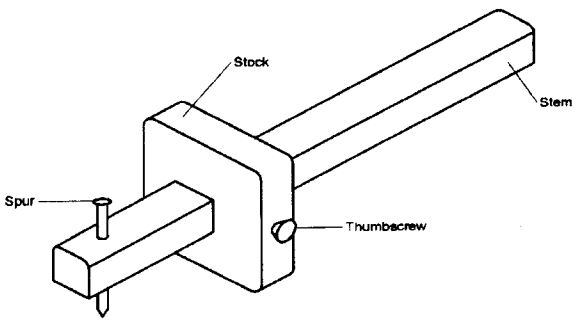
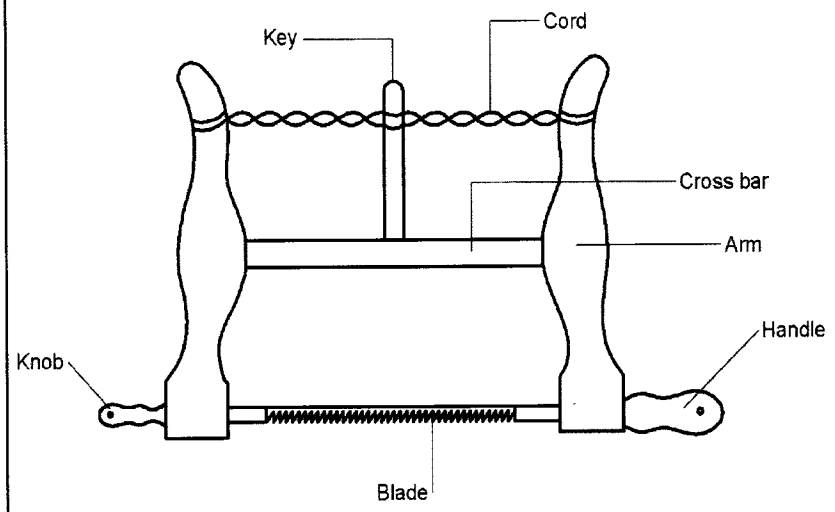
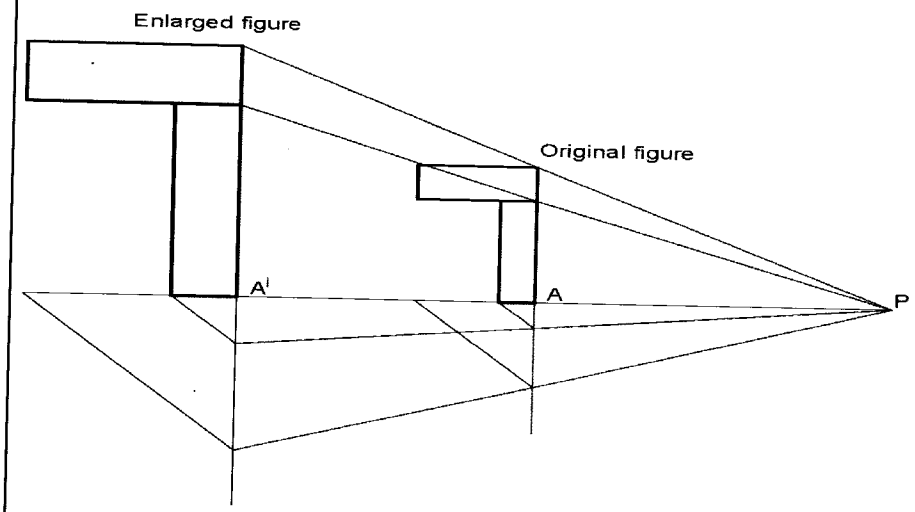
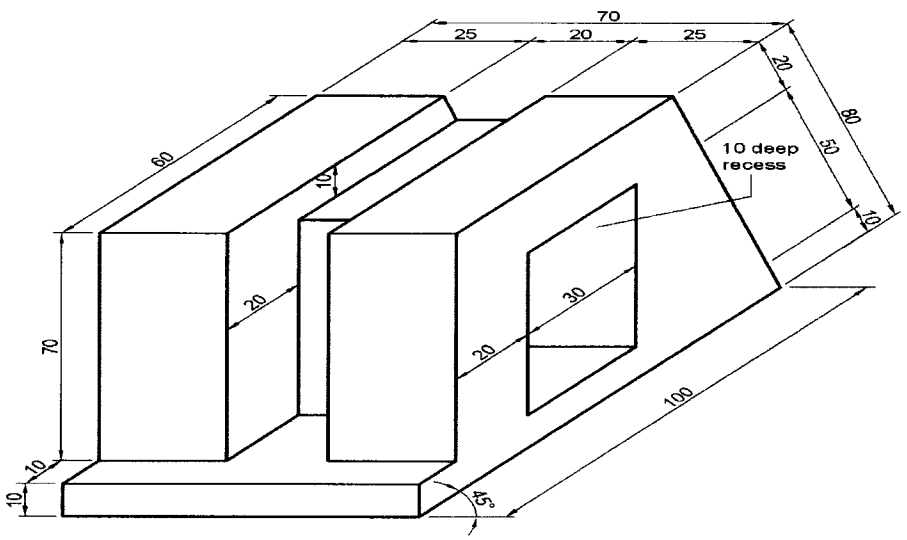
4.16 WOODWORK (444)

