

4.16 WOODWORK (444)

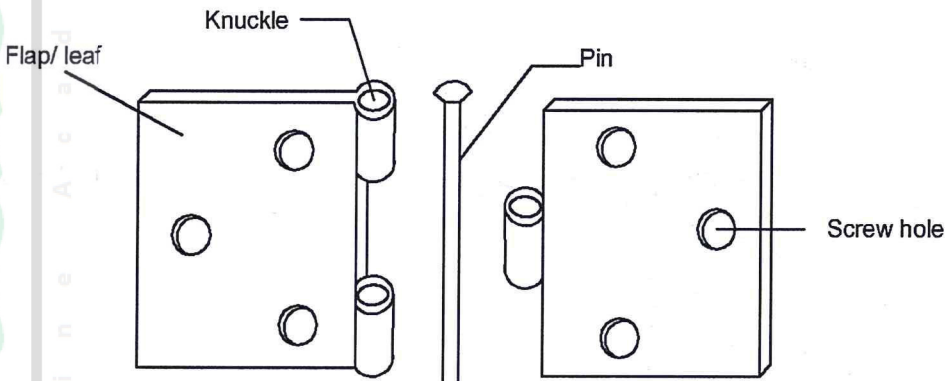
4.16.1 Woodwork Paper 1 (444/1)

1. (a)	Courses offered in vocational institutions <ul style="list-style-type: none"> - Carpentry and joinery - Building construction - Upholstery - Cabinet making - Painting and sign writing - Interior design 	<p style="text-align: right;">Any 2 x ½ = (1 mark)</p>
(b)	Principles of design Unity/ Harmony It is an arrangement among elements in a design such that they look as though they belong together.	(1 mark)
	Variety It is a variation on a visual theme causing contrast in design for example using of different thickness.	(1 mark)
2. (a)	Functions of a Vernier caliper <ul style="list-style-type: none"> - Measuring external dimensions. - Measuring internal dimensions. - Measuring depths of objects. 	<p style="text-align: right;">Any 2 x 1 = (2 marks)</p>
(b)	Disadvantages of large scale business <ul style="list-style-type: none"> - Complexity of managing the business. - High cost of human capital. - Decision making may take a long time. - Competition is high - Higher taxation. 	<p style="text-align: right;">Any 2 x 1 = (2 marks)</p>
3. (a)	(i) Advantages of Oilstones over Waterstones <ul style="list-style-type: none"> - Oilstones require less maintenance as they wear less rapidly. - Oilstones have lower long term costs. - Oilstones have an excellent edge. - Oilstones do not produce filing dust. - Oilstones have less friction as compared to water stones. - They are not prone to rusting 	<p style="text-align: right;">Any 3 x 1 = (3 marks)</p>
(b)	Grading <ul style="list-style-type: none"> - It is the categorization of timber into ranges of quality. - It considers the defects in timber, strength method of conversion among other factors. 	(2 marks)

4. (a)	Functions of a coping saw - To cut curves in wood and plastic with thickness not exceeding 15mm.	(1 mark)
(b)	Advantages of a coping saw - The blade can be rotated easily to cut the required shapes and curves. - The blade can be removed from the frame and turned or twisted. - The blades are cheap to replace.	Any 2 x 1 = (2 marks)

