

Model Lesson Plan – Static Drives (A60225)

III Year B.Tech. II Sem.

Sl. No	Name of the Topic	No. of Classes required	Cumulative number of periods	Teaching Aid
Unit – I				
1.	Introduction to Thyristor controlled Drives,	01	01	Chalk & Talk
2.	Phase semi and Fully controlled converters connected to d.c separately excited and d.c series motors	01	02	Chalk & Talk
3.	continuous current operation	01	03	LCD
4.	output voltage and current waveforms	01	04	Chalk & Talk
5.	Speed and Torque expressions	02	06	LCD
6.	Speed – Torque Characteristics	01	07	Chalk & Talk
7.	Problems on Converter fed d.c motors (T)	01	08	Chalk & Talk
8.	Problems on dc separately excited and dc series motors. (T)	01	09	Chalk & Talk
9	Lecture beyond syllabus	01	10	Chalk & Talk
10.	Three phase semi and fully controlled converters connected to d.c separately excited motors	01	11	Chalk & Talk
11.	Three phase semi and fully controlled converters connected to d.c series motors	01	12	Chalk & Talk
12.	output voltage and current waveforms for dc separately excited motors.	01	13	Chalk & Talk
13	output voltage and current waveforms for dc series motors.	01	14	Chalk & Talk
14	Speed and Torque expressions	02	16	LCD
15	Speed – Torque characteristics – Problems	01	17	Chalk & Talk
16	Problems on 3-phase Converter fed dc separately motors (T)	01	18	Chalk & Talk
17	Problems on Converter fed d.c series motors (T)	01	19	Chalk & Talk
18	Lecture beyond syllabus	02	21	Chalk & Talk
19	SPECIAL DESCRIPTIVE TEST	01	22	
Unit - II				
20	Introduction to Four quadrant operation – Motoring operations	01	23	Chalk & Talk
21	Electric Braking – Plugging, Dynamic and Regenerative Braking operations	02	25	Chalk & Talk
22	Four quadrant operation of D.C motors by dual converters	01	26	LCD
23	Closed loop operation of DC motor (Block Diagram Only)	01	27	LCD
24	Problems on electric braking, plugging.(T)	02	29	Chalk & Talk
25	Problems on dynamic, regenerative braking. (T)	02	31	Chalk & Talk
26	REMEDIAL/NPTEL	02	33	
Unit – III				
27	Single quadrant, Two –quadrant chopper fed dc separately excited and series excited motors	02	35	Chalk & Talk
28	four quadrant chopper fed dc separately excited and series excited motors	02	37	Chalk & Talk
29	Continuos current operation – Output voltage and current wave forms	01	38	Chalk & Talk

30	Speed torque expressions – speed torque characteristics	02	40	Chalk & Talk
31	Problems on Chopper fed d.c Motors, Closed Loop operation (Block Diagram Only)	01	41	Chalk & Talk
32	Problems on continuous current operation of dc separately excited motors and speed torque characteristics of dc series motors (T)	02	43	Chalk & Talk
Unit -IV				
33	introduction and Control of Induction Motor by Ac Voltage Controllers & waveforms	02	45	Chalk & Talk
34	speed torque characteristics	01	46	LCD
35	Problems on Control of Induction Motor through Stator voltage (T)	01	47	Chalk & Talk
36	Problems on Control of Induction Motor by Ac Voltage Controllers (T)	01	48	Chalk & Talk
37	Problems on speed torque characteristics of induction motors. (T)	01	49	Chalk & Talk
38	Remedial class/NPTEL	02	51	Chalk & Talk LCD
SPECIAL DESCRIPTIVE EXAM		01	52	
39	Variable frequency characteristics	01	53	Chalk & Talk
40	frequency control of induction motor by Voltage source and current source inverter	02	55	Chalk & Talk
41	control of induction motor by cyclo converters	01	56	Chalk & Talk LCD
42	PWM control	02	58	Chalk & Talk LCD
43	Comparison of VSI and CSI operations	01	59	Chalk & Talk
44	Speed torque characteristics and numerical problems on induction motor drives	01	60	Chalk & Talk
45	Closed loop operation of induction motor drives (Block Diagram Only) and Problems on PWM control. . (T)	02	62	Chalk & Talk
46	Lecture beyond syllabus	01	63	Chalk & Talk
47	Special descriptive Test	01	64	
48	Static rotor resistance control	01	65	Chalk & Talk
49	Slip power recovery -Static Scherbius drive	02	67	Chalk & Talk
50	Static Kramer Drive	02	69	Chalk & Talk
51	their performance and speed torque characteristics & advantages applications	01	70	Chalk & Talk
52	Control of Induction motor of Rotor side problems- On Static rotor resistance control, On Slip power recovery. (T)	02	72	Chalk & Talk
Unit - V				
53	Separate control & self control of synchronous motors	01	73	Chalk & Talk
54	Operation of self controlled synchronous motors by VSI and CSI cycloconverters.	01	74	Chalk & Talk
55	Load commutated CSI fed Synchronous Motor	01	75	Chalk & Talk

				LCD
56	Operation – Waveforms	01	76	Chalk & Talk LCD
57	speed torque characteristics	01	77	Chalk & Talk
58	Applications – Advantages and Numerical Problems	01	78	Chalk & Talk
59	Tutorial	01	79	Chalk & Talk
60	Tutorial	01	80	Chalk & Talk