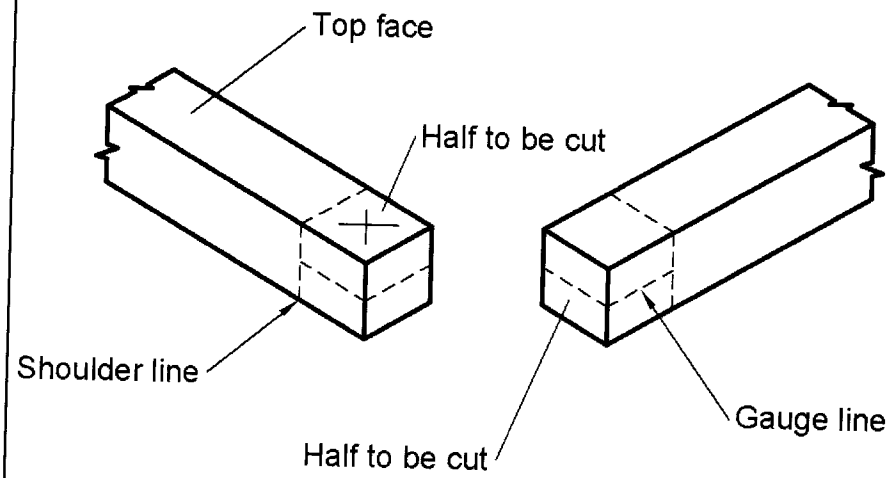
4.16.1 Woodwork Paper 1 (444/1)

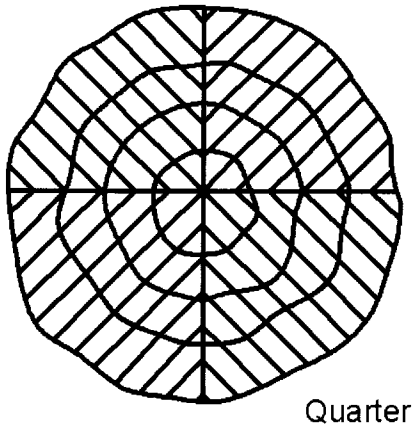
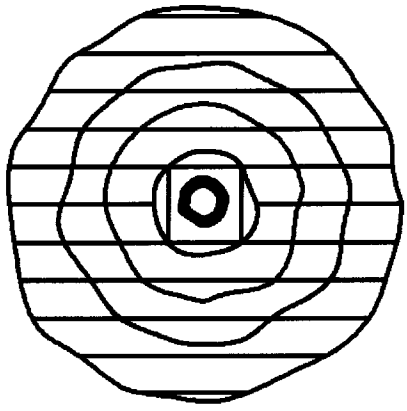
NO		DESCRIPTION	MARKS
		SECTION A	
1	a	Reasons for providing a hand tool store in a workshop – To prevent theft of hand tools – To control use of tools – To facilitate maintenance of tools – To ensure fast and only access of required tools **2 x 1**	**2 marks**
	(b)	Timber products manufactured by small scale industries – Furniture eg tables, chairs, beds – Cabinets – Doors – Windows – Ornaments carvings **(Accept any other correct answer)** **Any 4 x ½**	**2 marks**
2		Safety rules applicable to cutting tools – Do not use tools with loose or cracked handles – Never carry sharp tools in your pocket – Cutting tools must be properly sharpened and in good condition – Handle cutting tools in a manner as to protect yourself and others – Use cutting tools for the correct purpose **Any 4 x 1**	**4 marks**
3		Marking gauge  Correct sketch - 2 Labels – **4 x ½ = 2 marks**	**2 marks**