		(4 marks)
	<p>Correct -2 Labels 4x½ =2 Total = 4 marks</p>	

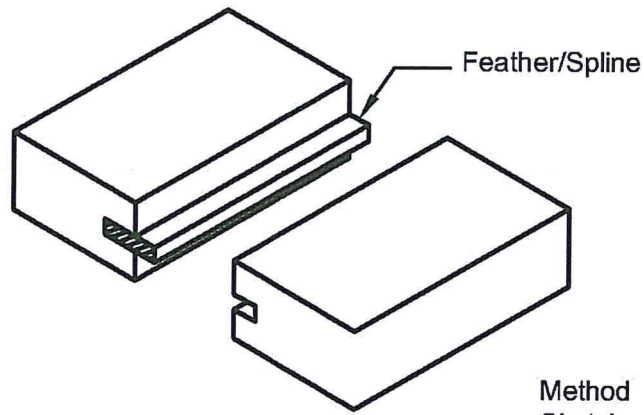
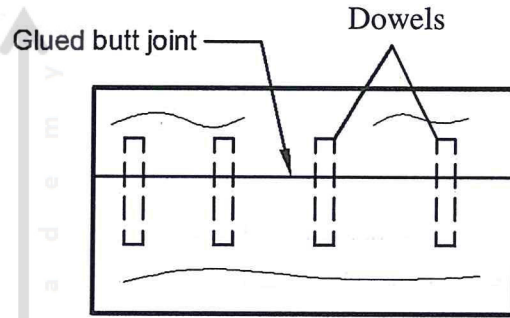
6. (a)	Tools used in veneering - Veneer hammer - Veneer saw - Veneer pins - Veneer tape - Knives - Shooting board - Cutting mat - Rules/straight edges	Any 4 x ½ = (2 marks)
(b)	Disadvantages of natural seasoning - Difficult to control the rate of drying. - Uneconomical as it takes a long time. - Difficult to obtain a uniform moisture content.	Any 2 x 1 = (2 marks)

7. (a)	<p>Types of natural glue used in woodwork</p> <ul style="list-style-type: none"> - Animal glue - Blood glue - Casein glue - Soya beans glue 	
Any 4 x ½ = (2 marks)		
7. (b)	<p>Parts of a butt hinge</p>  <p>A-leaf B-Knuckle C-Pin D- Screw hole</p> <p>4 x ½ = 2 marks</p> <p>A – leaf B – knuckle C – pin D – screw hole</p>	
Any 4 x ½ = (2 marks)		
8.	<p>Reasons for applying finish on a wood product</p> <ul style="list-style-type: none"> - For aesthetic purposes i.e. beauty. - To protect the wood surface from weathering. - To conceal certain defect. - To provide a cleanable surface. - To increase the durability of the product. 	
Any 4 x 1= (4 marks)		

9.

Methods of strengthening a glued widening joint

- Use of dowels (Doweled Joint)



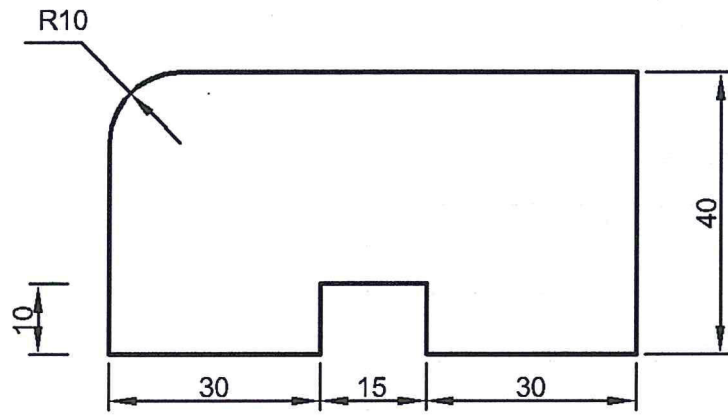
Method -1
Sketch -1
2x2=4 marks

- Use of splines or feathers

(4 marks)

Method - 1
Sketch - 1
2 x 2 =

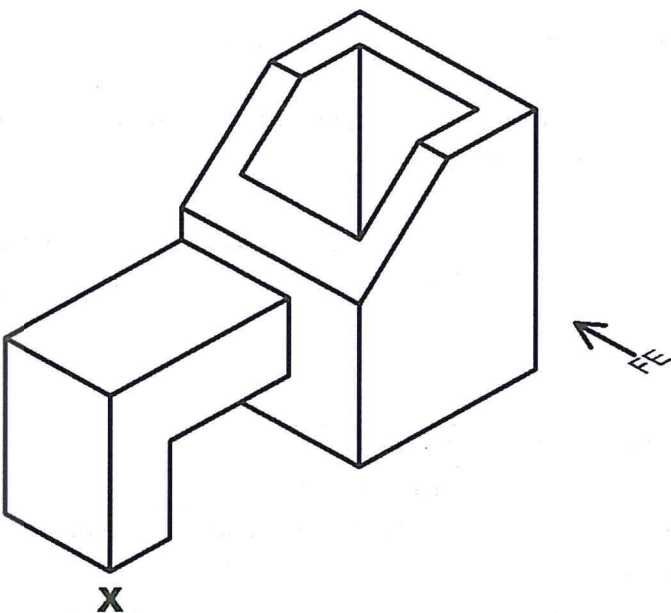
10.



