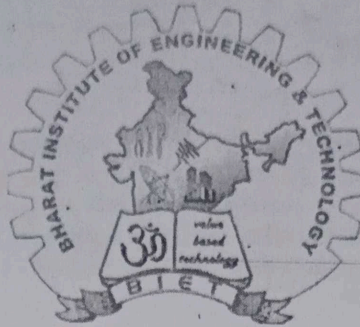


BHARAT INSTITUTE OF ENGINEERING & TECHNOLOGY

**SIVARAM VIHAR, GHATAKESWAR HILLS
MOHADA, BERHAMPUR (GM.)**



STUDENT'S ATTENDANCE REGISTER

Time	9:55	10:45	11:35	1:55	
Day	to 10:45	to 11:35	to 12:25	to 2:45	
TUE				EC-1	
WED		EC-1			
THU	EC-1				
FRI			EC-1		
SAT.			EC-1		

Year/ Session	2nd year, (2022-23)
Semester & Branch	4th sem, Electrical Engg.
Subject with Code	Energy Conversion-1, EC-1
Name of the Faculty Member	Prof. M.R. NAHAK./ER.S.K. Choudhury.

B.I.E.T., COURSE PLAN

Month	Week	Class Day	Theory/Practical Topic
↑ FEBRUARY ↓	<u>2nd</u>	14/2/23	<u>DC Generator.</u> <u>unit-1</u> <u>1.1</u> operating principle of DC Generator.
		15/2/23	<u>1.2.</u> construction features of DC machines. <u>1.2.1</u> yoke, pole, field winding, Armature, commutator. <u>1.2.2</u> Armature winding, back pitch, front pitch, resultant pitch, commutator pitch. <u>1.2.3</u> → Simple lap & wave winding. Dummy coils.
		16/2/23	<u>1.3</u> Different types of DC machine (Shunt, Series, Compound)
	<u>3rd</u>	17/2/23	<u>1.4</u> EMF equation of DC Generator (Related problems)
		21/2/23	<u>1.5</u> Losses and efficiency of DC Generator. Condition for maximum.

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B.I.E.T., COURSE PLAN

Month	Week	Class Day	Theory/Practical Topic
↑ FEBRUARY ↓			efficiency & Numerical Problems
		22/2/23 23/2/23	1.6 Armature reaction in Dc machine.
		24/2/23 25/2/23	1.7 Commutation & methods of Improving Commutation. 1.7.1 Role of Interpoles & compensating winding in commutation.
	<u>4th</u>	28/2/23	1.8 characteristics of DC Generators.
↑ FEBRUARY ↓	<u>1st</u>	01/3/23	1.9 Application of different types of DC Generators.
		2/3/23	
		3/3/23	1.10 Concept of critical resistance and critical speed of DC shunt Generator.
↑ MARCH ↓		4/3/23	1.11 condition of build up of Dmt of DC generator.
	<u>2nd</u>	9/3/23 10/3/23	1.12 parallel operation of DC generator
		11/3/23	1.13 uses of DC generator.

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Month	Week	Class Day	Theory/Practical Topic
MARCH	<u>3rd</u>		<u>DC Motor</u> <u>Unit-2</u>
		14/3/23	2.1) Basic working principle of DC motor.
		15/3/23	2.2) Significance of Back emf.
		16/3/23	2.3) voltage Equation of DC motor and condition for maximum power output. (simple problems)
		17/3/23	
	<u>4th</u>	18/3/23	2.4) Torque equation (solve problems)
		21/3/23	
		22/3/23	2.5) Characteristics of shunt, series, compound motor and their application.
		23/3/23	
		24/3/23	2.6) Starting methods of shunt, series, compound motors.
		25/3/23	2.7) Speed control of DC shunt motor by flux control method.
	<u>5th</u>	28/3/23	Armature voltage control method, solve problems.

