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Batch : A2

Date :

Assignment No 1

Carpentry shop

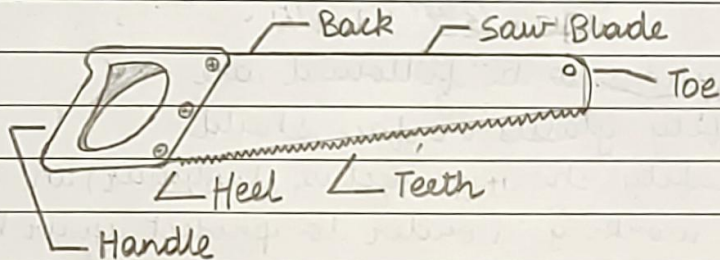
Q1) Write carpentry safety precautions.

Ans) The safety precautions to be followed are:-

- Always wear safety glasses or face shield.
- Always wear safety shoes (protective footwear) in workshop.
- Use gloves when working in order to protect your hands from splinters when handling wooden tools.
- Do not wear gloves near rotating parts or other machines where the fabric could stick.
- Wear safety apron and proper clothes while working in workshop.
- Ensure that all tools are in clean, sharp and good working condition, before working in order to prevent mishaps.
- Turn the power off / unplug the machines when you are changing blades, clearing, inspecting or adjusting a machine.
- Always maintain a proper discipline in the workshop.
- Avoid using tools without proper knowledge, always ask for help from the instructor whenever needed.
- Do not touch sharp objects with your naked finger.
- Do not carry sharp, pointed tools in your pockets.
- Keep your workshop surrounding neat, clean and organised.
- Make sure that the ~~gas~~ guard is in position and in a working condition.
- Wear necessary hearing protection while working in loud environment.

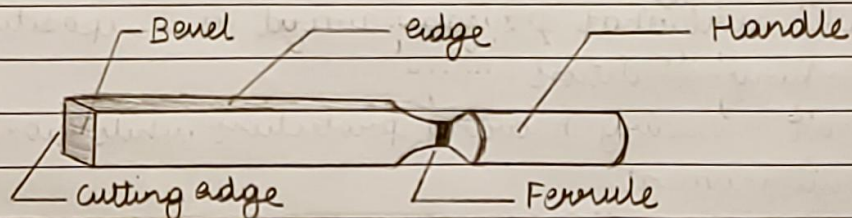
Q2) explain with neat sketch the following carpentry tools.

1. Hand saw:



In carpentry or woodworking, hand saws are also known as "Carpentry saw" or "panel saws". They are used to cut pieces of wood into different shape, size and forms. It is also used where fine finishing is required. As shown in the diagram, it consists of two vital things, the saw blade, which does the wood cutting job and the handle, from where the user applies force and guides the blade. The handle is generally plastic or wooden and the blade is made from a sheet of high carbon steel. It is operated by having a series of sharp pointed backward directional teeth which are harder than wood being cut.

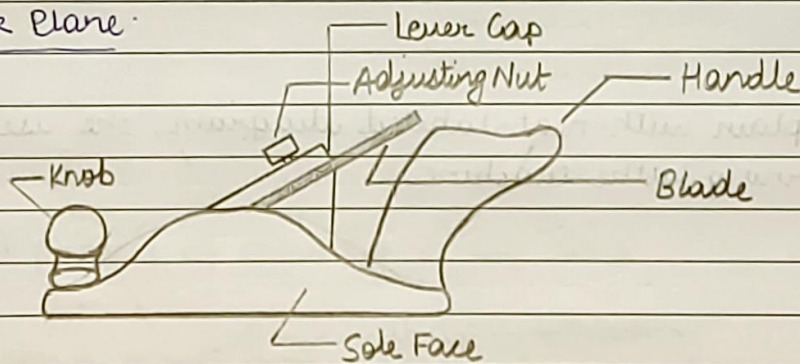
2. Firmer Chisel:



A chisel is a tool which has a characteristically shaped cutting edge of blade on its end for carving or cutting hard materials like wood or stone by hand. Firmer chisel has a blade with a thick rectangular cross section, making them stronger for use on tougher or heavier work.

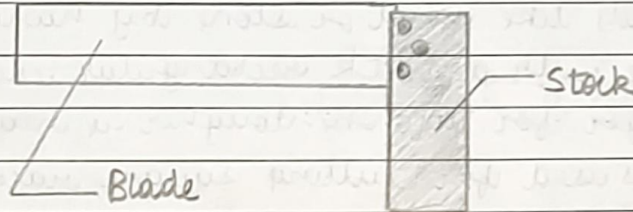
This chisel is used for cutting square vices (L shaped step) up for general purpose work. It consists of Handle, where the force is either applied by hand or hammer; Ferrule, it is provided in front of the handle to avoid cracking and the Blade; made from high carbon steel, it has a blade which is beveled at the end to form the cutting edge.

3. Iron Jack Plane



Iron Jack Plane is a general-purpose woodworking bench tool. It consists of Knob, Lever Cap, Adjusting Nut, Sole Face, Blade and handle. The Sole Face is the bottom part of the stock which is perfectly machined-flat. It is generally used for shaving off layer of wood to correct the thickness of the material. The thickness can be changed by adjusting the angle using the Nut and setting the blade at correct angle.

