## ATTEMPT ALL QUESTIONS

1. The stools shown below can be assembled to form a cube.

(a) State a functional reason for the square hole on the top of each stool.
$\qquad$
(c) The plane shown below was used during the manufacture of the stool.


State the effect of the following on the blade.
(i) Turning the brass nut $\qquad$
$\qquad$
(ii) Adjusting the lever $\qquad$
$\qquad$

## 1. (continued)

(d) The sash cramp shown below was used during the manufacture of the stools.


State two adjustments that could be made to this tool.
Adjustment 1 $\qquad$
$\qquad$
Adjustment 2 $\qquad$
(e) A stool frame is shown below.


State two methods of ensuring the frame is "square"

1. $\qquad$
2. 
3. A child's desk made from plywood is shown below.

(a) The primary function of the desk is to provide a seat.

State two further functions of the desk.
1 $\qquad$
2 $\qquad$
(b) The designer used primary colours to paint the desk.

State one reason why primary colours were chosen.
$\qquad$
$\qquad$
(c) A cutting list was produced.
(i) State two pieces of information other than sizes that could be found in a cutting list.

1 $\qquad$

2
2. (c) (continued)
(ii) Plywood is a manufactured board.

Describe how plywood is constructed to give it strength. Sketches may be used.
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
(d) The circular work surface was cut out using a machine saw.

State the name of a suitable machine saw.
$\qquad$
(e) Knock down fittings were used in the assembly of the desk.

State one advantage of using knock down fittings over traditional joints.
$\qquad$
(f) Two colours of paint were used in the finishing of the desk.

State a method that would prevent the colours from running together.
$\qquad$
3. A wooden kitchen utensil is shown below.

(a) The utensil was manufactured on the machine shown

(i) State one advantage of using a revolving centre instead of a dead
$\qquad$
(ii) State the name of the tool used to turn the blank into a cylinder.
(iii) State the name of the tool used to check the diameters when
$\qquad$
(b) The utensil was sanded before removal from the wood lathe.

State two adjustments that should be carried out on the lathe before sanding.

1
2
(c) Vegetable oil was applied as a finish to the utensil.

State a reason why vegetable oil was chosen as the finish.
4. A wooden toy is shown below.


The peg was turned on a wood lathe.

(a) State two safety checks made to the wood lathe before switching it on.

Safety check 1
Safety check 2
(b) The tool shown below was used when manufacturing the peg.


Tool name $\qquad$
Tool purpose
4. (continued)
(c) A hole was drilled in the centre of each stacking piece.

Describe how the centre of the stacking piece can be found, without measuring.
$\qquad$


Blank for stacking
(d) The drill bit shown was used in the manufacture of the stacking piece.


State the name of this drill bit.
(e) Glass paper was used to remove pencil marks before applying a finish.
(i) Tick $(\checkmark)$ the box under the sketch which shows the correct direction for glass papering.

$\square$

$\square$
$\square$
(ii) The grain was raised before the finish was applied. Explain how this was done.
$\qquad$
5. A storage rack for garden tools is shown

(a) State the fault with this method of storing tools.
(b) The following joints were researched during the design of the storage

Joint $X$

Joint Y

Joint Z

State the name of each joint
Joint $X$ $\qquad$
Joint $Y$ $\qquad$
Joint Z $\qquad$

## 5. (continued)

(c) The tool shown below was used in the manufacture of the storage rack.

(i) Name of tool
$\qquad$
(ii) Use of tool
6. A toy train is shown below.

(a) The following factors were considered when designing the toy train.
Manufacture Cost Safety Colour Environment

Select from the list above:
1 the factor which ensures no sharp edges; $\qquad$
2 the factor which makes the train look good. $\qquad$
(b) Part of the train was manufactured using the machine shown below.

(i) State the name of this machine.
(ii) Name the parts shown at $\mathrm{A}, \mathrm{B}$ and C using the list below.

Tool rest Driving fork Headstock Tailstock Revolving centre
(A) $\qquad$
B
(C)
6. (continued)
(c) A parting chisel was used during the manufacture of the train.

Tick $(\checkmark)$ the sketch of the parting tool.

(d) The tools shown below were used during the manufacture of the train.

State the name of each tool.


