

AARUPADAI VEEDU INSTITUTE OF TECHNOLOGY, PAIYANOOR



DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

STANDARD OPERATING PROCEDURE

Name of the Lab./facility	Control and Instrumentation Lab
Name of the equipment	ANDERSON'S BRIDGE
Purpose	To help the students to acquire knowledge about the use of ANDERSON'S BRIDGE for measuring the value of inductance
Scope	The value of unknown inductance can be measured by using the resistance parameters of different values in the bridge circuit close to ± 2 %
Responsibility	Faculty Incharge of the facility, HOD/EEE

STANDARD OPERATING PROCEDURE

- The connections should be given as per the experiment to be performed referring to the lab manual
- Connections thus given shall be verified by the course instructor or lab in-charge.
- Switch on the trainer kit & connect the unknown inductance in the arm marked R₁.
- Observe the sine wave at the secondary of the isolation transformer by using CRO.
- Vary the resistance R from minimum position in a clockwise direction.
- Connect the CRO between the ground & the output point and check for the balance condition.
- For further fine balance vary the resistance r₁ which will compensate for the resistive component of the inductor.
- Remove the wiring and measure the values of R and r₁ using DMM.
- The above steps are repeated for different values of unknown inductance.
- On completion of the experiment, kit should be switched off and the connections should be removed.

PRECAUTIONS TO BE FOLLOWED

• Care should be taken that the experiment is conducted under balance condition.

- Laboratory Manual containing the experiments that can be performed with the equipment
- Maintenance Record



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STANDARD OPERATING PROCEDURE

Name of the Lab./facility	Control and Instrumentation Lab
Name of the equipment	SCHERING BRIDGE
Purpose	To help the students to acquire knowledge about the A.C use of SCHERING BRIDGE for measuring the value of unknown capacitance
Scope	The value of unknown capacitance can be measured by using the resistance of different values in the bridge circuit and hence the quality factor can be calculated
Responsibility	Faculty Incharge of the facility, HOD/EEE

STANDARD OPERATING PROCEDURE

- The connections should be given as per the experiment to be performed referring to the lab manual
- Connections thus given shall be verified by the course instructor or lab in-charge.
- Set the value of given capacitance.
- Set the fixed resistance R2.
- Vary the resistance value or R1.
- Switch off the kit and remove the terminals from R1 and measure R1.
- Calculate the value of capacitance and quality factor.
- The above steps are repeated for different values of unknown inductance.
- On completion of the experiment, kit should be switched off and the connections should be removed.

- Laboratory Manual containing the experiments that can be performed with the equipment
- Maintenance Record



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STANDARD OPERATING PROCEDURE

Name of the Lab./facility	Control and Instrumentation Lab
Name of the equipment	WHEATSTONE BRIDGE
Purpose	To help the students to acquire knowledge about the use of DC WHEATSTONE BRIDGE for measuring the value of the resistance
Scope	To find the value of the resistance by suitable bridge connections and compare it with the value measured by the multimeter.
Responsibility	Faculty Incharge of the facility, HOD/EEE

STANDARD OPERATING PROCEDURE

- The connections should be given as per the experiment to be performed referring to the lab manual
- Connections thus given shall be verified by the course instructor or lab in-charge.
- The unknown resistance Rx is connected.
- The variable resistance is varied to show the galvanometer zero to make the bridge under balanced condition.
- After getting null indication, switch off the supply and find the variable resistance value using multimeter.
- Repeat the same steps for various resistance values.
- On completion of the experiment, kit should be switched off and the connections should be removed.

PRECAUTIONS TO BE FOLLOWED

• Care should be taken that the experiment is conducted under balance condition i.e there should be no current flow through the galvanometer

- Laboratory Manual containing the experiments that can be performed with the equipment
- Maintenance Record



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STANDARD OPERATING PROCEDURE

Name of the Lab./facility	Control and Instrumentation Lab
Name of the equipment	THERMO COUPLE
Purpose	To help the students to acquire knowledge about the THERMO COUPLE for measuring the value of temperature
Scope	THERMO COUPLE is used in measurement of temperature
Responsibility	Faculty Incharge of the facility, HOD/EEE

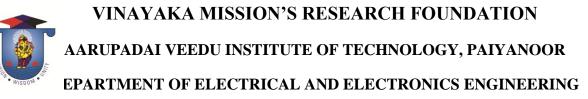
STANDARD OPERATING PROCEDURE

- The connections should be given as per the experiment to be performed referring to the lab manual
- Connections thus given shall be verified by the course instructor or lab in-charge.
- Supply is switched on.
- The temperature is controlled for various values.
- Hence the temperature increases the voltages
- Equivalent values of temperature and voltage reading are noted.
- The graph is plotted between the voltage and temperature values
- On completion of the experiment, supply should be switched off and the connections should be removed.

PRECAUTIONS TO BE FOLLOWED

• Care should be taken that the experiment is conducted with gradual increase in voltage as the temperature is increased .

- Laboratory Manual containing the experiments that can be performed with the equipment
- Maintenance Record





STANDARD OPERATING PROCEDURE

Name of the Lab./facility	Control and Instrumentation Lab
Name of the equipment	LVDT (Linear variable differential transformer)
Purpose	To help the students to acquire knowledge about the operation of Linear Variable Differential Transformer
Scope	Linear variable differential transformer (LVDT) is a inductive transducer used to translate the linear motion into electrical signals
Responsibility	Faculty Incharge of the facility, HOD/EEE

STANDARD OPERATING PROCEDURE

- The connections should be given as per the experiment to be performed referring to the lab manual
- Connections thus given shall be verified by the course instructor or lab in-charge.
- Supply is switched on.
- Adjust the micrometer to read 200m. This position is called as end of transducer position.
- Adjust the span adjustment pot to read 10mm.
- Now adjust the micrometer. This position is called negative end of transducer position.
- No need to adjust any further for this as the displacement automatically reads -10.
- Repeat above two steps repeatedly till we get the absolute value.

PRECAUTIONS TO BE FOLLOWED

• Care should be taken that the experiment is conducted under end of transducer position.

- Laboratory Manual containing the experiments that can be performed with the equipment
- Maintenance Record