

Prepared by- Sachindra Kumar Gokhura

WEEK No	NO OF PERIODS AVAILABLE PER WEEK	CHAPTER	TOPIC NAME	PERIODS ASSIGNED per topic	
1	4	ALTERNATOR	1.1. Types of alternator and their constructional features	1	
			cont...	1	
			1.2. Basic working principle of alternator and the relation between speed and	1	
			1.3. Terminology in armature winding and expressions for winding factors (Pitch factor, Distribution factor).	1	
2	2		cont...	1	
			1.4. Explain harmonics, its causes and impact on winding factor	1	
			1.5. E.M.F equation of alternator. (Solve numerical problems).	1	
			1.6. Explain Armature reaction and its effect on emf at different power factor of load.	1	
3	3		1.7. The vector diagram of loaded alternator. (Solve numerical problems)	1	
			1.8. Testing of alternator (Solve numerical problems) 1.8.1. Open circuit test. 1.8.2. Short circuit test	1	
			cont...	1	
			1.9. Determination of voltage regulation of Alternator by direct loading and synchronous impedance method. (Solve numerical problems)	1	
4	4		cont...	1	
			1.10. Parallel operation of alternator using synchro-scope and dark & bright I	1	
			1.11. Explain distribution of load by parallel connected alternators.	1	
			previous year question answer discussion	1	
5	4	SYNCHRONOUS MOTOR	2.1. Constructional feature of Synchronous Motor	1	
			2.2. Principles of operation, concept of load angle	1	
			2.3. Derive torque, power developed	1	
			2.4. Effect of varying load with constant excitation	1	
6	4		2.5. Effect of varying excitation with constant load	1	
			2.6. Power angle characteristics of cylindrical rotor motor	1	
			2.7. Explain effect of excitation on Armature current and power factor	1	
			2.8. Hunting in Synchronous Motor	1	
7	4		2.9. Function of Damper Bars in synchronous motor and generator	1	
			2.10. Describe method of starting of Synchronous motor.	1	
			2.11. State application of synchronous motor	1	
			previous year question answer discussion	1	
8	2		THREE PHASE INDUCTION MOTOR	3.1. Production of rotating magnetic field	1
				3.2. Constructional feature of Squirrel cage and Slip ring induction motors	1
				3.3. Working principles of operation of 3-phase Induction motor	1
				3.4. Define slip speed, slip and establish the relation of slip with rotor quantities	1
9	4	3.5. Derive expression for torque during starting and running conditions and derive conditions for maximum torque. (solve numerical problems)		1	
		cont...		1	
		3.6. Torque-slip characteristics		1	
		3.7. Derive relation between full load torque and starting torque etc. (solve numerical problems)		1	
10	4	cont..		1	
		3.8. Establish the relations between Rotor Copper loss, Rotor output and Gross Torque and relationship of slip with rotor copper loss. (solve numerical problems)		1	
		cont...		1	
		3.9. Methods of starting and different types of starters used for three phase Induction motor		1	

11	4		cont...	1
			3.10. Explain speed control by Voltage Control, Rotor resistance control, Pole changing, frequency control methods	1
			3.11. Plugging as applicable to three phase induction motdr. 3.12. Describe different types of motor enclosures	1
			3.13. Explain principle of Induction Generator and state its applications.	1
12	4	SINGLE PHASE INDUCTION MOTOR	4.1. Explain Ferrari's principle 4.2. Explain double revolving field theory and Cross-field theory to analyze starting torque of 1-phase induction motor.	1
			4.3. Explain Working principle, Torque speed characteristics, performance characteristics and application of following single phase motors 4.3.1. Split phase motor	1
			4.3.2. Capacitor Start motor 4.3.3. Capacitor start, capacitor run motor	1
			4.3.4. Permanent capacitor type motor 4.3.5. Shaded pole motor.	1
13	3		4.4. Explain the method to change the direction of rotation of above motors	1
14	4	COMMUTATOR MOTORS	5.1. Construction, working principle, running characteristic and application of single phase series motor	1
			5.2. Construction, working principle and application of Universal motors	1
			5.3. Working principle of Repulsion start Motor, Repulsion start Induction run motor, Repulsion Induction motor	1
			cont...	1
15	4	SPECIAL ELECTRICAL MACHINE	6.1. Principle of Stepper motor 6.2. classification of stepper motor	1
			6.3. Principle of variable reluctant stepper motor	1
			6.4. Principle of Permanent magnet stepper motor	1
			6.5. Principle of hybrid stepper motor. 6.6. Applications of Stepper motor.	1
16	3	THREE PHASE TRANSFORMERS	7.1. Explain Grouping of winding, Advantages 7.2. Explain parallel operation of the three phase transformers	1
			7.3. Explain tap changer (On/Off load tap changing	1
			7.4. Maintenance Schedule of Power Transformers.	1
				1

Sign Of Faculty

Sign of Academic Coordinator