

Subject : Workshop

Practical Exam.

First Sem. :Electronics & Telecom,Electrical,Chemical, I.T,

Bio Tech.& Bio. Med. Engg.

Second Sem.: Mechanical, Metallurgy, Civil, Mining, Computer Sc.

CARPENTRY:

Timber, Definition, Engineering Application, types of Wood, Seasoning and Preservation, Plywood, Ply boards,

Practical Work : T Lap Joint
End Lap Joint

FOUNDRY

Moulding sands, Constituents and Characteristics, Pattern, Definition Material, Types, Core Prints, Role of Gate runner, riser, core, casting defects like blow holes & cavities.

Practical Work : Mould of any pattern
Casting of Simple pattern

WELDING

Welding, Brazing and soldering process and their applications, Oxy- acetylene gas welding process, Type of flame & their application. Manual & Metal arc welding technique and equipment, AC & DC welding, Constituents and functions of electrode coating, welding positions, type of weld joints, Common welding defects.

Practical Work

- 1 Lap joint by Gas Welding
- 2 Square butt joint Arc Welding
- 3 Lap joint by Arc welding
- 4 Demonstration of brazing

METAL CUTTING

Introduction to machining and common machining operations. Cutting tool material, Definition of machine tools, specification and block diagram of lathe, Shaper, Drilling machine and grinder, Common lathe operations such as turning, parting, chamfering and facing. Quick return mechanism of shaper, Difference between drilling and boring, Files Material classification.

Practical Work

FITTING

- 1 Preparation of step cutting job, out of 5mm thick strip
- 2 Preparation of 'V' notch 'V' groove, out of 5 mm thick strip
- 3 Preparation of Male-Female joint out of 5 mm thick strip

TURNING

- 1 Job on Lathe with one plane turning chamfering operations.
- 2 Job on lathe with one step turning
- 3 Job on shaper for finishing two sides of a job
- 4 Drilling two holes of size 5mm and 12 mm diameter on job used/to be used for shaping

FORGING

Forging principle, Material, Operations like drawing, upsetting, bending and forge welding, use of forged parts.

Exposure to High tech Area: Exposure to high tech area like Plastic Injection Moulding, Die Casting, Diamond Cutting PCB Manufacturing, CNC manufacturing ,Latest Techniques in welding etc. Should be imparted through factory visit and audio-visual means.

Latest Techniques in Welding

Reference Book:

- 1 Chapman, W.A.J. and Arnold E., "Workshop Technology" Vol I, II & III Viva low price student Editions 1998
- 2 Chaudhary Hazra "Elements of Workshop Technology" Media Promoters & Publishers 1997
- 3 Raghuwanshi, B.S., "Workshop Technology" Vol I & II, Dhanpat Rai and Sons 1998.