- Scale - 1 mark
 - Correct drawing - 1 mark
 - Any 4 correct dimensions ($4 \times \frac{1}{2}$) = 2 marks
 - Dimension lines - $\frac{1}{2}$ mark
 - Arrow heads - $\frac{1}{2}$ mark
- 5 marks**

(5 marks)

SECTION B (60 MARKS)

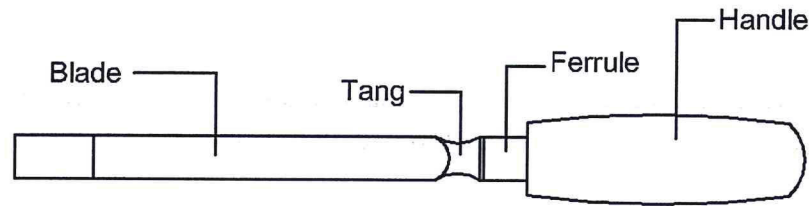
<p>11.</p>	 <p style="text-align: center;">X</p> <p>Scale 2:1 1 mark Isometric projection 1 mark Correct position at X 1 mark F.E correctly presented 4 marks E.E correctly presented 4 marks Plan correctly presented 4 marks <u>15 marks</u></p>	<p>(15 marks)</p>
<p>12. (a) (i)</p>	<p>Types of spoke shave</p> <ul style="list-style-type: none"> - Flat sole spoke shave - Uses:- Planing on a convex surface. <ul style="list-style-type: none"> - Planing narrow pieces is a straight line. - Round sole spoke shave Uses- Planing concave serves on timber. <p style="text-align: right;">Types – 2 x ½ = 1 Uses – 2 x 1 = 2 <u>3 marks</u></p>	<p>(3 marks)</p>
<p>(b)</p>	<p>Types of saw jigs and use of each</p> <ul style="list-style-type: none"> - Length gauge – used for quick and accurate repetition cutting to length in cross cut mode. - End grain jig – used when working on end grain. - Hold –down jig – used to hold down narrow pieces when rigging. 	

	<ul style="list-style-type: none"> - Bevel cutting jig – used when cutting a bevel with a saw. - Taper ripping jig – used when repeatedly ripping narrow work pieces that taper. - Bevel ripping jig – used when cutting bevels on materials wider than 450mm. - Outboard work support – used to support large panels when ripping in the table saw mode or when cross cutting long material. <p style="text-align: right;">Any 4 types (4 x 1) = 4 marks 4 uses of the 4 above (4 x ½) = 2 marks 6 marks</p>	(6 marks)				
	<p>(c) Difference between a rip saw and cross cut saw</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%; padding: 5px;">Rip saw</th> <th style="width: 50%; padding: 5px;">Cross cut saw</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;"> <ul style="list-style-type: none"> - Have 4 to 4½ teeth per 25 mm - Used for cutting along the grain. - Cut on the forward stroke only. - Have a length between 650 and 710mm. - Teeth are filed to give a chisel edge. </td> <td style="padding: 5px;"> <ul style="list-style-type: none"> - Have 7 to 9 teeth per 25 mm - Cut across the grain. - Cut a little on the return stroke. - Smaller in length – 600 to 660mm - Teeth filed to form a knife edge. </td> </tr> </tbody> </table> <p style="text-align: right; margin-top: 10px;">Accept sketches as solutions if provided Any 3 x 2 x 1 =</p>	Rip saw	Cross cut saw	<ul style="list-style-type: none"> - Have 4 to 4½ teeth per 25 mm - Used for cutting along the grain. - Cut on the forward stroke only. - Have a length between 650 and 710mm. - Teeth are filed to give a chisel edge. 	<ul style="list-style-type: none"> - Have 7 to 9 teeth per 25 mm - Cut across the grain. - Cut a little on the return stroke. - Smaller in length – 600 to 660mm - Teeth filed to form a knife edge. 	(6 marks)
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13. (a)	<p>Advantages of bleaching wood.</p> <ul style="list-style-type: none"> - It lightens dark wood to required hues. - It does not interfere with the wood fibers. - It does not require special equipment. - It enables change of the original color of wood entirely or partially. <p style="text-align: right;">Any 2 x 1 =</p>	(2 marks)				
(b)	<p>Procedure of administering First Aid treatment to a minor burn on the palm.</p> <ul style="list-style-type: none"> - Soak the burned portion in cold water. - Wash burned area in soapy water. - Dry gently. - Apply a sterile gauze over the burned area. - Bandage the burned area snugly. <p style="text-align: right; margin-top: 10px;">5 x 1 =</p>	(5 marks)				

