



**MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR**  
(A Govt. Aided UGC Autonomous & NAAC Accredited Institute Affiliated to R.G.P.V., Bhopal MP)

## **DEPARTMENT OF ELECTRICAL ENGINEERING**

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### **BASIC ELECTRICAL & ELECTRONICS ENGINEERING LAB (100022)**

#### **LIST OF EXPERIMENTS**

1. To verify Kirchhoff's Current Law & Kirchhoff's Voltage Law.
2. To verify Superposition & Thevenin's Theorem.
3. To determine resistance & inductance of a choke coil.
4. To determine active & reactive power in a single phase A.C circuit.
5. To determine voltage ratio & current ratio of a single phase transformer.
6. To determine the polarity of a single phase transformer.
7. To perform open circuit & short circuit test on a single phase transformer.
8. To study multimeter & measure various electrical quantities.
9. To study of constructional details of DC machine.
10. To determine the V-I characteristics of diode in forward bias & reverse bias condition.



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### **INSTRUCTIONS TO STUDENTS**

#### **Pre-lab activities:**

- Prepare observation note book which contains the following:
  - Aim/Apparatus Required /Procedure/Observation table/ precautions for the allotted experiment informed in the previous lab class
  - Refer the relevant topics covered in theory class

#### **In-lab activities:**

- Be caution while designing the circuits and while handling the Transformers.
- Avoid parallax errors while calculating the values.
- Note down corrections made during the lab session.
- Answer to viva-voce.
- Get the observation corrected.

#### **Post-lab activities:**

- Completed experiments should be recorded in the lab record and corrected within one week after completion of the experiment.
- After completion of every module, a test/viva-voce will be conducted, and assessment results will have weight in the final internal marks.

#### **General Instructions:**

- Student should issue meters etc. before going to the test bench (experiment bench).
- Student is only responsible for any damage caused to the equipment in the laboratory during his session.



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- If a problem is observed in any hardware equipment, please report to the lab staff immediately; do not attempt to fix the problem yourself.
- After completion of the experiment, components must be submitted properly to the lab Faculty.
- Please be considerate of those around you, especially in terms of noise level. While the lab area is a natural place for conversations regarding designing the circuit, kindly keep the volume turned down.



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### **Do's and Don'ts in Laboratory**

- ✓ **Before starting Laboratory work follow all written and verbal instructions carefully.**
- ✓ **Do not handle any equipment before reading the instructions /Instruction manuals.**
- ✓ **If you do not understand a direction or part of a procedure, ask your concern teacher before proceeding with the activity.**
- ✓ **Do not make any circuit changes or perform any wiring changes when power is ON.**
- ✓ **Read carefully the power ratings of the equipment before it is switched ON.**
- ✓ **Do not forcefully place connectors to avoid the damage. Observe type of sockets of equipment/power to avoid mechanical damage.**
- ✓ **Conduct yourself in a responsible manner at all times in the laboratory. Don't talk aloud or crack jokes in lab.**
- ✓ **Observe good housekeeping practices. Replace the materials in proper place after work to keep the lab area tidy.**
- ✓ **Remove dangling (bracelets etc.) jewelry during conduction of experiment.**
- ✓ **Be aware of all safety devices.**