

"PVC" NSSK Govt. Polytechnic Bilaspur at Kalol
Lecture Planning (Theory)

Branch : Electrical Engg.

Subject : ELECTRICAL TESTING AND COMMISSIONING

Teacher : Jyoti Bala

Semester: 5th

Session: AUG- DEC, 25

Cass Room :

Sr. No.	No. of Lectures	Chapter/ Unit Description	Detail of Contents	Reference Resources	Remarks
1.	1-16	Electrical Safety and Insulation	Do's and don'ts regarding safety in domestic electrical appliances as well for substation/power station operators, Electrical safety in industry/power stations/ substations at the time of operation/ control/maintenance. Fire detection alarm, fire-fighting equipments Factors affecting life of insulating materials. Measuring insulation resistance by different methods such as i) Polarization, ii) Dielectric, absorption, iii) Megger and to predict the condition of insulation	R1,R2, R3,R4	
2.	17-30	Installation and Erection	Concept of foundation for installation of machinery. Requirements of foundation for static and rotating electrical machinery. Concept of leveling and aligning Procedure for leveling and aligning alignment of direct coupled drive, effects of mis-alignment Installation of transformer and procedure of installation of transformer, Requirements of installation of pole mounted transformer	-do-	
3.	31-50	Testing and Commissioning	Concept of testing, Objectives of testing. Roles of I.S.S. in testing of electrical equipment, Types of tests and concepts, Routine tests, type tests, supplementary test, special tests, Methods of testing - Direct/Indirect/Regenerative testing. Tolerances for the various items for equipment - transformer, induction motor, dc motor, synchronous machines Commissioning, Tests before Commissioning for transformer, induction motor, alternator	-do-	
4.	51-64	Troubleshooting Plans	Internal and external causes for failure / abnormal operation of equipment. List of mechanical faults, electrical faults and magnetic faults in the electrical equipment, remedies, applications Use of tools like megger, earth tester and growler.	-do-	

5.	65-80	Maintenance	Concept of maintenance, types of maintenance, routine, preventive and breakdown maintenance. Causes of failure of electrical machines. Preventive maintenance-procedure or developing maintenance schedules for electrical machines. Factors affecting preventive maintenance schedules, Concept of TPM, Pillars of TPM Identification of different types of faults developed such as mechanical/ electrical/ magnetic faults.	-do-	
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Signature of Teacher with Date

Signature of HOD (EE)

Reference Resource:

1. Deshpande. M. V. PHI Learning Pvt. Ltd., 2010, Design and Testing of Electrical Machines ISBN No 8120336453, 9788120336452.
2. R-2. Rao, B V S Asia Club House, First Reprint, 2011, Operation and Maintenance of Electrical Equipment VolII, ISBN No 8185099022
- R-3. Rosenberg. Mc GRAW-HILL, 1 st Edition, May 2003, Maintenance and Repairs, ISBN No 9780071396035
- R-4. Sharotri, S.K. Glencoe/ Mcgraw- Hill; 2ndEdition , June 1969; Preventive Maintenance of Electrical 25 Apparatus, ISBN No 10: 007030839X 13: 978-0070308398