Name $\qquad$


Name $\qquad$
(e) The machine shown below was used during the manufacture of the toy train.
(i) Tick $(\checkmark)$ the name of the machine.Twist drillPedestal drillCountersink drill
$\square$ Hand drill

(ii) State two safety rules which should be followed when using the Machine above.
6. (a) (continued)
(iv) The shelving unit was tested.

Tick $(\checkmark)$ the stage in the design process where testing would takeDeveloped ideas

EvaluationAnalysis
(b) The pupil's final design for the shelving unit is shown below.


The material for the shelving unit was marked out as shown below.


Complete the cutting list shown below.

| Part | Material | Quantity | Length | Width | Thickness |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Manufactured board | 1 | 500 | 50 | 10 |
| Top shelf | Manufactured board | 1 | 310 | 50 | 10 |
| Middle shelf | Manufactured board | 1 |  | 50 | 10 |
| Bottom shelf | Manufactured board | 1 | 250 |  | 10 |

6. (continued)
(c) The joint shown below was used in the manufacture of the shelving unit. Tick $(\checkmark)$ the name of this joint.ButtThrough housingMortise and TenonStopped Housing

(d) The tool shown was used during the manufacture of the shelving unit.
(i) Tick $(\checkmark)$ the name of this tool.
$\square$ File


Chisel
$\square$ Marking gaugeHand router

(ii) From the list below select the use of this tool.

Measuring joint Sanding joint Levelling joint Sawing joint
$\qquad$
(e) Pencil marks were removed from the shelving unit before applying a finish. State how the pencil marks could be removed.
$\qquad$
( $f$ ) The screw shown was used to fix the shelving unit to a wall. Tick $(\checkmark)$ the name of this type of screw.Round headRaised headCountersunk head

7. A children's bathroom step is shown below.

(a) The step was made from a manufactured board.
(i) State the name of a suitable manufactured board.
(ii) State one reason for using a manufactured board over a natural wood.

State two advantages of using a template.
Advantage 1 $\qquad$
Advantage 2 $\qquad$

## 7. (continued)


(c) The legs were glued and screwed to the rails during assembly. State one reason why they were screwed together as well as glued.
(ii) State the name of this type of wood screw.

(iii) State one reason for using a wood screw with this type of head.
(d) An abrasive paper was used during manufacture. State the name of a suitable type of abrasive paper.
(e) Gloss paint was applied as a finish.

State two reasons for using a gloss paint finish.
Reason 1 $\qquad$
Reason 2
8. A table is shown below.

(a) The machine shown below was used in the manufacture of the table. Tick ( $\checkmark$ ) the name of the machine shown.Mortise machinePedestal drillWood latheSanding

(ii) From the list given below, name the parts A, B and C of the machine.

Tailstock
Revolving centre
Headstock
Toolrest
Fork centre

(iii) State two safety precautions you should follow when using this machine.
$\qquad$
8. (continued)
(b) The table legs are made from a hardwood. Which of the following is a hardwood?
PinePlywood
$\square$ Beech
$\square$ Hardboard
(ii) The corners of the hardwood blank were removed during the preparation process.


State the name of the tool used to remove the corners.
(iii) The tool shown below was used during the manufacture of the legs. What is this tool used for. Please tick one answer.CuttingChecking sizesSmoothingClamping


## 8. (continued)

(d) (i) The joint shown below was used during the construction of the desk tidy.

Tick $(\checkmark)$ the name of this joint.
Stopped housingDowelMortise and tenonCorner rebate

(ii) A white glue was used to glue the joint shown above. Tick $(\checkmark)$ the name of this giue.PVCTAPPVAMDF
(iii) The tool shown below was used to hold the joint together while the glue set.
Tick $(\checkmark)$ the correct name for this tool.
$\square$ G-clampBench viceMachine viceSash cramp

9. (a) A wooden chair is shown

(a) A flat packed version of the chair was produced.
(i) State an advantage of flat pack furniture to:

The retailer
$\qquad$
The customer

Wooden dowel

(ii) State the reason for chamfering the ends of the dowel.
$\qquad$
(iii) The fixings shown are used in the assembly of the chair.


State the collective name of these
10. (a) A wooden stool is shown.


Parts of the stool were manufactured on a wood lathe.

(i) The blank was held between " centres".

State the name of a centre that would be fitted in the:
Headstock $\qquad$

Tailstock $\qquad$
(ii) The " centres" support the blank.

