

5.2 WOODWORK (444)



MANYAM FRANCHISE
Discover! Learn! Apply!

5.2.1 Woodwork Paper 1 (444/1)

- Keep the work under control by holding it firmly with the vice or clamps so that both hands are free to guide the tool.
- Do not use dull tools, they can slip and cause accident.
- make certain that handles are securely fastened on planes, hammers and files.
- Do not blow dust or chips off the work from the mouth of the plane.
- Always cut away from your body when using a knife or chisel.

Any $4 \times \frac{1}{2} = (2 \text{ marks})$

(b) Benefits of learning woodwork.

- Able to repair and maintain wooden items.
- Able to construct wooden items/furniture.
- Create job after school/employment.
- For leisure.

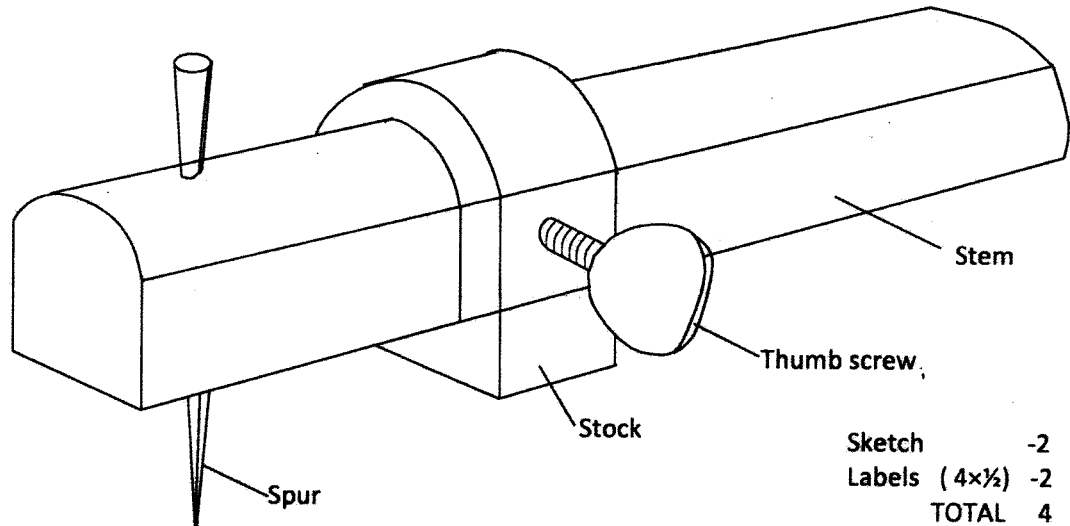
Any $2 \times \frac{1}{2} = (1 \text{ mark})$

2. Saw differences

Keyhole - has a narrow and shorter blade - 300 mm long and has ten(10) teeth per 25 mm.

Compass - has a wider and longer blade ^① 360 mm long with eight (8) teeth per 25 mm. ^①

3. (a) Sketching a marking gauge



(b) Steps required in surface preparation

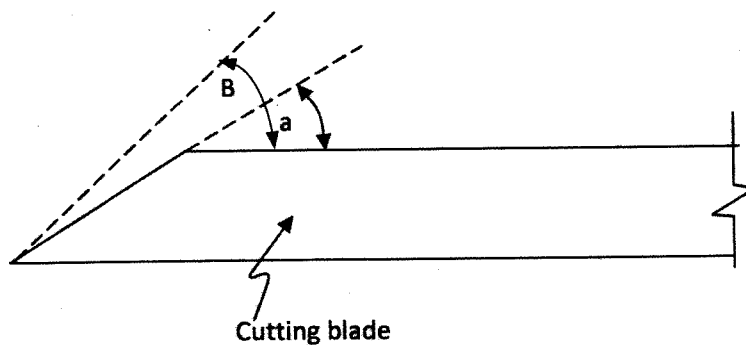
- Smoothen the surface.
- Sand
- Fill and raise the dents
- Sand

$4 \times \frac{1}{2} = (2 \text{ marks})$

4. **Functions of parts of a lathe**

- (i) Tail stock - supports the work by means of the cone shaped centre
 - to drill holes by means of a taper shank drill inserted in the hollow spidle.
 $1 \times 1\frac{1}{2} = (1\frac{1}{2} \text{ marks})$
- (ii) Head stock - carries the top set of pulley wheels.
 - accommodates the driving centre which rotates on the work.