	<p>(c) Processes carried out during maintenance of hand saws</p> <ul style="list-style-type: none"> - Topping It involves bringing all the teeth points in line. A long saw file is drawn over teeth. - Shaping This is restoring the teeth to their original shape and size. The file face is held level and square to the saw blade throughout the process. - Setting This is a bending the tips of the teeth to give the saw blade clearance when cutting. - Sharpening This is filing the cutting edges of all teeth with a file. <p style="text-align: right;">Processing = 4 Explanation – 4 x 1 = 4 <u>8 marks</u></p>	(8 marks)
14. (a)	<p>Procedure of preparing a timber surface for varnish.</p> <ul style="list-style-type: none"> - Complete the final sanding, remove dust, dirt or grease. - Sponge the surface with warm water and let it dry for twelve hours. - When dry, sand all surfaces with sand paper. - Apply a coat of varnish - Allow eight hours to dry and sand it lightly with medium sand paper. - If working on open grained wood, apply a paste filler and allow it to dry for twenty four hours. - Sand the filler coat with fine sand paper when dry. - Seal the filler with a coat of white shellac and when dry sand again with fine sand paper. - The timber surface is ready for varnishing. <p style="text-align: right;">Any 7 points</p>	(7 marks)

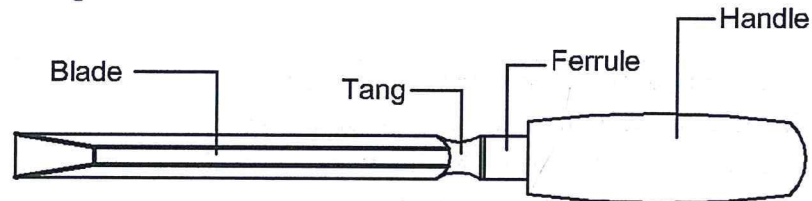
(b) **Difference between mortise and paring chisel**

Mortise Chisel



- Has deeper blades.
- Has parallel edges.
- Used to cut out mortises.

Paring Chisel



- Has beveled edges.
- Has longer blades.
- Used in situations where others are unable to reach e.g housing joints

Correct sketches - 2 x 2 = 4 marks

Differences – Any 2 x 2 x 1 = 4 marks

8 marks

(8 marks)

15. (a) **Types of manufactured boards**

(i) **Lamin board**

- It is a board having a core made up of strips of wood, glued to form a block which is further glued between two or more outer veneers.
- The direction of the grains of the core blocks is at the right angles to that of adjacent outer veneers.
- The strips in lamin board are less than 12mm thick.

(3 marks)

	<p>(ii) Chip board</p> <ul style="list-style-type: none"> - Consists of wood chips bonded together and pressed to make a uniform board. - It may be obtained but sometimes it is faced with a veneer. - It is difficult and unsatisfactory to cut joints in chipboard and it does not hold screws well. <p>Accept sketches if given as the solution.</p>	(3 marks)
	<p>(b) Procedure of making a housing joint</p> <ul style="list-style-type: none"> - Square two pieces of A and B using a try square. - Locate one side of the groove and square a line across the face of member B. - Place member A along the marked line and mark the width of the housing with a pencil or marking knife. - Mark the depth of the joint with a marking gauge. - Cut the sides of the joint ensuring that the saw cut is on the waste side. - With a sharp chisel, remove the waste material in the groove until the joint reaches the required depth. <p>A router plane can also be used to remove the waste.</p> <ul style="list-style-type: none"> - Using a depth gauge, test that the bottom of the joint is of the required depth. - Test to determine whether the parts fit accurately, if necessary trim the groove with a chisel – Assemble the two pieces A and B to form the joint. <p style="text-align: right;">9 x 1 =</p>	(9 marks)