State a further function of the 'centre' fitted in the headstock.
(iii) The tailstock can be adjusted.

State why an adjustment of the tailstock may be necessary.
10. (continued)
(b) A gouge and parting chisel were used during the manufacture of the leg shown.

Shoulder


Describe the operation performed by the:
(i) Gouge $\qquad$
(ii) Parting chisel
(c) State a functional reason for the shoulder at the top of the leg.


Bit 2

Bit 1

State the name of each bit shown.
Bit 1 $\qquad$
Bit 2
(ii) State a reason why bit 1 was preferred when boring the holes in the seat.
$\qquad$
(e) A damp cloth was used to wet the stool during the finishing process.

State a reason for wetting the wood.
11. A wall mounted storage rack for computer games is shown.


All softwood 12 mm thick
(a) A working drawing and incomplete cutting list for the storage rack is shown below.

Complete the cutting list.


| Part | Quantity | Length | Breadth | Thickness | Material |
| :---: | :---: | :---: | :---: | :---: | :--- |
| A | 1 | 324 | 140 | 12 |  |
| B | 2 | 208 | 140 |  | Softwood |
| C | 1 |  | 140 | 12 | Softwood |
| D | 4 | 80 | 80 | 4 | Plastic |

## 11. (continued)

(b) (i) A softwood was used in the manufacture of the rack. Which of the following is a softwood?Pine
$\square$ OakMDFPlywood
(ii) The joints shown were used in the manufacture of the storage rack.

Select the name of each joint from the list below.
Dowel Mortise and tenon Housing Cross halving Lap


Joint $\qquad$ Joint

## 11. (continued)

(c) (i) The machine below was used during the manufacture.


State the name of this machine.
(ii) From the list below, tick $(\checkmark)$ three safety checks that should be carriedMaterial is secured
$\square$ Tool rest isTailstock removedMaterial turns freelyGuard is downChuck key is removed
(iii) Wood was placed under the plastic before drilling.

State a reason for this.
$\qquad$
(iv) The covering was kept on the plastic during manufacture.

State a reason for this.
$\qquad$
12. A bathroom vanity unit is shown below.

(a) The items to be stored in the vanity unit were measured.

Tick $(\checkmark)$ the stage in the design process where this would take place.EvaluationPresentation drawingResearchCutting list
(b) (i) The joint shown below was used in the manufacture of the vanity unit. Tick $(\checkmark)$ the name of this joint.Rub jointHousing jointDowel jointKnock down fitting

(ii) The tool below was used to mark out the joint.

Tick $(\checkmark)$ the name of this tool.Steel ruleDividersScriberMarking gauge

12. (continued)
(c) (i) A white coloured glue was used during the manufacture of the unit. From the list, select the name of this glue.
PVC Epoxy Impact PVA

Glue $\qquad$
(ii) A waterproof glue was used. State a reason for this.
$\qquad$
(iii) State a method of removing excess glue from the joints during the manufacture of the vanity unit.
(iv) The tool shown was used to check for squareness. Select the name of the tool from the list below.


Engineer's
squareMitre square
$\square$ Try square

(d) (i) A countersunk screw was used to attach the hinges on the door. Tick the image of a countersunk screw.
$\square$
$\square$

$\square$
$\square$
(ii) The tool shown below was used when attaching the hinges. State the name of this tool.

13. A table is shown below.

(a) The tool shown below was used in the manufacture of the table


State two separate adjustments that can be made to this tool.
Adjustment one
$\qquad$
$\qquad$
Adjustment two
$\qquad$
$\qquad$
13. (continued)
(b) The mortise gauge shown below was used to mark out the mortise and tenon joint.


Describe two steps to mark a 12 mm mortise centrally on the table leg.
Sketches may be used to illustrate your answer. You must reference sizes in your answer.
Step 1
$\qquad$
$\qquad$
$\qquad$
$\qquad$

Step 2
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
(c) The finishing process includes "wetting the wood".

State the purpose of "wetting the wood".
14. A woodpecker toy is shown below.


Enlarged view of toy woodpecker


View of parts for base
(a) The woodpecker is made from a close grained hardwood. State the name of a suitable hardwood.
(b) The wooden base is made in two parts.

State the name of a suitable joint for the base of the woodpecker toy.
15. The wooden clothes hanger shown below is designed to hang in a wardrobe or be freestanding.

