BHARTIYA SKILL DEVELOPMENT UNIVERSITY

School of Woodworking Skills

Session: 2021-22 (Summer Semester)

B. Voc. Program, 1st Semester,

Make - up Examination

Course Code: SCS1107 **Time: 2 Hours**

Course Name: Open Elective – I (DIY Furniture) **Max. Marks: 50**

Instruction:

1. Answer all question from section A, each question carries one mark.
2. Answer all question from section B, each question carries four marks.
3. Answer all question from section C, each question carries six marks.

Section – A

10X01 = 10 Marks

Q.1. Which one of the following is used to check 90^0?

(a) Marking gauge (b) Try square

(c) Chisel (d) Hammer

Q.2. Which one of the following is use to transfer angle from one piece to another?

(a)Try square (b) Marking gauge

(c) Double meter (d) Sliding bevel

Q.3. Which one of the following tool is used to sharp chisel?

(a) Flat file (b) Sharpening stone

(c) Both of these (d) None of these

Q.4. Which one of the following is the smallest measurement mark on a roll meter?

(a) Foot (b) Meter

(c) Inch (d) Millimeter

Q.5. Which one of the following is the soft wood.?

(a) Pine (b) Teak

(c) Acacia (d) Sal

Q.6. Which one of the following is the hard wood?

(a) Pine (b) Particle Board

(c) Steam Beach (d) None of these

Q.7 Which one of the following pencil is used for light measurement during transferring measurement on work piece?

(a) 0.7 mm (b) 0.5 mm

(c) 0.1 mm (d) 2 mm

Q.8. Which one of the following is a planning tool?

(a) Jack planner (b) screw driver

(c) Japanese pull saw (d) none of them

Q.9 Which one of the following is a marking tool?

(a) Manual hand planer (b) Perforated chisel

(c) Try square (d) None of them

Q.10. Which one of the following saw is used to make half lap joint?

(a) Indian saw (b) Japanese saw

(c) Coping saw (d) All of the above

Section – B

04X04 = 16 Marks

Q.11. Write any five differences between soft wood and hard wood.

Q.12 Define any four measuring tools in woodworking.

Q.13. Draw any six marking Symbols and write about their scopes.

Q.14. What is a carpenter triangle and explain its application with sketch?

Section – C

04X06 = 24 Marks

Q.15. What kind of safety precautions should be kept in mind while working with wood working workshop?

Q.16. Explain tenon and mortice joint with their neat sketch and also mention their two advantages and two disadvantages.

Q.17. Explain corner bridle joint with their neat sketch and also mention their two advantages and two disadvantages.

Q 18. Write short notes on:

(a) Chisels (b) Hammer (c) Hand saw (d) Files (e) Jack Planer

15.04.22

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Answer Key

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Section – A

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(a) Marking gauge (b) Try square

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Q.2. Which one of the following is use to transfer angle from one piece to another?

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(c) Double meter (d) Sliding bevel (d)

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Q.10. Which one of the following saw is used to make half lap joint?

(a) Indian saw (b) Japanese saw

(c) Coping saw (d) All of the above (d)

Section – B

04X04 = 16 Marks

Q.11. Write any five differences between soft wood and hard wood.

Ans.

Characteristics	Softwood	Hardwood
Source	Softwood is collected from conifer trees which are evergreen having needle-shaped leaves. these are generally gymnosperms.	Hardwood is obtained from deciduous trees (loses leaves in autumn). They are basically angiosperms.
Fiber	Less dense, strait fiber is found.	In case of hardwood, the fibers are quite close and dense.
Weight	Lightweight and softer than hardwood.	Heavyweight and harder than softwood.
Color	Softwood is light in color.	Normally these are dark colored woods.
Example	Pine, Redwood.	Oak, Steam Beech.

Q.12 Define any four measuring tools in woodworking.

Ans.

1. Steel Ruler - Steel ruler is suitable for measuring short distances. It measures distances accurately in the range of millimeter.
2. Vernier Caliper - It is mainly used for fine measurements in wood working. They ensure a precise measurement of inside and outside dimension as well as depth.
3. Double Meter - The foldable double meter consists of short strips of wood, plastic or metal which are connected by swivel joint.
4. Roll Meter - They are available in different length and designs. They ensure a measurement of exact length and circular work pieces.

