

Discipline:	EE	Semester:	8th	Name of the Teaching Faculty:	Sibya Das.
Subject:	energy conversion	No of Days/Week Class Allotted:	4	Semester From date:	13.02.23 To date 23.05.23
		No. of Weeks: 12			
WEEK	Class Day	Theory Topics			
	1st	Operating principle of generator			
	2nd	Constructional features of DC machine,			
	3rd	pole, pole & field winding, armature, commutator			
	4th	Armature winding, back pitch, front pitch, resultant pitch & commutator pitch,			
	5th				
	1st	Simple Lap & wave winding, Dummy coils			
	2nd	Different types of DC machines.			
	3rd	Derivation of EMF equation of DC generator			
	4th	Some problems of EMF equation of DC generator			
	5th				
	1st	Losses and efficiency of DC generator			
	2nd	Condition for max ⁿ efficiency & numerical - cal problems			
	3rd	Armature reaction in DC machine,			
	4th	commutation and methods of improving commutation,			
	5th				

WEEK	Class Day	Theory Topics
	1st	Role of Interp. poles and compensating windings in commutation.
	2nd	Application of different types of DC generator
	3rd	concept of critical resistance & critical speed of DC shunt generator.
	4th	Conditions of build-up of emf of DC generator.
	5th	
	1st	parallel operation of D.C. generator
	2nd	use of D.C. generator.
	3rd	Basic working principle of DC motor
	4th	significance of back emf in DC motor
	5th	
	1st	voltage equation of D.C. Motor & condition for maximum power output
	2nd	solve problems of voltage equation of DC motor and condition for max power output
	3rd	derive torque equation (solve problems)
	4th	solve problems related to torque equation
	5th	

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WEEK	Class Day	Theory Topics		
	1st	Characteristics of shunt, series & compound motor and their application,		
	2nd	Starting method of shunt motor.		
	3rd	Starting method of series motor.		
	4th	Starting method of compound motor		
	5th			
	1st	Speed control of DC-shunt motor by flux control method,		
	2nd	Speed control of DC, series motor by field flux control method,		
	3rd	Speed control of D.C. series motor by tapped field method & series parallel method		
	4th	Determination of efficiency of D.C. machine by brake test method,		
	5th			
	1st	Determination of efficiency of D.C. machine by Swinburn's test method,		
	2nd	Losses, efficiency & power stages of D.C. motor,		
	3rd	Some problems of losses & efficiency of power stages of D.C. motor		
	4th	Uses of D.C. motor,		
	5th			

WEEK	Class Day	Theory Topics
	1st	Working principle of transformer
	2nd	Constructional features of transformer
	3rd	Arrangement of core & winding in different types of transformer.
	4th	Basic ideal about transformer, necessary as such as conservator tank
	5th	
	1st	Explain types of cooling methods.
	2nd	State the procedures for care and maintenance.
	3rd	EMF equation of transformer
	4th	Solve problems related to EMF
	5th	
	1st	Ideal transformer, Voltage transformation ratio
	2nd	Operation of transformer
	3rd	E equivalent resistance, leakage reactance and impedance of transformer
	4th	to draw phasor diagram of transformer on load.
	5th	

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WEEK	Class Day	Theory Topics
	1st	TO explain equivalent circuit & solve numerical problems, Approximate & exact voltage drop
	2nd	Regulation of transformer. Different types of losses in a transformer. Explain open circuit & short circuit test (solve numerical)
	3rd	Explain efficiency, efficiency at different load and power factors, condition for maximum efficiency.
	4th	explain All day efficiency (solve problem) determination of load losses pending to maximum efficiency
	5th	
	1st	parallel operation of single phase transformer constructional features of auto transformer
	2nd	working principle of single phase auto transformer comparison of auto transformer with two windings transformer
	3rd	uses of auto transformer. explain tap changer with transformer
	4th	explain current transformer and potential transformer
	5th	
	1st	define ratio error, phase angle error, Burden.
	2nd	uses of C.T & P.T.
	3rd	class test - TP
	4th	class test question discussion.
	5th	


