



DIPLOMA IN MECHATRONICS

CENTRALIZED QUESTION BANK

1047234440 - MECHANICS OF MATERIALS

**DIRECTORATE OF TECHNICAL
EDUCATION GOVERNMENT OF
TAMILNADU**

DIPLOMA END SEMESTER / YEAR EXAMINATION – 2025

Course: Mechatronics

Subject : Mechanics of Materials.

QP Code : 1047234440

Time : 3 Hours

Date :

Session:

Max Marks: 100

Answer the following Questions

1. Measure the dimensions of ground MS flat/cylindrical bush using Vernier Caliper compare with Digital / Dial Vernier Caliper
2. Measure the diameter of a wire using micrometer and compare the result with digital micrometer
3. Measure the thickness of ground MS plates using slip gauges
4. Measure the height of gauge blocks or parallel bars using Vernier height gauge
5. Find the Young's Modulus, yield points, percentage elongation and percentage reduction in area, stress strain diagram plotting, tests on mild steel
6. Determination of Rockwell's Hardness Number for various materials like mild steel, high carbon steel, brass, copper and aluminum.
7. Find the impact strength of given specimen (mild steel & cast iron) using charpy test.
8. Find the impact strength of given specimen (mild steel & cast Iron) using Izod test
9. Determine the shear stress and modulus of rigidity of the given specimen using Torsion testing machine.
10. Tension test of spring to find modulus of rigidity, strain energy, shear stress and stiffness by load deflection method (Open or Closed coil spring)
11. Find the velocity ratio of the given gear train.
12. To study the gear tooth profile using gear tooth Vernier.
13. To study the types of gears used in different engineering applications.
14. To study the different belts used in belt drives with its application
15. To study effect of friction using different types of bearings.

Allocation of Marks

Sl. No	Description	Marks
1	Aim /Apparatus required	10
2	Procedure /Observation	30
3	Formula /Calculation	30
4	Result / Graph	20
5	Viva Voce	10
Total		100