GOVERNMENT POLYTECHNIC ,BARGARH
Department Of Electrical Engineering

Semester:4th.DIPLOMA
Subject:E.C-I
Branch:ElectricalEngineering

Session:2023(Summer)
No of Period :75 (60 L+ 15 T)
Name of Faculty:NITESH KU. ACHARYA

Period	Date	Topicstobe covered
1	13.02.2023	**D.C. GENERATOR:** Operating principle of generator
2	14.02.2023	Constructional features of DC machine.
3	15.02.2023	Yoke, Pole & field winding, Armature, Commutator.
4	16.02.2023	Armature winding, back pitch, Front pitch, Resultant pitch and commutator- pitch.
5	17.02.2023	Recall & discussion of class 1 to 4
6	20.02.2023	Simple Lap and wave winding, Dummy coils.
7	21.02.2023	Different types of D.C. machines (Shunt, Series and Compound)
8	22.02.2023	Derivation of EMF equation of DC generators. (Solve problems)
9	23.02.2023	Losses and efficiency of DC generator. Condition for maximum efficiency and numerical problems.
10	24.02.2023	Recall & discussion of class 6 to 9
11	27.02.2023	Armature reaction in D.C. machine
12	28.02.2023	Commutation and methods of improving commutation.
13	01.03.2023	Role of inter poles and compensating winding in commutation. Characteristics of D.C. Generators.
14	02.03.2023	Application of different types of D.C. Generators. Concept of critical resistance and critical speed of DC shunt generator
15	03.03.2023	Recall & discussion of class 11 to 14
16	06.03.2023	Conditions of Build-up of emf of DC generator.

17	09.03.2023	Parallel operation of D.C. Generators Uses of D.C generators.
18	10.03.2023	**D. C. MOTORS:** Basic working principle of DC motor
19	11.03.2023 (9:00 am-10:00 am)	Significance of back emf in D.C. Motor.
20	13.03.2023	Recall & discussion of class 16 to 19
21	14.03.2023	Voltage equation of D.C. Motor and condition for maximum power output (simple problems)
22	15.03.2023	Derive torque equation (solve problems)
23	16.03.2023	Characteristics of shunt, series and compound motors and their application.
24	17.03.2023	Starting method of shunt, series and compound motors.
25	18.03.2023 (9:00 am-10:00 am)	Recall & discussion of class 21 to 24
26	20.03.2023	Speed control of D.C shunt motors by Flux control method. Armature voltage Control method.
27	21.03.2023	Solve problems of Speed control of D.C shunt motors.
28	22.03.2023	Determination of efficiency of D.C. Machine by Brake test method.
29	23.03.2023	solve numerical problems on determination of efficiency.
30	24.03.2023	Recall & discussion of class 26 to 29
31	25.03.2023 (9:00 am-10:00 am)	Determination of efficiency of D.C. Machine by Swinburne's Test method.
32	27.03.2023	solve numerical problems of Swinburne's Test method.
33	28.03.2023	Losses, efficiency and power stages of D.C. motor.
34	29.03.2023	solve numerical problems on Losses, efficiency and power stages of D.C. motor. Uses of D.C. motors
35	31.03.2023	Recall & discussion of class 31 to 34
36	03.04.2023	**SINGLE PHASE TRANSFORMER: -** Working principle of transformer.
37	04.04.2023	Constructional feature of Transformer. Arrangement of core & winding in different types of transformers.
38	05.04.2023	Brief ideas about transformer accessories such as conservator, tank, breather, and explosion vent etc.

39	06.04.2023	Explain types of cooling methods.
40	08.04.2023 (9:00 am-10:00 am)	Recall & discussion of class 36 to 39
41	10.04.2023	State the procedures for Care and maintenance.
42	11.04.2023	EMF equation of transformer.
43	12.04.2023	Ideal transformer voltage transformation ratio.
44	13.04.2023	Operation of Transformer at no load, on load with phasor diagrams.
45	15.04.2023 (4.30 pm-5.30 pm)	Recall & discussion of class 41 to 44
46	18.04.2023	Equivalent Resistance, Leakage Reactance and Impedance of transformer.
47	19.04.2023	To draw phasor diagram of transformer on load
48	20.04.2023	Phasor diagram of winding Resistance and Magnetic leakage with using unit pf, leading pf and lagging pf load.
49	21.04.2023	To explain Equivalent circuit and solve numerical problems.
50	22.04.2023 (4.30 pm-5.30 pm)	Recall & discussion of class 46 to 49
51	24.04.2023	Approximate & exact voltage drop calculation of a Transformer.
52	25.04.2023	Regulation of transformer.
53	26.04.2023	Different types of losses in a Transformer.
54	27.04.2023	Explain Open circuit and Short Circuit test. (Solve numerical problems)
55	28.04.2023	Recall & discussion of class 51 to 54
56	29.04.2023 (4.30 pm-5.30 pm)	Explain Efficiency, efficiency at different loads and power factors, condition for maximum efficiency.
57	01.05.2023	solve problems on efficiency of transformer.
58	02.05.2023	Explain All Day Efficiency (solve problems).
59	03.05.2023	Determination of load corresponding to Maximum efficiency.
60	04.05.2023	Recall & discussion of class 56 to 59
61	06.05.2023(4.30 pm-5.30 pm)	Parallel operation of single-phase transformer.
62	08.05.2023	**AUTO TRANSFORMER:** Constructional features of Auto transformer.
63	09.05.2023	Working principle of single-phase Auto Transformer.
64	10.05.2023	Comparison of Auto transformer with a two-winding transformer.

65	11.05.2023	Recall & discussion of class 61 to 64
66	12.05.2023	saving of Copper of Auto-transformer.
67	13.05.2023(4.30 pm-5.30 pm)	Uses of Auto transformer.
68	15.05.2023	Explain Tap changer with transformer.
69	16.05.2023	On load and Off load Tap Changer.
70	17.05.2023	Recall & discussion of class 66 to 69
71	18.05.2023	**INSTRUMENT TRANSFORMERS:** Explain Current Transformer and Potential Transformer.
72	20.05.2023(4.30 pm-5.30 pm)	Define Ratio error, Phase angle error, Burden.
73	22.05.2023	Uses of C.T. and P.T.
74	23.05.2023	Discussion on C.T. & P.T.
75	23.05.2023(4.30 pm-5.30 pm)	Recall & discussion of class 71 to 74

11/2/23
Signature of the Faculty

4/02/23
Signature of the HOD