(a) The wood joints shown below were considered during the design of the hanger.
State the name of each joint.
(X)
(Y)


Joint X
$\qquad$
Joint $Y$
$\qquad$
Joint Z
15. (continued)
(b) One half of joint $Z$ is shown below.

(i) The tools used to mark out the joint are shown below. State the names

> Tool A

Tool B


Tool (A)
Tool
(B)
(ii) The tools used in the manufacture of the joint are shown below. State the names of these tools.
Tool C


> Tool D

Tool (C) $\qquad$

(c) Varnish was applied to the hanger. State two reasons for applying a varnish finish.

Reason 1

Reason 2
16. A wooden kitchen roll holder is shown below.

(a) The following statement appeared in the specification. " The holder must be stable."

State which feature of the holder gives it stability.
(b) The stem is turned on a wood lathe as shown


From the list below select the name of parts A, B and C.
Revolving centre Tailstock Headstock Fork centre Tool rest
(i) Part A
$\qquad$
(ii) Part B
$\qquad$
(iii) Part C
16. (continued)
(c) State three safety checks which should be made to the wood lathe before switching it on.

1

2

3
(e) The wooden base was varnished. State two stages in the preparation of The base before applying the varnish.

Stage 1

Stage 2
17. A school enterprise group made table mats from contrasting strips of wood.

(a) A list of materials is given below.

Hardboard Pine Plywood Beech Blockboard
From the list select:
(i) a hardwood;
(ii) a softwood.

(b) State one reason why the strips of wood have been clamped as shown (i.e. two below and one above).
17. (b) (continued)
(ii) The holding device shown below was used to hold the strips while the glue dried.


State the name of this device.
$\qquad$
(c) A number of mats were produced for sale.

State two advantages of using a template to mark out the curved ends.
1.
$\qquad$
(d) State the name of a machine tool and a hand tool suitable for cutting out the curved ends.
(i) Machine tool
$\qquad$

Hand tool
18. A wooden base for a table lamp is shown below.

(a) (i) The base was manufactured on the machine shown below.


State the name of this machine.
(ii) Tick $(\checkmark)$ the name of the process carried out by this machine.Forging
$\square$ Casting
$\square$ Turning

## 18. (continued)

(b) A list of tools used to prepare the wooden blank is given below. From this list write the name of the tool used at each stage.

Tenon Saw Marking Gauge
Smoothing Plane
Rule and Pencil
Stage 1 -Mark diagonals Stage 2 -Score line parallel to edges


Tool $\qquad$ Tool $\qquad$


Tool $\qquad$ Tool $\qquad$


Finished Blank
19. A decorative wooden box and stand are shown.

(a) State the name of joint $A$.
$\qquad$
The tool shown below was used to mark out the joint.

(b) (i) State the name of this tool.
(ii) State two adjustments that can be made to this tool.

Adjustment 1 $\qquad$
$\qquad$
19. (continued)
(c) State the name of another joint that could have been used as an alternative to joint A.
$\qquad$
(d) Joint A was "dry clamped".

State the purpose of dry clamping.
$\qquad$
$\qquad$
(e) The tool below was used in the manufacture of the box.

(i) State the purpose of the lever.
(ii) State the purpose of the brass nut.

Decorative holes Curved edge "C"

20. A storage rack for computer games made from hardwood is shown.


Rack with some games in place


Thickness
Computer game
(a) From the list below, select a suitable hardwood.
Pine
Beech
Spruce
MDF
(b) Tick $(\checkmark)$ two pieces of information that will determine the length "L" of the storage rack.The length of computer gameThe breadth of computer gameThe type of computer gameThe number of computer gamesThe thickness of computer game $\square$ The cost of computer game
(c) The joint shown was used in the manufacture. Tick $(\checkmark)$ the name of theCross halvingThrough housingMortise and tenonStopped housing


## 20. (continued)

(d) The tools used to mark out and cut the joint are shown below.


Tenon saw



G-clamp


Bevel-edged


State the name of the tool used for each of the stages listed below.

- Measuring
- Marking the depth of the joint
- Holding the material while cutting
(e) State the name of a machine tool that can be used to shape the curved edge " C" of the storage rack.

Name of machine tool
20. (continued)
(f) The tool shown below was used during the manufacture of the storage rack. Tick $(\checkmark)$ the name of this tool.Flat bitCountersink bitAuger bit
Forstner bit
(g) The storage rack is to be finished using varnish.

