GOVERNMENT POLYTECHNIC ,BARGARH
Department Of Electrical Engineering

Semester:5th.DIPLOMA
Subject:Energy Conversion-II
Branch:ElectricalEngineering

Session:2022(WINTER)
No of Period :60 (4p/week)
NameofFaculty:NITESH KU. ACHARYA

Period	Date	Topicstobe covered
1	14.09.2022	**ALTERNATOR:** Types of alternators and their constructional features.
2	16.09.2022	Basic working principle of alternator and the Relation between speed and frequency.
3	19.09.2022	Terminology in armature winding and expressions for winding factors (Pitch factor, Distribution factor).
4	20.09.2022	Explain harmonics, its causes and impact on winding factor.
5	21.09.2022	E.M.F equation of alternator. (Solve numerical problems).
6	23.09.2022	Explain Armature reaction and its effect on emf at different power factor of load.
7	26.09.2022	The vector diagram of loaded alternator. (Solve numerical problems.)
8	27.09.2022	Testing of alternator (Solve numerical problems) Open circuit test. Short circuit test.
9	28.09.2022	Determination of voltage regulation of Alternator by direct loading and synchronous impedance method. (Solve numerical problems)
10	30.09.2022	Parallel operation of alternator using synchro- scope method.
11	11.10.2022	Parallel operation of alternator using dark & bright lamp method.
12	12.10.2022	Explain distribution of load by parallel connected alternators.
13	14.10.2022	**SYNCHRONOUS MOTOR:** Constructional feature of Synchronous Motor.
14	17.10.2022	Principles of operation, concept of load angle. Derive torque, power developed.
15	18.10.2022	Effect of varying load with constant excitation.
16	19.10.2022	Effect of varying excitation with constant load.

17	21.10.2022	Power angle characteristics of cylindrical rotor motor
18	25.10.2022	Explain effect of excitation on Armature current and power factor
19	26.10.2022	Hunting in Synchronous Motor.
20	28.10.2022	Function of Damper Bars in synchronous motor and generator.
21	31.10.2022	Describe method of starting of Synchronous motor. State application of synchronous motor.
22	01.11.2022	**THREE PHASE INDUCTION MOTOR:** Production of rotating magnetic field
23	02.11.2022	Constructional feature of Squirrel cage and Slip ring induction motors. Working principles of operation of 3-phase Induction motor.
24	04.11.2022	Define slip speed, slip and establish the relation of slip with rotor quantities.
25	07.11.2022	Derive expression for torque during starting and running conditions and derive conditions for maximumtorque. (Solve numerical problems)
26	09.11.2022	Torque-slip characteristics.
27	11.11.2022	Derive relation between full load torque and starting torque etc. (solve numerical problems)
28	14.11.2022	Establish the relations between Rotor Copper loss, Rotor output and Gross Torque and relationship of slip with rotor copper loss. (Solve numerical problems)
29	15.11.2022	Methods of starting and different types of startersused for three phase Induction motor.
30	16.11.2022	Explain speed control by Voltage Control, Rotor resistance control, Pole changing, frequency control methods.
31	18.11.2022	Plugging as applicable to three phase induction motor.
32	21.11.2022	Describe different types of motor enclosures.
33	22.11.2022	Explain principle of Induction generator and state its application.
34	23.11.2022	**SINGLE PHASE INDUCTION MOTOR:** Explain Ferrari's principle.
35	25.11.2022	Explain double revolving field theory and Cross- field theory to analyze starting torque of 1- phase induction motor.
36	28.11.2022	Explain working principle, Torque-speed characteristics, performance characteristics of single-phase induction motor
37	29.11.2022	Split phase Induction motor, Capacitor Start Induction motor

38	30.11.2022	Permanent Capacitor motor, Shaded Pole motor
39	02.12.2022	Explain the method to change the direction of rotation of above motor.
40	05.12.2022	**COMMUTATOR MOTOR:** Construction, working principle, Runningcharacteristic and application of single series motor.
41	06.12.2022	Construction, working principle and application of Universal motors.
42	07.12.2022	Working principle of Repulsion start Motor.
43	09.12.2022	Repulsion start Induction run motor, Repulsion Induction motor
44	12.12.2022	**SPECIAL ELECTRICAL MACHINE:** Principle of Stepper motor. Classification of Stepper motor
45	13.12.2022	Principle of variable reluctant steppe: motor.
46	14.12.2022	Principle of Permanent magnet stepper motor.
47	16.12.2022	Principle of hybrid stepper motor.
48	19.12.2022	Applications of Stepper motor.
49	20.12.2022	**THREE PHASE TRANSFORMERS:** Explain Grouping of winding, Advantages
50	21.12.2022	Explain parallel operation of the three phase transformers.
51	02.01.2023	Explain tap changer (On/Off load tap changing)
52	03.01.2023	Maintenance Schedule of Power Transformers.
53	04.01.2023	Numerical discussion of Alternator.
54	06.01.2023	Numerical discussion of Alternator.
55	09.01.2023	Numerical discussion of Three phase Induction motor.
56	10.01.2023	Numerical discussion of Three phase Induction motor.
57	13.01.2023	Previous year question discussion
58	16.01.2023	Previous year question discussion
59	17.01.2023	Previous year question discussion
60	18.01.2023	Previous year question discussion
Extra class	20.01.2023	Previous year question discussion

12/9/22

Signature of the Faculty

Signature of the HOD