

DEPARTMENT OF ELECTRICAL ENGINEERING**EEEEVAC01- Testing of Electrical Apparatus****Unit 1 Installation of Electrical Apparatus**

Inspection of Electrical Equipment at site, Storage Electrical Equipment at site, Foundation of Electrical Equipment at site, Alignment of Electrical Machines, Tools / Instruments necessary for installation.

Unit 2 Installation and Commissioning of Rotating Electrical Machines

Degree of protection, cooling system, enclosures, rating of industrial rotating electric machine, installation, commissioning and protection of induction motor and rotating electric machine, dying out of electric rotating machine, insulation resistance measurement, site testing and checking, care, services and maintenance of motors.

Unit 3 Testing of Transformers

Routine and special tests, Measurement of winding resistance; Measurement of voltage ratio and check of voltage vector relationship; Measurement of impedance voltage/short-circuit impedance and load loss; Measurement of no-load loss and current; Measurement of insulation resistance; Dielectric tests; Temperature-rise, Insulation and HV test, dielectric absorption, switching impulse test. Testing of current transformer and voltage transformer, power transformer, distribution transformer.

Unit 4 Switch gear and protective devices

Standards, Classification, specifications, rating and duties of CB, installation, commissioning tests, Maintenance schedule and routine tests.

Unit 5 Safety Management during Operation and Maintenance

Clearance and Creepage, electric shock, need of earthing, different methods of earthing, factors affecting the Earth Resistance, methods of measuring the earth resistance, equipment earthing and system grounding.

Experiments:

1. Measure insulation resistance of a winding / cables / wiring installation.
2. Perform various tests on insulating oil.
3. To carry out routine tests on a given contactor used in the 3-phase supply.
4. To find out Phase shift in a transformer.

References:

- Paul Gill, “Electrical power equipment maintenance and testing”, CRC Press, Boca Raton 2008. (e-book: 2016)
- Rao, “Testing, commissioning, operation and maintenance of electrical equipment”, 6/E., Khanna Publishers, New Delhi, 1991.
- Singh Tarlok, “Installation, commissioning and maintenance of Electrical equipment”, S.K. Kataria and Sons, New Delhi, 1998.