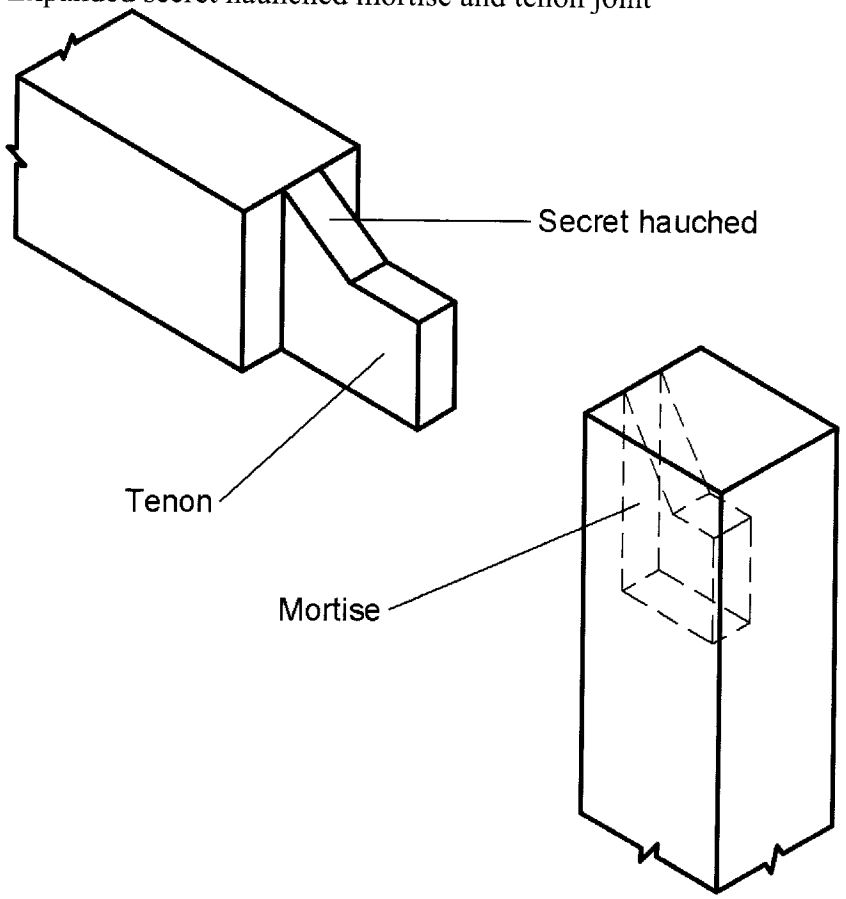
4		Parts of a bow saw  **6 x ½**	**3 marks**
5		Measures taken to ensure efficient planing when using a bench plane – Plane along the grain – Ensure that the cutting blade is sharp – Apply pressure evenly – Select the right type of plane for the job – Ensure the sole is well maintained and conditioned **Any 4 x 1**	**4 marks**
6		Advantages of artificial seasoning – The process is controlled hence quality can be achieved – The duration of seasoning is reduced – Shrinkage and cracking are minimized – The timber is not attacked by insects or fungi – The drying is even **Any 4 x 1**	**4 marks**
7		Identification of a hand tool: (i) Name – Firmer chisel (ii) parts: A- handle C Neck B – Ferrule D Blade **4 x ½** (iii) Used for general purpose benchwork eg cutting waste wood	½ **2 marks** ½ marks
8	a	Difference between inlays and overlays: – Inlays are solid or veneers set into a background and used as decorative features The background has to be cut and waste removed – Overlays are solid or veneers glued directly onto a solid timber surface without cutting the background	½ marks ½ marks

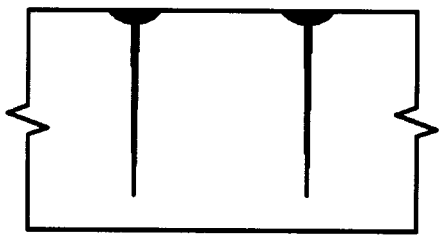
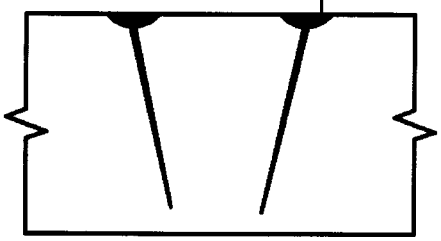
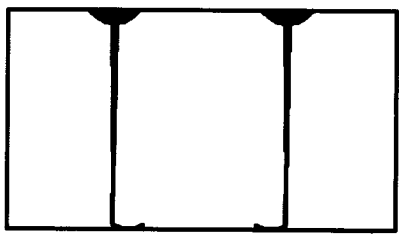
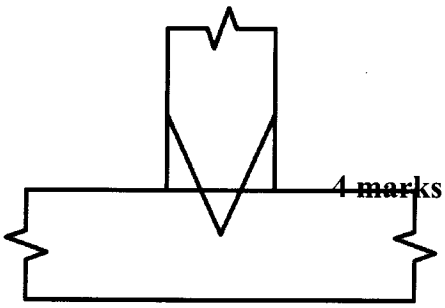
	b	Activities carried out during preparation of a wood surface: – Sanding – Removing glue or grease patches – Sealing knots or cracks or splits – Raising dents – Filling holes and cracks **any 4 x ½ marks**	**2 marks**
9		Advantages of using screws as fasteners – They can be easily removed when required – They provide a stronger joint owing to their threads – They rarely cause splitting of timber when driven in – They can be fixed without causing vibrations – They are available in a wide variety of materials eg steel, aluminium, brass, copper etc **Any 4 x 1**	**4 marks**
10		Enlarged figure  	

