SYLLABI OF COURSES FOR DIPLOMA PROGRAMME IN ELECTRICAL ENGINEERING LEVEL IV & V

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4113 – A.C. MACHINESTeaching Schedule Per WeekProgressiveExamination ScheduleLecturesPracticalCreditsAssessmentTheoryPractical42625253 Hrs10050Pre-requisiteSourceSemesterTheoryTestTotalTW4104ELLSemester 75 25 100 25 Rationale: This course enables a learner to understand the working principle, parts of constraining these machines. A learner of this course will be acquainted with the knowledgivarious parameters of these machines. The power and control circuits of different start are also studied.COURSE CONTENTS	PR PR 5 50	Tota 200 Gr To 175	tal
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COURSE CONTENTS		l in A.C.	iysis c motor
		Hrs	Mks
1. THREE PHASE INDUCTION MOTOR		4	8
 three phase winding. Derivation of equation for equation for three phase induction Motor. Constructional details of three phase induction motor – slip ring and squirrel cage (single and double cage), concept of slip frequency, rotor emf and rotor current under stand still and running conditioned and the standard still and running conditioned and the standard standar	ondition and	14 n.	24
 out torque. Effect of variation of supply voltage, frequency and open deta condition on torque and speed. Development of circle diagram from appro equivalent circuit, torque – slip oharacteristics of induction motor on load. Relationship between starting torque and full load torque, starting torque at maximum torque. Terminal marking for three phase Induction motor. STARTERS Methods of starting squirrel cage and slip ring induction motors, type & need 	ximate nd of tarter,	6	8
(Squirrei cage) Direct on the staticit, stational outputs, Concept of soft st Rotor resistance starters (for slip ring induction motor). Concept of soft st its advantages, Power & control circuit, working of various starters includi circuit & protection.	anter an	nd sty 6	1
4. SINGLE PHASE INDUCTION MOTORS Construction, Principles of operation – Rotating field theory. Torque –speed characteristics. Classification of single phase motor based on methods of Resistance split phase (capacitor start, capacitor start and run, capacitor start capacitor run, shaded pole), Reluctance start.	Ster cure	g-	
	13, DIVII	ole	
5. ALTERNATOR Classification – Construction-Component and functions of salient pole, cylind and brush type, Frequency of inducted emf and factors on which it depend equation – Full pitched coil, Fractional pitched coil, Coil span factor and distribution factor, effect of these factors on generated emf, Hunting and damper winding for circuit control.	JOIL	10	0

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SYLLABI OF COURSES FOR DIPLOMA PROGRAMME IN ELECTRICAL ENGINEERING LEVEL IV & V 17

parameters - Armature resistance, leakage reactance, Synchronous reactance and		
impedation, l'hasor diagram of alternator under no load and on load and itig		
Regulation of alternator and calculation by synchronous Impedance method and by		
Great location of curcuit and short circuit test and calculation of curculation		
Impedance, Operating characteristics of Alternator, Rating and specification for proceedings.		
7. PARLEL OPERATION	8	8
Conditions for parallel operation, Methods of synchronising of Alternators (lamp		
THENES (Whohroscope method). Analysis of load sharing effect of change of		
metation on power factor, effect of change in the input power to one of the		
LE MENONOUS MOTOR	6	8
Principles of operation and special features of synchronous motor. Definition of load	Ŭ	Ū
Terrue and power equation, effect on current and power factor under,		
Exclusion that power equation, effect on current and power factor under,		
Concept of Conc		
	- 4	8
FCOMPERICTION, PRINCIPLE OF OPERATION & APPLICATION OF	4	8
Alexandror, Hysteresis motor, Universal motor, Repulsion motor	•	
Total	64	100
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