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Month	Week	Class Day	Theory/Practical Topic
↑ MARCH ↓		29/3/23 31/3/23	<u>2.8</u> Speed control method of DC Series motor by ^{field} flux control method, armature voltage ^{tapped field} control method. and series-parallel method.
↑ APRIL ↓	<u>2nd</u>	4/4/23 5/4/23 6/4/23 8/4/23	<u>2.9</u> Determination of efficiency of DC machine by Break-test method (Solve Numerical problems) <u>2.10</u> Determination of efficiency of DC machine by Swinburn's method. (Solve Numerical Problems) <u>2.11</u> Losses, efficiency, power stage of DC motor (Solve Numerical problems) <u>2.12</u> Uses of DC motors.

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Month	Week	Class Day	Theory/Practical Topic
APRIL	<u>3rd</u>	11/4/23	<u>Single-phase Transformer</u> <u>Unit-3</u> 3.1 working principle of Transformer.
		12/4/23	3.2 construction feature of T/F
		13/4/23	3.2.1 Arrangement of core & winding in different types of T/F
		15/4/23	3.2.2 Brief Ideas about T/F accessories such as conservator, breather & explosion vent etc.
		18/4/23	3.3 State the procedures for care & maintenance.
	<u>4th</u>	19/4/23	3.4 EMF equation of T/F.
		20/4/23	3.5 Ideal T/F voltage transformation ratio.
		20/4/23	3.6 operation of T/F at No-load,
		21/4/23	on-load with phasor diagram.

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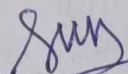
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Month	Week	Class Day	Theory/Practical Topic
APRIL ↑	<u>5th</u>	22/4/23	<u>3.7</u> Equivalent Resistance, leakage Reactance & Impedance of T/F.
		25/4/23 26/4/23	<u>3.8</u> To draw phasor diagram of T/F on-load, with winding resistance and magnetic leakage with using opt, leading pf & lagging pf load.
APRIL ↓		27/4/23	<u>3.9</u> To explain Equivalent circuit and solve numerical problems.
		28/4/23	<u>3.10</u> Approximate & exact voltage drop calculation of a T/F.
		28/4/23	<u>3.11</u> Regulation of T/F.
		29/4/23	<u>3.12</u> Different types of losses in a T/F. Explain open circuit

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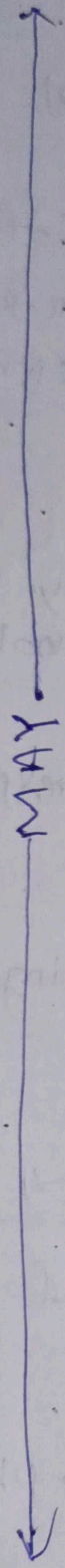
Month	Week	Class Day	Theory/Practical Topic	
↑ MAY ↓	<u>1st</u>	2/5/23	and short circuit test (Solve Numerical problems)	
		3/5/23	<u>3.13</u> Explains Efficiency, efficiency at different loads & power factor, condition for maximum efficiency (Solve problems)	
		4/5/23		
		6/5/23	<u>3.14</u> Explain all-day efficiency (Solve problems)	
			<u>3.15</u> Determination of load corresponding to maximum efficiency.	
			<u>3.16</u> parallel operation of single phase T/F.	
	<u>2nd</u>	9/5/23		<u>Auto-Transformer. Unit-4</u>
		10/5/23		
		11/5/23		→ constructional features of Auto-T/F.
		12/5/23		→ Working principle of single phase T/F.

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Month	Week	Class Day	Theory/Practical Topic
			<u>4.3</u>
		13/5/23	Comparison of Auto-T/F with an two winding T/F (Saving of copper)
			<u>4.4</u>
		13/5/23	uses of Auto T/F.
	<u>3rd</u>		<u>4.5</u>
		16/5/23	Explain tap changer with transformer (ON-load & off-load condition)
			<u>Instrument Transformer.</u> <u>Unit-5</u>
		17/5/23	<u>5.1</u> Explain C.T. & P.T.
	18/5/23		
	20/5/23	<u>5.2</u> Define Ratio error, phase angle error, Burden.	
		<u>4th</u>	<u>5.3</u> uses of CT & PT.
	23/5/23		

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