

Bhoj Reddy Engineering College for Women: Hyderabad

Department of Electrical and Electronics Engineering

Lesson plan of faculty member for the academic year 2017-18

Class: II B Tech

Branch-Section: EEE

Semester: I

Subject: Electrical Machines-I

Lectures per week: 4+1 (Tutorial)

Lecture Number	Topics to be covered	Date (s)
UNIT – I: DC Generators		
1	Introduction to DC machines	12 July 2017
2	Principle of operation–single coil dynamo operation, Action of commutator	13 July 2017
3	Constructional features	14 July 2017
4	Armature windings, Use of laminated core	18 July 2017
5	Lap and Wave winding	19 July 2017
6	Numerical problems on Armature windings	20 July 2017
7	Simplex and multiplex windings	21 July 2017
8	EMF equation	25 July 2017
9	Numerical problems on EMF equation	26 July 2017
10	Cross magnetizing and demagnetizing AT/Pole	27 July 2017
11	Armature reaction	28 July 2017
12	Tutorial: Problems on AT/pole	24 July 2017
13	Commutation	1 August 2017
14	Methods of improving commutation, Reactance voltage	2 August 2017
15	Methods of Excitation	3 August 2017
16	Separately & Self excited generators	4 August 2017
17	Tutorial: Numerical problems on commutation	31 July 2017
18	Critical field resistance and critical speed	8 August 2017
19	Causes for failure to self excite and remedial measures	9 August 2017
20	Load characteristics of shunt generator	10 August 2017
21	Load characteristics of series generator	11 August 2017
22	Load characteristics of compound generators	16 August 2017
UNIT-II: DC Motors		
23	DC motor–Principle of operation	17 August 2017
24	Tutorial: Problems on motors	18 August 2017
25	Torque equation	22 August 2017
26	Characteristics of series and shunt motors	23 August 2017
27	Characteristics of compound motors, Applications of motors	24 August 2017
28	Tutorial: Numerical problems on back emf	21 August 2017
29	Armature Reaction, Commutation	29 August 2017
30	Speed control of DC motors, Armature Voltage control	30 August 2017
31	Field flux control method	31 August 2017
32	3-point starters, 4–point starters	1 September 2017
33	Losses, Constant & variable losses	28 August 2017
34	Calculation of efficiency, Condition for maximum efficiency	5 September 2017
35	Tutorial: Assignment - I	4 September 2017
UNIT-III		
36	Methods of Testing direct, indirect & regenerative Testing	12 September 2017
37	Brake Test, Swinburne's test	13 September 2017
38	Hopkinson's test	14 September 2017
39	Field's test	15 September 2017
40	Tutorial: Numerical problems on brake and swinburne's tests	11 September 2017
41	Separation of stray losses in a DC motor test	19 September 2017
UNIT-IV: Single Phase Transformers		
42	Constructional details	21 September 2017
43	Single phase transformers –types	22 September 2017

Lecture Number	Topics to be covered	Date (s)
44	Tutorial: Problems on hopkinson's and Field's tests	18 September 2017
45	EMF equation, Problems	3 October 2017
46	Operation on no-load – Phasor diagram	4 October 2017
47	Operation on Load – Phasor diagram	5 October 2017
48	Equivalent circuit	6 October 2017
49	Regulation	10 October 2017
50	Losses & Minimization of iron losses	11 October 2017
51	Efficiency& All day efficiency	12 October 2017
52	Effect of variations of frequency & supply voltage on iron losses	13 October 2017
53	Tutorial: Problems on EMF equation	9 October 2017
54	Problems on regulation and losses	17 October 2017
UNIT-V		
55	OC and SC Tests	19 October 2017
56	Sumpner's Test	20 October 2017
57	Tutorial: Problems on OC & SC tests	16 October 2017
58	Separation of losses test	24 October 2017
59	Problems on sumpner's and separation of losses tests	25 October 2017
60	Parallel operation with equal voltage ratios	26 October 2017
61	Parallel operation with unequal voltage ratios	27 October 2017
62	Tutorial: Problems on parallel operation	23 October 2017
63	Auto transformers - Equivalent circuit	31 October 2017
64	Comparison with two winding transformer	1 November 2017
65	Problems on auto transformer	2 November 2017
66	Poly phase connections - Y/Y, Y/ Δ , Δ /Y, Δ / Δ and open Δ	3 November 2017
67	Tutorial: Discussion of previous question papers	30 October 2017
68	Revision	7 November 2017
69	Tutorial: Assignment - II	6 November 2017

Text books:

1. Dr. P. S. Bimbhra, "Electrical Machines", 7/e, Khanna Publishers, 2014.
2. V. K. Mehta, Rohit Mehta, "Principles of Electrical Machines", 2/e, S. Chand Publishers, 2015.

Name and signature of the faculty: Ms Asha Kiranmai S ----

Name and signature of Head of the Department: Mrs Deepti S ----