5. (a) **Grinding angle/sharpening angle**



Sketch - 1
 Differences - 1
TOTAL 2

(b) **Reasons for using wooden handle**

- It provides a good grip
- It is light in weight
- It absorbs shock
- Does not generate too much heat due to friction

Any 4 x $\frac{1}{2} = (2 \text{ marks})$

6. (a) **Paring/ chopping**

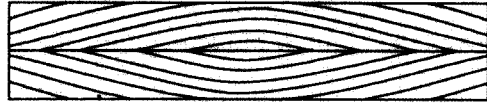
- Paring is the act of cutting thin sizes of wood either across or along the grains of wood using a paring chisel. (1 mark)
- Chopping is cutting across the grain to make an opening to cut a mortise to receive a tenon using a mortise chisel. (1 mark)

(b) **Counter sinking/counter boring**
Counter boring

- act of enlarging an already existing hole to accommodate $\textcircled{1}$ wood screw head and bolts $\textcircled{\frac{1}{2}}$
- done on top of a shank to receive a $\textcircled{1}$ countersunk or raise head screw. $\textcircled{\frac{1}{2}}$

7. (a) **Matching of veneers**

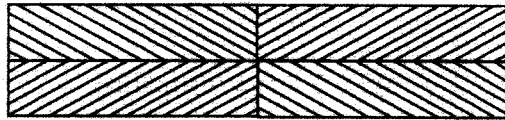
Side to side pattern



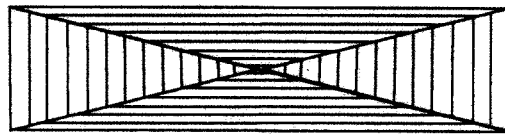
Sketch 1x1 -1



diamond pattern



Sketch 1x1 -1

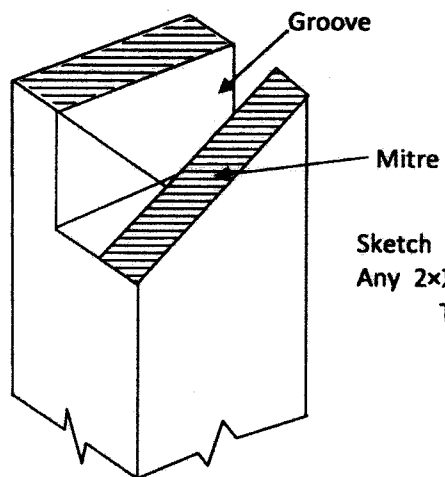
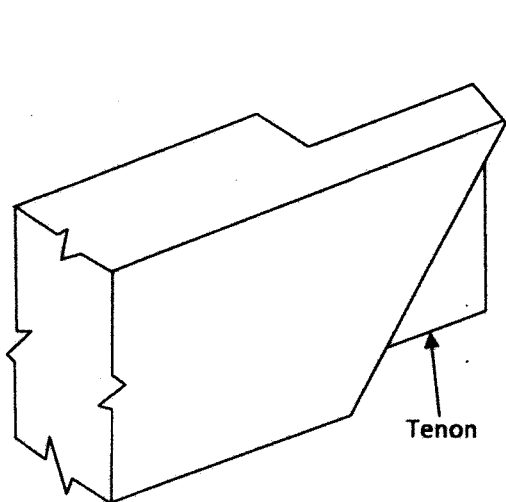


(b) **Safety precautions when using contact glue**

- keep away from fire as it is highly flammable.
- use nose mask to avoid inhaling
- ensure it does not come into contact with the body and cloth.

Any 2 x $\frac{1}{2}$ = (1 mark)

8. (a) **Exploded corner bridle joint**



Sketch -2
Any 2x $\frac{1}{2}$ -1
TOTAL 3

(b) **Reasons for considering direction of grain**

- Planing along the grains is easy
- Surface of wood becomes rough if planed against the grains
- The wood tears up and chokes the plane if planed against the grains.