		SECTION B	
11		Oblique projection  Correct Oblique projection- 1 mark Any 10 faces @1 mark – 10 marks Use of correct dimensions-3 marks Linework - 1 mark Total - 15 marks	
12	a	Difference between bleaching and staining Bleaching – It is a process of lightening the colour of wood with chemicals – It lightens dark wood to a considerable extent – It lightens the fibre of the timber to the required shade. Staining – It is a process of enhancing the colour of a piece of timber – It amplifies the figure and grain of wood – It also highlights problems in the wood such as scratches or machine marks – It adds richness depth and colour to wood **2 x 2**	**4 marks**

	b	Procedure of measuring and marking out a corner halving joint – Square the ends of the two pieces of timber to be jointed – Mark the working faces – Measure the width of the joint on one piece and square the shoulder – Set a marking gauge to half the thickness of the material – Gauge round three sides of the joint on both pieces of timber – Mark the waste half to be cut with a distinct cross  	**11 Marks**
13	a	Elements of design (i) Line – It is a series of dots connected together – It is characterized by thickness, length and angle eg a bold line feels strong and masculine – A straight line feels manmade while a curved line feels natural or organic (ii) Colour This element is characterized by hue, value and saturation The brighter and more intense the colour, the heavier the element will feel. **2 x 2**	**4 marks**
	b	Procedure of adjusting an expansive bit: – Loosen the clamp screw which holds the cutter in place – Slide the cutter until the desired line on the scale corresponds with the centre mark on the clamp – Tighten the clamp screw to hold the bit firmly in place – Test the bit by boring a piece of waste stock – If not satisfactory, make further slight adjustment **(accept any point given if correct) 5 x 1**	**5 marks**

	c	Procedure of grinding the cutting blade of a smoothing plane – Set the tool square to the grinding wheel – Lay the blade on the tool rest, moving it from side to side and grind the edge straight and square just sufficiently to remove any gaps – Adjust the tool rest to grind at an angle of 25^0 – Lay the blade on the tool rest and moving it from side to side grind at this angle until the thick edge is almost removed – Hold the edge between the fingers and up to the light to view any remaining thick edge where further grinding is required – Tilt the blade sideways and with just a slight touch remove the sharp corners if necessary **6 x 1**	**6 marks**
14	a(i)	Methods of timber conversion Quarter sawing – The log is sawn radially from the pith or parallel to the rays – It produces good quality boards but is expensive and wasteful  Quarter sawing	
	(ii)	Plain sawing The log is cut tangentially to the growth rings The log is easily manipulated and there is minimal wastage  Plain sawing	**6 marks**

	b	Operations during preparation of a background (i) Toothing – It is scratching the surface of a background in order to tear and lift the fibres – The scratches should be regular not too deep and in at least two directions which cut across the grain – This preparation allows deeper penetration of the glue to key the bond – It may be carried out using a saw (ii) Sizing – It is coating the surface which has been toothed with a ‹ ·e coating of animal glue – The thin glue soaks quickly into the background to further enhance the keying effect – Sizing improves the workability of the veneer and limits the amount of moisture lost through absorption. (iii) Sanding – The coat of size seeks and stiffens the fibres created during toothing – These fibres should be removed by light sanding using coarse abrasive paper **3 x 3**	**9 marks**
15	a	Expanded secret haunched mortise and tenon joint  	**6 marks**

	b	Methods of nailing  Straight nailing  Angle nailing  Clenching  Toe nailing ~~4 marks~~	
	C	(i) Setting It is the process of bending the points of saw teeth to the sides in order to produce a proper kerf (ii) Procedure of setting a hard saw – Secure the saw in a saw vise or clamp – Beginning from the tow, bend every alternate tooth at appropriately half its depth – Reverse the saw – Bend the remaining teeth in the opposite direction **4 x 1**	**1 mark** **4 marks**