GANDHISCHOOLOFENGINEERING

BHABANDHA,BERHAMPUR

BRANCH:-ELECTRONICS&TELECOMMUNICATIONENGINEERING

SEMESTER:-4TH

SUBJECT:-ELECTRICALMACHINE

NameoftheFaculty-Debashri Pattnaik

	Topictobetaken				Actualtopictaken			
Sl. No	**Topic/Module**	**No.ofperiod**	**Detailsofthetopics**		**TopicNo.**	**TopicName**	**Date**	**Remarks**
1	ELECTRICAL MATERIAL	03	Properties & uses of different conducting material. 1.2Properties&useofvariousinsulating materialsusedelectricalengineering. 1.3Variousmagneticmaterials&theiruses.	08.08.2024 To 10.08.2024	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.	08/08/2024 09/08/2024 10/08/2024	
2	DCGENERATOR	07	Construction, Principle & application of DCGenerator. Classify DC generator including voltage equation. Derive EMF equation & simple problems. ParalleloperationofDCgenerators.	11.08.2024 To 18.08.2024	2.1 2.2 2.3	Construction, Principle & application of DC Generator. Classify DC generator including voltage equation. Derive EMF equation & simple problems.	11/08/2024 & 12/08/2024 14/08/2024 & 16/08/2024 17/08/2024 & 18/08/2024	

					2.4	Parallel operation ofDC generators.	18/08/2024	
3	DCMOTOR	10	PrincipleofworkingofaDCmotor. Concept of development of torque & back EMF in DC motor including simple problems. Derive equation relating to back EMF, Current, Speed and Torque equation ClassifyDCmotors&explain characteristics,application. Three point & four-point stator/static of DC motor by solid State converter. SpeedofDCmotorbyfieldcontroland armaturecontrolmethod. Power stages of DC motor & derive Efficiency of a DC motor.	19.08.2024 TO 31.08.2024	3.1 3.2 3.3 3.4 3.5 3.6 3.7	Principle ofworking of aDC 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. Threepoint&four-point stator/staticofDCmotorbysolid Stateconverter. SpeedofDCmotorbyfieldcontrol andarmaturecontrolmethod. PowerstagesofDCmotor& deriveEfficiencyofaDCmotor.	19/08/2024 21/08/2024 &22/08/2024 23/08/2024 24/08/2024 &25/08/2024 26/08/2024 & 28/08/2024 29/08/2024 31/08/2024	
4	ACCIRCUITS	08	Mathematical representation of phasors, significant of operator “J” Addition,Subtraction,Multiplication andDivisionofphasorquantities. 4.3 AC series circuits containing resistance, capacitances, Conception of active, Reactive andapparentpowerandQ-factorofseries circuits&solverelatedproblems. 4.4 Find the relation of AC Parallel circuits containing Resistances, Inductance and Capacitances Q-factor of parallel circuits.	01.09.2024 TO 15.09.2024	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 seriescircuits&solverelated problems. FindtherelationofACParallel circuitscontainingResistances,	01/09/2024 04/09/2024 &07/09/2024 11/09/2024 &12/09/2024 &13/09/2024 14/09/2024 &	

						InductanceandCapacitancesQ-factorofparallelcircuits.	15/09/2024	
5	TRANSFORMER	10	Idealtransformer. 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 diagramunder no load Condition. 5.5 Phasor representation of transformer flux, current EMF primary and secondary Voltages under loadedcondition. Types of losses in Single Phase (1-ø) Transformer. Open circuit & short-circuit test (simple problems) ParalleloperationofTransformer. AutoTransformer	16.04.2024 TO 31.09.2024	5.1 5.2 5.3 5.4 5.5 5.6 5.7 5.8 5.9	Idealtransformer. Construction & working principle of transformer Derive of EMF equation of transformer, voltage transformationratio. Discuss Flux, Current, EMF components of transformer and theirphasordiagramunderno loadCondition. Phasorrepresentationof transformerflux,currentEMF primaryandsecondaryVoltages underloadedcondition. TypesoflossesinSinglePhase(1-ø)Transformer. Open circuit & short-circuit test (simple problems) ParalleloperationofTransformer. AutoTransformer	16/04/2024 21/09/2024 &22/09/2024 23/09/2024 25/09/2024 26/09/2024 27/09/2024 29/09/2024 30/09/2024 31/09/2024	

6	INDUCTIONMOTOR	07	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.	03.10.2024 TO 11.10.2024	6.1 6.2 6.3 6.4 6.5	Construction feature, types of three-phaseinductionmotor. Principleofdevelopmentof rotatingmagneticfieldinthe stator. Establish relationship between synchronous speed, actual speed andslipofinductionmotor. Establish relation between torque, rotor current and power factor. Explainstartingofaninduction motorbyusingDOLandStar-Delta stator.Stateindustrialuseof inductionmotor.	03/10/2024 &04/10/2024 06/10/2024 07/10/2024 09/10/2024 10/10/2024 & 11/10/2024	
8	SINGLE PHASE INDUCTION MOTOR	06	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. Conceptofalternator&itsapplication.	12.10.2024 TO 18.10.2024	7.1 7.2 7.3	Construction features andprinciple of operation of capacitor type and shaded pole type of single-phase induction motor. Explain construction & operation of AC series motor. Concept ofalternator & its application.	12/10/2024 &13/10/2024 &14/10/2024 16/10/2024 17/10/2024 &18/10/2024	

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