Any 2 x $\frac{1}{2}$ = 1 mark

9. **Advantages and disadvantages of using paint**

Advantages

1. Hides defects
2. Gives a uniform colour
3. Variety of colours

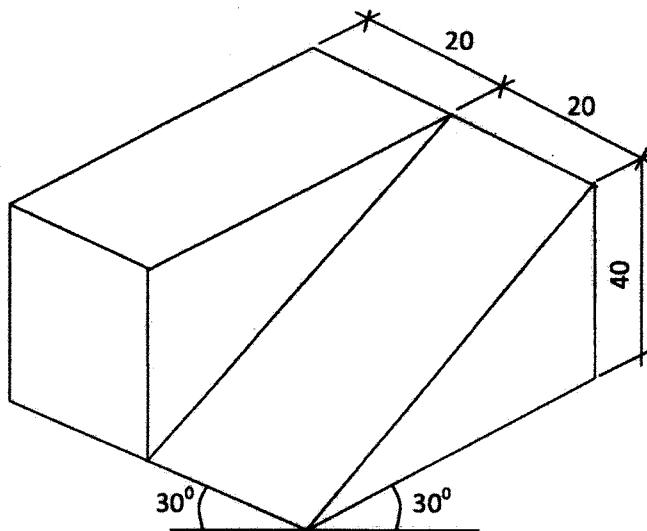
Any 2 x 1 = (2 marks)

Disadvantages

1. Does not expose timber texture
2. Does not give a high class finish
3. Not absorbed by timber cells and may peel off

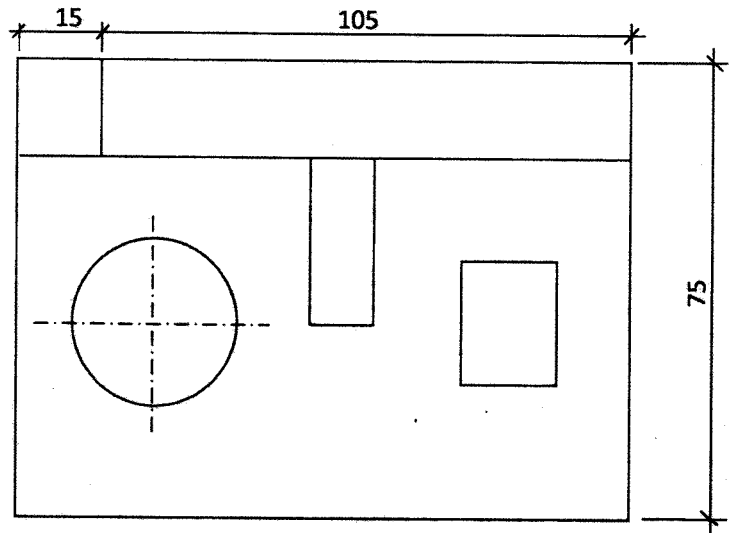
Any 2 x 1 = (2 marks)

10. **Isometric view of block**

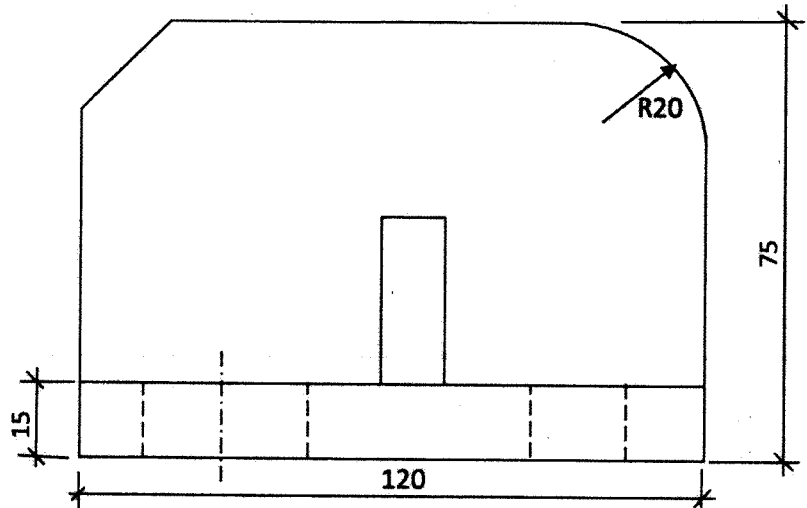
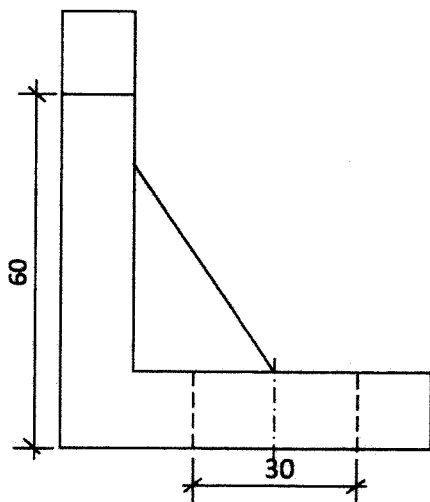