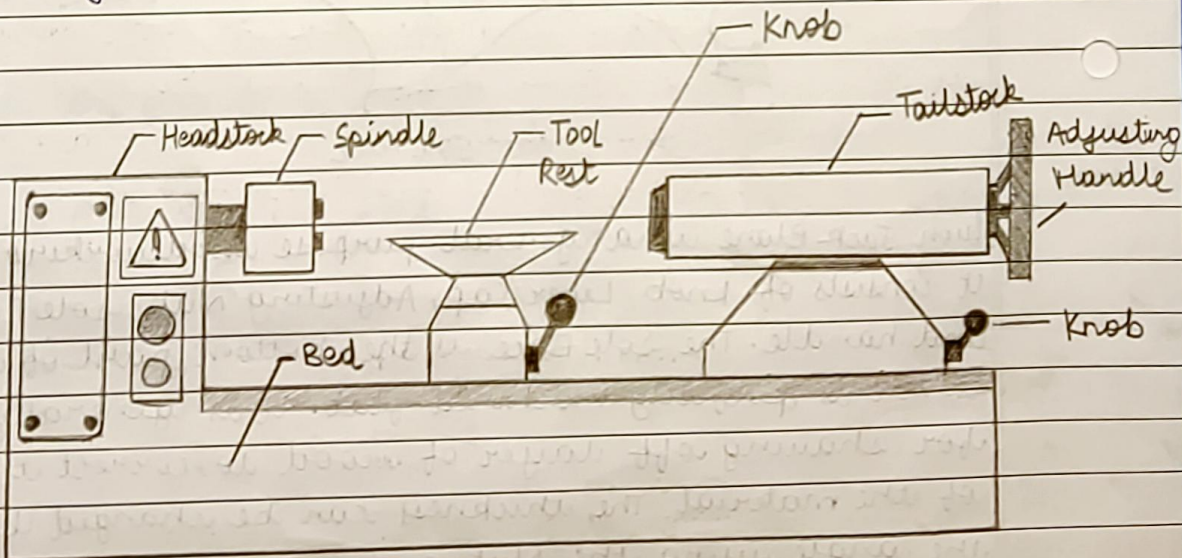
4.

Try Square

A Try-square is a woodworking tool used for making or checking 90° angles on pieces of wood. It is considered as one of the essential tools for woodworking. It consists of blade or stock which are joined together by the means of rivet joint at an angle of 90° . The stock also has a clearance groove to take sharp edges while measuring 90° .

Q3)

Explain with neat labeled diagram, the use of wood Turning Lathe Machine.



The Lathe Machine is an ancient tool. At the very early stage this machine was developed around 1300 BC at that time there were not so many parts except headstock & tailstock. It has evolved since then, a modern wood turning lathe machine consists of a iron bed, Headstock, Tailstock, spindle, Tool rest, adjusting knobs and speed controller.

They are typically used to shape various symmetrical wooden shapes, mostly cylindrical in profile. Objects which are usually crafted of lathes are furniture legs, wooden knobs, lamps, bats and other ornaments.

Wood lathe tools consist of various fixturing and securing devices for the workpiece, an adjustable tool rest and hand held cutting tools in form of long gauges, skewers, scrapers and chisels. In the most modern form of lathes, the complete system is automated using computers wherein the machine automatically ~~uses~~ prepares the final product.

Q4) Write the process of making 'T' Lap Joint.

Ans) Aim: To make a T-Lap joint.

Tools Required: Carpenter's vice, steel ruler, metal jack plane, Try square, marking gauge, G-clamp, hand saw, Firmer chisel, bevel square.

List of operations: Marking, Cutting, Planing, Joining.

Procedure:

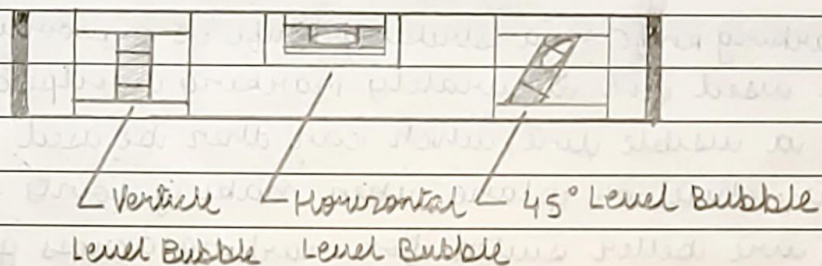
1. Check the given wooden block to ensure that it is of correct dimensions.
2. The wooden block is then clamped in the carpenter's vice & two adjacent faces are then planed using metal jack plane. and two face are checked for squareness and edge to be right angle using Try square.
3. Using marking gauge, mark 45 mm on the width side.
4. The excess material is first chiseled out with former chisel and then planed to correct size.
5. Using marking gauge, mark 20 mm on the thickness side.
6. The excess material is again first chiseled out then planed to correct size.
7. Using both try square & steel ruler mark a distance of 125 mm on the wooden piece & cut it into two equal pieces using cross cut saw.
8. Using steel ruler and try square mark a distance of 40 mm, 45 mm & 40 mm lengthwise on one piece of 125 mm length & cutting it using handsaw & then chisel it.
9. Mark a distance of 10 mm on the thickness side at a distance of 40 mm from one end of 125 mm work piece & cutting it using handsaw, & chiseling it.
10. Using ruler & try square mark a distance of 45 mm lengthwise on one end of the second piece & cut it using handsaw & chisel it.
11. Using ruler & try square mark 10 mm on the thickness side & cut it using hard saw & then chisel it.
12. At last join the pieces using mallet.

