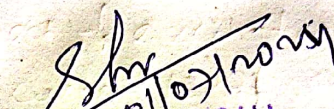


DISCIPLINE		SEMESTER	NAME OF THE TEACHING FACULTY	
ELECTRICAL		5TH	SRI SUSHANTA KUMAR MALIK, SR. LECTURER	
SUBJECT: EM-II(TH-2)		NO. OF DAYS PER WEEK CLASS ALLOTTED : 04	SEMESTER FROM 01/07/2024 TO 11/11/2024 - 14/12/24	
			NO. OF WEEKS : 15 NOS.	
WEEKS	CLASS DAYS	THEORY TOPICS		
1ST	1ST	Production of rotating magnetic field		
	2ND	Constructional feature of Squirrel cage and Slip ring induction motors		
	3RD	Working principles of operation of 3-phase Induction motor		
	4TH	Define slip speed, slip and establish the relation of slip with rotor quantities		
2ND	1ST	Derive expression for torque during starting and running conditions		
	2ND	Derive conditions for maximum torque. (solve numerical problems)		
	3RD	Torque-slip characteristics.		
	4TH	Derive relation between full load torque and starting torque etc(solve numerical problems)		
3RD	1ST	Establish the relations between Rotor Copper loss, Rotor output and Gross Torque		
	2ND	relationship of slip with rotor copper loss. (solve numerical problems)		
	3RD	Methods of starting and different types of starters used for three phase Induction motor.		
	4TH	Explain speed control by Voltage Control, Rotor resistance control		
4TH	1ST	Pole changing, frequency control methods		
	2ND	Plugging as applicable to three phase induction motor		
	3RD	Describe different types of motor enclosures		
	4TH	Explain principle of Induction Generator and state its applications		
5TH	1ST	Explain Ferrari's principle		
	2ND	Explain double revolving field theory and Cross-field theory of 1-phase induction motor		
	3RD	Explain Working principle, Torque speed characteristics, performance characteristics		
	4TH	Split phase motor, Capacitor Start motor		
6TH	1ST	capacitor run motor, Permanent capacitor type motor, Shaded pole motor		
	2ND	Explain the method to change the direction of rotation of above motors		
	3RD	Types of alternator and their constructional features		
	4TH	Basic working principle of alternator and the relation between speed and frequency.		
7TH	1ST	Terminology in armature winding and winding factors (Pitch factor, Distribution factor)		
	2ND	Explain harmonics, its causes and impact on winding factor		
	3RD	E.M.F equation of alternator. (Solve numerical problems)		
	4TH	Explain Armature reaction and its effect on emf at different power factor of load		
8TH	1ST	The vector diagram of loaded alternator. (Solve numerical problems)		
	2ND	Testing of alternator (Solve numerical problems)		
	3RD	Open circuit test, Short circuit test		
	4TH	Determination of voltage regulation of Alt direct loading and synchronous impedance method.		
9TH	1ST	Parallel operation of alternator using synchro-scope and dark & bright lamp method.		
	2ND	Explain distribution of load by parallel connected alternators		
	3RD	(Solve numerical problems)		
	4TH	Constructional feature of Synchronous Motor		
10TH	1ST	Principles of operation, concept of load angle		
	2ND	Derive torque, power developed		
	3RD	Effect of varying load with constant excitation		
	4TH	Effect of varying excitation with constant load		
11TH	1ST	Power angle characteristics of cylindrical rotor motor		
	2ND	Explain effect of excitation on Armature current and power factor		

	3RD	Hunting in Synchronous Motor
	4TH	Function of Damper Bars in synchronous motor and generator
12TH	1ST	Describe method of starting of Synchronous motor, State application of synchronous motor
	2ND	Construction, working principle of single phase series motor
	3RD	running characteristic and application of single phase series motor
	4TH	Construction, working principle and application of Universal motors
13TH	1ST	Working principle of Repulsion start Motor
	2ND	Repulsion start Induction run motor
	3RD	Repulsion Induction motor
	4TH	Principle of Stepper motor
14TH	1ST	Classification of Stepper motor
	2ND	Principle of variable reluctant stepper motor ,Principle of Permanent magnet stepper motor
	3RD	, Principle of hybrid stepper motor, Applications of Stepper motor
	4TH	THREE PHASE TRANSFORMERS
15TH	1ST	Explain Grouping of winding, Advantages
	2ND	Explain parallel operation of the three phase transformers
	3RD	Explain tap changer (On/Off load tap changing)
	4TH	Maintenance Schedule of Power Transformers


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