Q.13. Draw any six marking Symbols and write about their scopes.

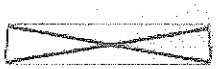
Ans.

1. **X - Cross -** The scope of this symbol is throughout cut and continuous separation cut.
   Example - Cutting off cuts.

2. **Wave Line** - The scope of this symbol is material cutting area.
   Example – Overlapping material removal.

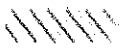
3. **Arrow** - The scope of this symbol is limitation of machining operations.
   Example - groove, Rebate.

4. **Cross** - The scope of this symbol is Mortice hole.
   Example - Hole for tenon and mortise joint.



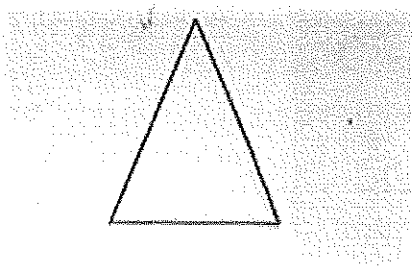
5. **Number** - The scope of this symbol is Indication of the depth of a mortice hole.
   Example - Indication of drilling depth, Indication of groove depth.

6. **Hatching** - The scope of this symbol is Material that is partially removed not throughout.
   Example - Hatching for notches.



Q.14. What is a carpenter triangle and explain its application with sketch?

Ans. We use symbols to combine work piece together. The symbol that is used to combine is called triangle sign. The aim of drawing symbol is that the individual parts of the work are evaluated at the same time and by each person. Sometimes we use the left part instead of the right part and the top part instead of the bottom because there are several identical pieces of the same size, so we need to number them accordingly and this can be done by making triangle sign. The sign should not be too small. It should be clearly visible. It should be drawn from the bottom to the top and from front to back.



Triangle

Section – C

04X06 = 24 Marks

Q.15. What kind of safety precautions should be kept in mind while working with wood working workshop.

Ans. The following are general safety procedures that apply to almost every work situation.

- Adhere to instructions.
- Read labels and warnings on containers and tools.
- Follow the manufacturer's recommendations for use and maintenance of a specific tool.
- Pay attention to signs posted in the work area.
- Follow the instructor's directions.
- Wear safety glasses in the shop at all times.
- Wear protective gear such as gloves, earplugs, and safety shoes if appropriate.
- Do not wear loose-fitting clothing that could get caught in a moving part.
- Wear a hair net to prevent long hair from getting caught in a tool.
- Keep work areas clean and free of clutter.
- Inspect each tool before using it to make sure it is working properly.
- Tell the instructor about any damaged tool.
- Do not use a tool that is not working properly.
- Return each tool to its proper place of storage.

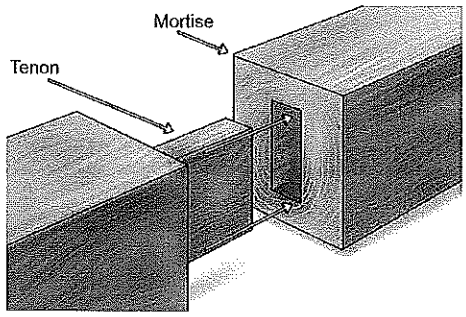
Q.16. Explain tenon and mortice joint with their neat sketch and also mention their two advantages and two disadvantages.

Ans. A mortise and tenon joint is a type of joint that connects two pieces of wood at usually angle of 90^0. Mortise and tenon are two components: the mortise hole and the tenon tongue. The tenon is cut to fit the mortise hole exactly and usually has shoulders that seat when the joint fully enters the mortise hole. The joint may be glued, pinned, or wedged to lock it in place.

A mortise and tenon joint is one in which the rectangular end (the tenon) of one piece fits into a rectangular hole (the mortise) of the same size, in the other piece. Mortise and tenon joints are made in a number of different types. The blind mortise and tenon is the most common. It is used extensively in cabinetmaking for joining rails to legs or stiles, and in many other constructions well. When properly designed, proportioned, and well made, mortise and tenon joints are strong and neat in appearance.

Advantage – 1. Very good strength for heavy doors and gates.
2. It is both simple and strong.