State a method of applying the varnish thinly and evenly.
21. A storage rack for use in a kitchen is shown.

(a) Using the information above, complete the cutting list shown below.

| Part name | Material | Quantity | Length | Breadth | Thickness |
| :--- | :--- | :--- | :--- | :--- | :--- |
| Front rail |  | 1 | 240 | 30 | 30 |
| Back rail | Plywood | 1 |  | 40 | 12 |
| Shelf | Plywood | 1 | 240 | 120 |  |
| Side | Plywood |  | 180 |  | 12 |

21. (continued)
(b) The shape " X " shown below made from card was used to mark out the Sides of the rack quickly and accurately.

State the name of this type of marking out aid.
$\qquad$

(c) The tool shown below was used in the manufacture of the storage rack.

Tick $(\checkmark)$ the name of this tool.
$\square$ Hand routerRoughing toolJack Plane

(d) The decorative front rail was manufactured on the machine shown below.

(i) State the name of this machine.
(ii) The tool shown below was used to hold one end of the material on The machine. From the following list, select and write the name of this tool.


Driving fork Parting tool Facing tool Live centre
(iii) From the list below, tick $(\checkmark)$ three safety checks that should be Carried out to the machine before switching it on.Chuck key removedMaterial turns freelySafety goggles are wornSpeed set correctlyApron onHair tied back
22. A child's game is shown

(a) The rails and pegs are to be made of a hardwood. State the name of a suitable hardwood.

(b) State the name of this joint.

## 22. (continued)

(c) The following tools were used in the manufacture of the joint. State the name of each tool.
(i)


Tool name $\qquad$
(ii)


Tool name
(d) A wooden peg is shown


State the name of the machine used to manufacture the peg.
22. (continued)
(e) The tools shown below were used when manufacturing the peg.
(i)


Tool name
(ii)

23. A covered sand pit table for a nursery is shown.

(a) The joint shown was used in the manufacture of the table.

(i) State the name of this joint.

(ii) State the name of this type of chisel.
$\qquad$
(iii) Describe how to ensure that the slot in the leg is cut to the correct depth.
$\qquad$
23. (continued)
(b) State the name of a white coloured wood glue used in the assembly of the wooden table.

(ii) State the name of the holding device.
23. (continued)
(d) The top frame is shown below.


State two methods of checking that the frame is 'square'.

1. $\qquad$
2. $\qquad$
(e) State a suitable finish that could be applied to show the natural grain of the wood.
3. A TV unit made from MDF is shown below.

(a) A cutting list was made for the TV unit.

State two pieces of information that would be found on a cutting list.

1. $\qquad$
2. 

## 24.(continued)

(b) A butt joint was considered for the unit as shown below.


State a reason why this joint was rejected.
(c) The joint shown below was used to join the shelves to the

(i) State the name of this joint.
24. (continued)
(d) A hand router was used to finish the bottom of the joint.
(i) With reference to the sketch below, describe how you would set this tool to finish the joint to a depth of 10 mm .

$\qquad$
$\qquad$
(ii) State one reason why a hand router, rather than a chisel, would be used to flatten the bottom of the joint.
25. A child's toy bike is shown

(a) Parts A , B and C are made from plywood.

State two reasons for this choice of material.

1. $\qquad$
2. 

(b) State the name of a machine tool that could be used to cut the shape of Part A.
(c) An incomplete sequence of operations for the manufacture of the carrying handle is shown.
(i) Explain how a coping saw can be used to cut out the carrying handle in Part B

Step 1 mark out waste using a template
Step 2 $\qquad$


Step 3

## 25. (c) (continued)

(ii) Describe how the coping saw is adjusted when cutting the outline shape of the carrying handle.
$\qquad$
(e) Holes of the type shown below are made in the rear


Sectional view of hole


The tools shown below were used to drill the holes in the rear forks.


Tool 1


Tool 2
(i) State the full name of each tool.

Tool 1 $\qquad$

Tool 2 $\qquad$
25.(e) (continued)
(ii) State a reason why tool 2 was used before tool 1 when drilling the holes.
(f) Name a suitable method of joining the handlebar to Part A.

Name of joining method

(g) The bike was finished in primary colours.

State one reason for using primary colours.

