiplication and Division of phasor quantities. 4.3 AC series circuits containing resistance, capacitances, Conception of active, Reactive and apparent power and Q-factor of series circuits & solve related problems. 4.4 Find the relation of AC Parallel circuits containing Resistances, Inductance and Capacitances Q-factor of parallel circuits.	22/03/2025 TO 05/04/2023	4.1 4.2 4.3 4.4	Mathematical representation of phasors, significant of operator "J" Addition, Subtraction, Multiplication and Division of phasor quantities. AC series circuits containing resistance, capacitances, Conception of active, Reactive and apparent power and Q-factor of series circuits & solve related problems. Find the relation of AC Parallel circuits containing Resistances,	22/03/2023 23/03/2023 & 27/03/2023 28/03/2023 & 29/03/2023 & 03/04/2023 04/04/2023 &	

						Inductance and Capacitances Q-factor of parallel circuits.	05/04/2023	
5	TRANSFORMER	10	5.1 Ideal transformer. 5.2 Construction & working principle of transformer 5.3 Derive of EMF equation of transformer, voltage transformation ratio. 5.4 Discuss Flux, Current, EMF components of transformer and their phasor diagram under no load Condition. 5.5 Phasor representation of transformer flux, current EMF primary and secondary Voltages under loadedcondition. 5.6 Types of losses in Single Phase (1-ø) Transformer. 5.7 Open circuit & short-circuit test (simple problems) 5.8 Parallel operation of Transformer. 5.9 Auto Transformer	06/04/2024 TO 24/04/2024	5.1 5.2 5.3 5.4 5.5 5.6 5.7 5.8 5.9	Ideal transformer. Construction & working principle of transformer Derive of EMF equation of transformer, voltage transformation ratio. Discuss Flux, Current, EMF components of transformer and their phasor diagram under no load Condition. Phasor representation of transformer flux, current EMF primary and secondary Voltages under loaded condition. Types of losses in Single Phase (1-ø) Transformer. Open circuit & short-circuit test (simple problems) Parallel operation of Transformer. Auto Transformer	06/04/2023 10/04/2023 & 11/04/2023 12/04/2023 13/04/2023 17/04/2023 18/04/2023 19/04/2023 20/04/2023 24/04/2023	

6	INDUCTION MOTOR	07	6.1 Construction feature, types of three-phase induction motor. 6.2 Principle of development of rotating magnetic field in the stator. 6.3 Establish relationship between synchronous speed, actual speed and slip of induction motor. 6.4 Establish relation between torque, rotor current and power factor. 6.5 Explain starting of an induction motor by using DOL and Star-Delta stator. State industrial use of induction motor.	25/04/2023 TO 02/05/2023	6.1 6.2 6.3 6.4 6.5	Construction feature, types of three-phase induction motor. Principle of development of rotating magnetic field in the stator. Establish relationship between synchronous speed, actual speed and slip of induction motor. Establish relation between torque, rotor current and power factor. Explain starting of an induction motor by using DOL and Star-Delta stator. State industrial use of induction motor.	25/04/2023 & 26/04/2023 27/04/2023 28/04/2023 29/04/2023 01/05/2023 & 02/05/2023	
8	SINGLE PHASE INDUCTION MOTOR	06	7.1 Construction features and principle of operation of capacitor type and shaded pole type of single-phase induction motor. 7.2 Explain construction & operation of AC series motor. 7.3 Concept of alternator & its application.	03/05/2023 TO 11/05/2023	7.1 7.2 7.3	Construction features and principle of operation of capacitor type and shaded pole type of single-phase induction motor. Explain construction & operation of AC series motor. Concept of alternator & its application.	03/05/2023 & 04/05/2023 & 08/05/2023 09/05/2023 10/05/2023 & 11/05/2023	

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