Q5)

explain with neat sketch carpentry marking or measuring tools.

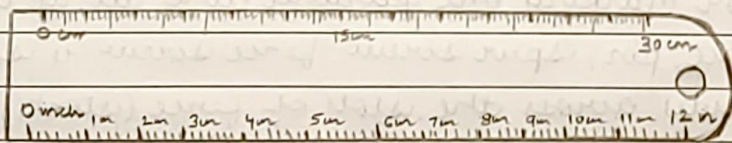
Ans)

Spirit Level



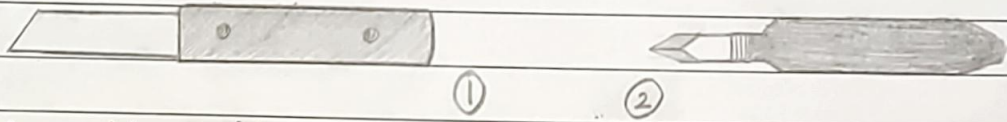
A spirit level or simply a bubble level is measuring instrument which is designed to indicate whether a surface is horizontal or vertical. A traditional carpenter's spirit level looks like a short plank of wood & after has a wide body to ensure stability. In the middle of the spirit level is a small window where the bubble & tube is mounted. It is after accompanied by a vertical & 45° level indicator.

Steel Ruler



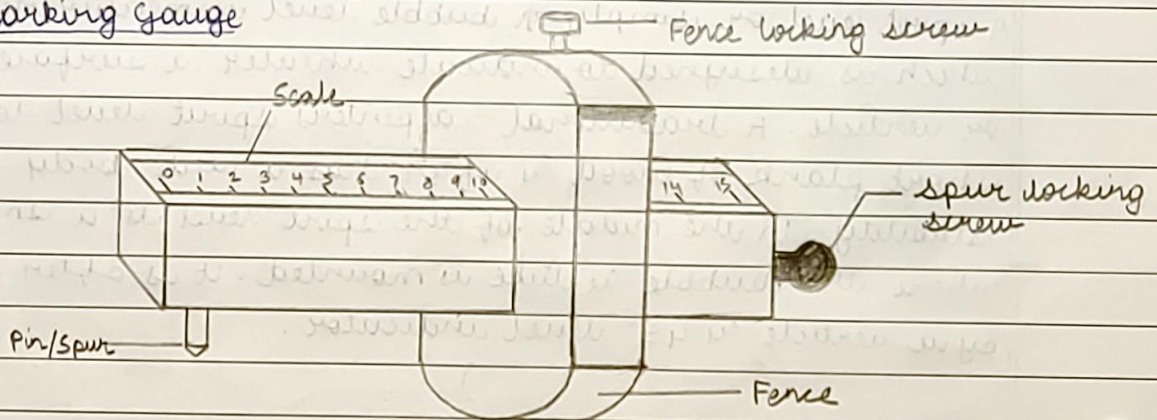
Steel Ruler or steel scale is a measuring tool which is one of the most important instrument. As the name suggests, its made from stainless-steel. The graduations are in cms & inches. The scale is available in different sizes which include 6 inches, 12 inches & 24 inches.

Marking Knife



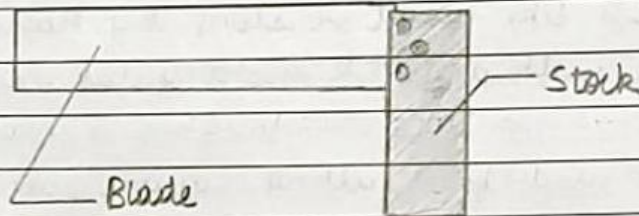
A marking knife or a striking knife is a woodworking layout tool used for accurately marking woodpieces. It is used to cut a visible line, which can then be used to guide hand saw, chisel or plane when making joints & other operations. They are better suited for marking across grain of wood.

Marking Gauge



It is used for marking one parallel line at a time. It consists of Fence, pin, spur screw, fence screw & scale. The scale stem slides across the slot of fence (stock). Graduations are made in the form of a scale. The thumb screw is used for locking the ~~stem~~ stem in place. It is used in joinery & sheet metal operations.

Try Square



A Try-square is a woodworking tool used for making & checking 90° angles on pieces of wood. It is considered one of the essential tools for woodworking. It consists of blade & stock which are joined together by the means of rivet joint at an angle of 90° . The stock also has a clearance groove to take sharp edges while measuring 90° .