4marks

11.



PLAN



Elements:

Front elevation	$5 \times \frac{1}{2} = 2\frac{1}{2}$ marks
End elevation	$3 \times \frac{1}{2} = 1\frac{1}{2}$ marks
Plan	$6 \times \frac{1}{2} = 3$ marks
Hidden details	$3 \times \frac{1}{2} = 1\frac{1}{2}$ marks
Dimensioning	any $6 \times \frac{1}{2} = 3$ marks
Correct interpretation	$= 1\frac{1}{2}$ marks
Neatness	$= 1$ mark
Centre line	$= 1$ mark
Total	$= 15$ marks

12. (a) **Types of saw set**

- plier type $\frac{1}{2}$ mark
- notch type $\frac{1}{2}$ mark

- (b) - Mark the pieces to the required sizes of rebate
 - Set the plane to the required width
 - Set the required depth
 - Fix the pieces of timber on the vice/or hold the piece firmly on the bench
 - Start planing the rebate using slight strokes
 - Make full strokes until you reach to the required depth
 - Ensure uniform pressure is applied throughout

(7 marks)

(c)

Item	Description	No.				Materials
			L	W	T	
1	Side pieces	2	400	50	20	Cypress
2	End pieces	2	300	100	20	Cypress
3	Bottom piece	1	400	300	3	Plywood

(7 marks)

13. (a) **Items for a first aid kit**

- Bandages
- Scissors
- Antiseptics
- Cotton wool
- Pain killer
- Razor blade

Any 4 x $\frac{1}{2}$ = 2 marks

(b) (i) **Procedure of fixing lock**

- Mark the position of the lock
- Mark the position of the key hole
- Make recess for the lock
- Drill the key hole
- Extend the key slot using the key hole saw
- Locate the position of the lock screws
- Make pilot holes for the screws using the oval brad awl
- Fix the lock using the screws

(7 marks)

(ii) **Tools used for fixing lock**

- try square
- Marking gauge
- pencil/ cutting knife
- hand drill/brace
- keyhole saw
- screw driver
- Brad awl

Any 4 x $\frac{1}{2}$ = (2 marks)

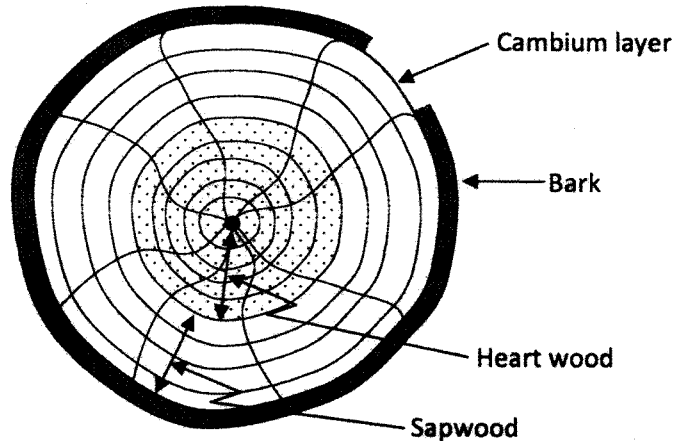
(c) **Characteristics of timber with dry rot**

- (i) Smell - a distinct mushroom like odour (damp and musty)
- (ii) Distorted wood surface - warped, sunken (concave) and/or with shrinkage cracks. Tapping with a hammer produces a hollow sound, and the wood offers no resistance when piced with a knife.

