

SYLLABUS :-

Expt. No. Titles of Experiments
1 Hardness measurements: Rockwell, Brinell, Vickers (Macro- and micro-hardness).
2 Tensile tests: Studying the effect of strain rate. Comparison of the stress-strain curves of Aluminium and mild steel. Determination of the Young's modulus by tension tests and by ultrasonic device.
3 Compression tests: Study of the effect of specimen size (h/D ratio) and effect of lubrication. Ring compression test.
4 Charpy Impact tests: Study of impact energy of steels at low and ambient temperatures, and observation of fracture surfaces.
5 Creep tests: Tensile creep test to obtain creep curve and time to rupture, and observation of fracture surfaces.
6 Fatigue test: Determination of S-N curve for a steel sample, and observation of fracture surfaces.
7 Fracture toughness test: Determination of fracture toughness by three point bend tests on single edge notch bend tests, and observation of fracture surfaces.
8 Upset Ring Test using hydraulic press forging to determine interface friction factor (m).
9 Forward slip in rolling and determination of no-slip angle, coefficient of friction (μ), Angle of Bite, maximum draft and maximum reduction.
10 Extrusion: Extrusion of lead at room temperature and study of flow lines.