ACADEMIC LESSON PLAN OF SUMMER 2022

Discipline: ELECTRICAL	Semester: 4th Sem (Sec A)	Name of the Teaching Faculty: AMIT KUMAR BISOYI
Subject: ENERGY CONVERSION-I TH. 1	No. of days/per week class allotted:4p/week Tutorial:1p/week	Semester From: 10th March 2022 to 10th June 2022
Week	Class Day	Theory Topics
1st	10/03/2022	**1.D.C GENERATOR:** 1.1 Operating principle of generator
	10/03/2022	1.2 Constructional features of DC machine 1.2.1 Yoke, Pole & field winding, Armature, Commutator
	11/03/2022	1.2.2 Armature winding, back pitch, Front pitch, Resultant pitch and commutator- pitch.
	14/03/2022	1.2.3 Simple Lap and wave winding, Dummy coils
	16/03/2022	Tutorial
2nd	17/03/2022	1.3 Different types of D.C. machines (Shunt, Series and Compound)(contd…)
	17/03/2022	1.3 Different types of D.C. machines (Shunt, Series and Compound)
	18/03/2022	Holiday
	21/03/2022	1.4 Derivation of EMF equation of DC generators. (Solve problems) (contd…)
	23/03/2022	1.4 Derivation of EMF equation of DC generators. (Solve problems)
3rd	24/03/2022	Tutorial
	24/03/2022	1.5 Losses and efficiency of DC generator. Condition for maximum efficiency and numerical problems(contd..)
	25/03/2022	1.5 Losses and efficiency of DC generator. Condition for maximum efficiency and numerical problems.
	28/03/2022	1.6. Armature reaction in D.C. machine (contd…)
	30/03/2022	1.6. Armature reaction in D.C. machine
4th	31/03/2022	Tutorial
	31/03/2022	1.7. Commutation and methods of improving commutation
	01/04/2022	Holiday
	04/04/2022	1.7 Commutation and methods of improving commutation (contd…)
	06/04/2022	1.8 Characteristics of D.C. Generators 1.9. Application of different types of D.C. Generators.
5th	07/04/2022	1.10. Concept of critical resistance and critical speed of DC shunt generator 1.11. Conditions of Build-up of emf of DC generator.
	07/04/2022	Tutorial
	08/04/2022	1.12. Parallel operation of D.C. Generators. 1.13. Uses of D.C generators.
	11/04/2022	**2.D. C. MOTORS** 2.1 Basic working principle of DC motor.
	13/04/2022	2.2 Significance of back emf in D.C. Motor
6th	14/04/2022	Holiday
	14/04/2022	Holiday
	15/04/2022	Holiday
	18/04/2022	2.3 Voltage equation of D.C. Motor and condition for maximum power output (simple Problems)(contd…)
	20/04/2022	Tutorial
7th	21/04/2022	2.3 Voltage equation of D.C. Motor and condition for maximum power output(simple problems)
	21/04/2022	2.4. Derive torque equation (solve problems)(contd…)
	22/04/2022	2.4. Derive torque equation (solve problems)

	25/04/2022	2.5. Characteristics of shunt, series and compound motors and their application.
	27/04/2022	Tutorial
8th	28/04/2022	2.6. Starting method of shunt, series and compound motors.
	28/04/2022	2.7. Speed control of D.C shunt motors by Flux control method. Armature voltage Control method. Solve problems(contd…)
	29/04/2022	2.7. Speed control of D.C shunt motors by Flux control method. Armature voltage Control method. Solve problems
	02/05/2022	2.8. Speed control of D.C. series motors by Field Flux control method, Tapped field method and series-parallel method
	04/05/2022	Tutorial
9th	05/05/2022	2.9. Determination of efficiency of D.C. Machine by Brake test method (solve numerical problems)
	05/05/2022	2.10. Determination of efficiency of D.C. Machine by Swinburne's Test method (solve numerical problems)
	06/05/2022	2.11. Losses, efficiency and power stages of D.C. motor (solve numerical problems) (contd…)
	09/05/2022	2.11. Losses, efficiency and power stages of D.C. motor (solve numerical problems) 2.12. Uses of D.C. motors
	11/05/2022	Tutorial
10th	12/05/2022	**3. SINGLE PHASE TRANSFORMER** 3.1 Working principle of transformer
	12/05/2022	3.2 Constructional feature of Transformer.
	13/05/2022	3.2.1 Arrangement of core & winding in different types of transformer.
	16/05/2022	Holiday
	18/05/2022	3.2.2 Brief ideas about transformer accessories such as conservator, tank, breather, and explosion vent etc.
11th	19/05/2022	Tutorial
	19/05/2022	3.2.3 Explain types of cooling methods 3.3 State the procedures for Care and maintenance
	20/05/2022	3.4 EMF equation of transformer.
	23/05/2022	3.5 Ideal transformer voltage transformation ratio
	25/05/2022	3.6 Operation of Transformer at no load, on load with phasor diagrams.(contd…)
12th	26/05/2022	Tutorial
	26/05/2022	3.6 Operation of Transformer at no load, on load with phasor diagrams.
	27/05/2022	3.7 Equivalent Resistance, Leakage Reactance and Impedance of transformer.
	30/05/2022	Holiday
	01/06/2022	3.8 To draw phasor diagram of transformer on load, with winding Resistance and Magnetic leakage with using UPF, leading pf and lagging pf load.(contd…)
13th	02/06/2022	3.8 To draw phasor diagram of transformer on load, with winding Resistance and Magnetic leakage with using UPF, leading pf and lagging pf load.
	02/06/2022	Tutorial
	03/06/2022	3.9 To explain Equivalent circuit and solve numerical problems
	06/06/2022	3.10 Approximate & exact voltage drop calculation of a Transformer 3.11 Regulation of transformer.
	08/06/2022	3.12 Different types of losses in a Transformer. Explain Open circuit and Short Circuit test. (Solve numerical problems)(contd…)
14th	09/06/2022	3.12 Different types of losses in a Transformer. Explain Open circuit and Short Circuit test.(Solve numerical problems)
	09/06/2022	Tutorial
	10/06/2022	3.13 Explain Efficiency, efficiency at different loads and power factors, condition for maximum efficiency (solve problems) (contd..)
	Extra Class	3.13 Explain Efficiency, efficiency at different loads and power factors, condition for maximum efficiency (solve problems)
	Extra Class	3.14 Explain All Day Efficiency (solve problems)
15th	Extra Class	3.15 Determination of load corresponding to Maximum efficiency.

	Extra Class	Tutorial
	Extra Class	3.16 Parallel operation of single phase transformer.
	Extra Class	**4. AUTO TRANSFORMER** 4.1. Constructional features of Auto transformer. 4.2. Working principle of single phase Auto Transformer
	Extra Class	4.3. Comparison of Auto transformer with an two winding transformer (saving of Copper). 4.4. Uses of Auto transformer
16th	Extra Class	4.5. Explain Tap changer with transformer (on load and off load condition)
	Extra Class	Tutorial
	Extra Class	**5.INSTRUMENT TRANSFORMERS** 5.1 Explain Current Transformer and Potential Transformer
	Extra Class	5.1 Explain Current Transformer and Potential Transformer(contd…)
	Extra Class	5.2 Define Ratio error, Phase angle error, Burden.
17th	Extra Class	5.3 Uses of C.T. and P.T
	Extra Class	Tutorial

Signature of Teaching Faculty

ACADEMIC LESSON PLAN OF SUMMER 2022

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