- (iii) The appearance of fruiting bodies (sporophores) in the form of a plate(skin) or 'bracket'.
 - (iv) The presence of fine rust-red dust, which is the spores from a fruiting body.
- 1 x 4 = (4 marks)

14. (a) **Conversion definition**
 - Sawing of logs of wood to marketable sizes. (1 marks)

(b) **Cross-section of a tree trunk:**
 Showing parts



Sketch -2
 Labels (4x½) -2
 TOTAL 4

(b) (ii) **Function of parts**

Bark - Protect the inner parts of a tree against:
 - extreme temperature changes
 - insects, fungi and animal attack
 - moisture evaporation from the tree

Cambium layer - develops cells that form the bark

Heart wood - storage for waste products, provides support for the tree

Sap wood - Conveys water and mineral salts from the roots to the leaves

4 x 1 = (4 marks)

(c) **Procedure of applying a varnish**

- (i) Prepare surface seal grain with thin coat of shellac if required.
- (ii) Apply first coat of varnish thinned to the correct consistency using long strokes of the brush along the grain.
- (iii) Dry for 18 - 24 hours, sand along the grain lightly with N^o glass paper and dust off.
- (iv) A second coat is applied and allowed to dry for 24 - 48 hours.
- (v) The workpiece is sanded as in step three above using sand paper N^o 400 waterproof dry paper.
- (vi) A third coat is applied and allowed to dry for 24 - 48 hours.

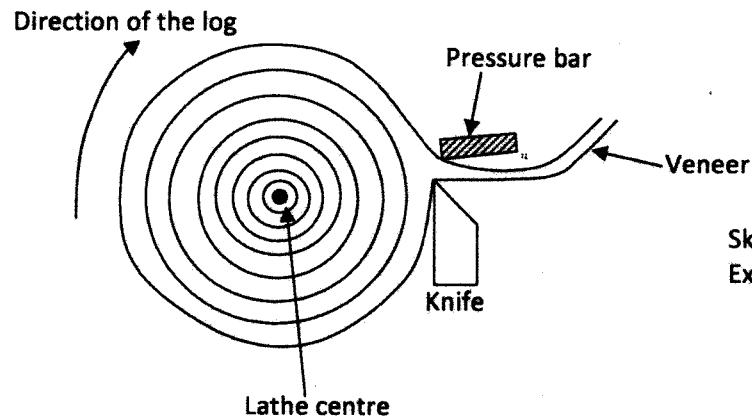
6 x 1 = (6 marks)

15. (a) Inlay is a method used in decorating furnisher by embedding wood or other kind of

material on the surface of wood i.e. making recess while overlaying is the method of decorating wood furnisher by gluing ornamental shapes made of wood, metal or plastic on to the surface of an article. (3 marks)

(b) Rotary method

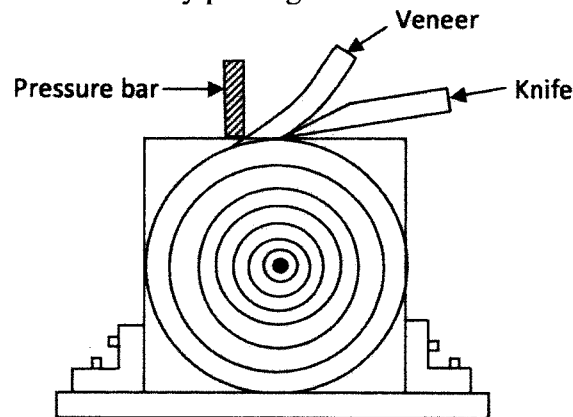
- rotate softened log in a peeling lathe
- strong and sharp knife fed into log till log is a perfected cylinder.
- continuous sheet of veneer is peeled from log.



Sketch -2
 Explanation -2
 TOTAL 4

(b) Plain slice method

- cut log into a square or rectangular section.
- secure timber to a machine bed.
- slice veneers by passing knife back and forth.



Sketch -2
 Explanation -2
 TOTAL 4

(c)

	Fault on a door	Cause of fault
1.	Door not closing	(i) Recess too shallow (ii) Protruding screwheads
2.	Door leaf not fitting	Recess too deep
3.	Leaf slamming onto the frame	Hinge recesses not of the same depth
	Any 2 x 1 = 2 marks	Any 2 x 1 = 2 marks