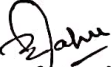


# SYNERGY POLYTECHNIC, BBSR

## The Lesson Plan

Discipline: EE	Semester: 4th	Name of the Teaching Faculty: Prof. D-D. Sahu
Subject: EC-I	No of Days/per week class allotted: 5	Semester from Date: 16/1/24 to Date: 26/4/24. No of Weeks: 15
Week	Class Day	Theory/Practical Topics
1st	1st D.C. Generator	Explanation of principle of operation.
	2nd	Construction, armature winding
	3rd	back pitch, front pitch & resultant
	4th	pitch & commutator pitch.
	5th	
2nd	1st	Simple Lap winding drawing
	2nd	drawing of wave winding
	3rd	& dummy coil.
	4th	Explanation of diff. types of DC machines (shunt, series & compound)
	5th	Derivation of EMF Equn. of DC gen.
3rd	1st	Solving of numerical problems
	2nd	Losses & efficiency of DC gen.
	3rd	Condition of max efficiency & solving
	4th	of numerical problems.
	5th	
4th	1st	Armature reaction in DC machines
	2nd	Commutation & methods of improvement
	3rd	Role of Inter poles, compensating winding Solve problems.
	4th	Characteristic of DC Generators. & solve numerical problems.
	5th	Application of diff. types of DC generators.
5th	1st	Concept of critical resistance & critical speed of DC shunt gen.
	2nd	Concept of build-up of emf & parallel
	3rd	operation of DC Gen.
DC. Motor	4th DC. Motor	Explanation of working principle of DC motor & back emf.
	5th	

  
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# SYNERGY POLYTECHNIC, BBSR

## The Lesson Plan

Discipline:	Semester:	Name of the Teaching Faculty:
Subject:	No of Days/per week class allotted:	Semester from Date: _____ to Date: _____ No of Weeks:
Week	Class Day	Theory/Practical Topics
6th	1st	Voltage equation of DC motor & condition of max power out put & solve problems.
	2nd	Derivation of torque equation & solve problem.
	3rd	Characteristic of shunt, series & comp. motors & applications.
	4th	Starting method of diff motors
	5th	Speed control of DC shunt motor by flux control method, Arm. voltage control method & solve numerical problems
7th 2nd	1st	Speed control of DC series motor by field flux control method, Tapped field method & series-parallel method.
	2nd	
	3rd	
	4th	Determination of efficiency of DC machine by Brake Test method & solve problems.
	5th	
8th 3rd	1st	Determination of efficiency of D.C. machine by Swinburg's Test method
	2nd	Losses, efficiency & power stages of DC motor & uses of DC motor.
	3rd	
1- $\phi$ transformer	4th	Working principle of t/f; construction
	5th	briefing about conservator, tank, breather & explosion vent; types of cooling method
9th 4th	1st	Procedure of care & maintenance.
	2nd	Derivation of EMF eqn of t/f & solving of problems.
	3rd	Voltage transformation ratio of ideal t/f.
	4th	Operation & phasor diagram of t/f at no load & on load.
	5th	Equivalent resistance, leakage reactance and impedance of t/f.
10th 5th	1st	Phasor diagram of t/f on load, with winding resistance, & leakage with
	2nd	using <del>unity</del> unity p.f, leading & lagging p.f. of load
	3rd	Drawing of equivalent circuit & solve problem
	4th	Approximate & exact voltage drop calculation
	5th	Voltage regulation of t/f

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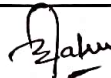
# SYNERGY POLYTECHNIC, BBSR

## The Lesson Plan

Discipline:	Semester:	Name of the Teaching Faculty:
Subject:	No of Days/per week class allotted:	Semester from Date: _____ to Date: _____ No of Weeks:
Week	Class Day	Theory/Practical Topics
11th 1st	1st	Different types of losses in a transformer Open circuit test
	2nd	Short circuit test & solve Numerical problem.
	3rd	Explain Efficiency at different loads
	4th	$\phi$ power factors, Condition for max efficiency & solve problems.
	5th	All Day efficiency & problems
<del>12th</del> Auto. 12th Transform	1st	Determination of load corresponding to Max. efficiency.
	2nd	Parallel operation of single phase t/f
	3rd	Auto-Transformer Constructional features of Auto-t/f & working principle.
	4th	comparison of Auto-t/f with two winding t/f (savings of Copper).
	5th	Uses of t/f, tap changer.
3rd 13th	1st	Explanation of current transformer & potential t/f. Uses of C.T. & P.T
	2nd	
	3rd	Define Ratio error, phase angle error & Burden.
	4th	Uses of C.T. & P.T.
	5th	Revision of D.C. Gen.
4th	1st	Revision of D.C. Motor
	2nd	Class Test.
	3rd	Discussion on FAQ.
	4th	
	5th	
15th	1st	
	2nd	
	3rd	
	4th	
	5th	

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