**Department of Mechanical Engineering**

**Mechanic Division**

**Spec. Laboratory - Torsion Lab. Report**

**Lab. Date: Number:**

**Name & Surname:**

**Lab. Instructor: Group/Sub-group:** ….. / ….

**Place of Lab:** B block Base floor – Mechanic Lab.

**Course Topic:** Torsion

**Subject:** Determination of shear modulus by torsion experiment

**Devices and Materials:**

- Torsion Sample (Steel and Brass)

- Angle and tork measurement device

- Torsion device

**Required:**

1. Polar moment of inertia of specimen which is known of dimensional properties will be calculated.(Eqn 2)
2. Shear stress and shear strain will be calculated for each torque and torsion angle values. Subsequently these values are written into Table 2 (Eqn5,6)
3. Excel graph will be drawn according to each shear stress and shear strain values. Slope of this graph will be obtained.

Slope of Excel graph is equal to shear modulus of material. Calculated shear modulus should be compared with its literature value

|  |  |  |  |
| --- | --- | --- | --- |
| Angle of Twist  (Radyan) | Torque (N.m) | Shear Stress | Shear strain |
| 0 | 0 | 0 | 0 |
| 0.005 |  |  |  |
| 0.01 |  |  |  |
| 0.015 |  |  |  |
| 0.02 |  |  |  |
| 0.025 |  |  |  |
| 0.03 |  |  |  |