Disadvantage – 1. Complex production while mortise hole.
2. Higher accuracy required to produce this joint.



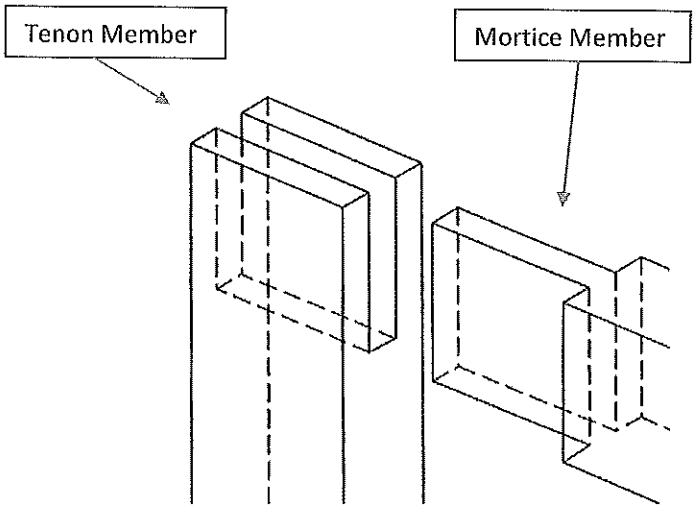
Q.17. Explain corner bridle joint with their neat sketch and also mention their two advantages and two disadvantages.

Ans. A bridle joint is a woodworking joint, similar to a mortise and tenon, in that a tenon is cut on the end of one member and a mortise is cut into the other to accept it. The difference feature is that the tenon and the mortise are cut to the full width of the tenon member. The corner bridle joint joins two members at their respective ends, forming a corner. The bridle joint is very popular in workbench construction. This joint is very decorative and very stable for window frames.

A bridle joint is similar to a mortise and tenon woodworking joint, thought in most circumstances it would not be as strong. It is open ended mortise and tenon joint. A bridle joint is quick and easy to make, since most of the waste wood is removed with a saw.

Advantage – 1. Very good strength in compression
2. Simpler alternative to the mortise and tenon joint cause of no need mortise machine in narrow frame.

Disadvantage – 1. Outer visibility of joints.
2. If any gap remains in construction, then mechanical fastener or pin is often required.



Q 18. Write short notes on:

(a) Chisels (b) Hammer (c) Hand saw (d) Files (e) Jack Planer

Ans. (a) Chisels - Chisels are tools that can remove thick or thin shavings of wood. We can remove material by the chisel by cutting edge of blade on its end, for flat and carving. The handle is made of plastic and wood or blade of chisel are made of metal with a sharp edge in it. Chiseling use involves forcing the blade into some material to cut it. The driving force may be applied by pushing by hand, or by using a mallet or hammer.

(b) Hammer – A hammer is a tool that delivers a sudden impact to an object. These are hand tools used to drive nails, fit objects. Hammers vary in shape, size, and structure, depending on their purposes. **Application** – Punching, Striking and Pulling.

(c) Hand saw - Hand saw is designed to cut hard and soft wood. Saw is used to make straight cuts across the grain and along the grain of the wood. A hand saw has a long, wide blade which usually cannot be removed from the handle. The teeth of a saw are pointed like a knife

and cut on both the forward and backward strokes as per the quality of the blade. Traditionally, hand saws would have either crosscut teeth (for cutting wood across the grain) or rip teeth (for cutting along the grain). Nowadays, most models have teeth that are able to do both. These are often referred to as "universal" or "utility" teeth.

(d) Files - Files are useful for forming and smoothing irregular shapes such as curves and cuts. They are classified by shape (triangular, half-round, round, and flat), length (6 in., 8 in., 10 in., and 1 2 in.), teeth design (single cut and double cut. The Flat Teeth coarseness wood to be filed must be put in a vice or other device to hold it firmly. Files should be held at a slight angle to the work, with filing done from the Heel Face Point edge to the center to avoid splintering the wood.

(e) Jack Planer – This is a hand tool with adjustable blade for smoothing or shaping pieces of wood and by the adjustment of blade we can increase or decrease the chips thickness. A jack planer has sharpening edge for efficient working is the edge is not sharp, then use of sharpening stones to sharp the edge.