COMPONENT 1

TIME ALLOWED - 1 hour 45 minutes

EQUIPMENT REQUIRED

Drawing and writing equipment, coloured pencils and a calculator

INSTRUCTIONS

You are to answer all questions.
Section A - CORE

Answer all the questions in this section

1a. The table below is divided into three columns. Column ‘A’, shows an image of a product. Column ‘B’ identifies the manufacturing process and Column ‘C’ names a material(s) suitable for the manufacturing process. Complete the table below by adding the missing information. The first answer has been completed for you.

<table>
<thead>
<tr>
<th>(A) PRODUCT</th>
<th>DESCRIPTION</th>
<th>PROPERTY</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Image" /></td>
<td>DESKTIDY</td>
<td>Thermoplastics such as polystyrene, nylon, polypropylene and polythene are ideal plastics for this type of manufacturing process.</td>
</tr>
<tr>
<td><img src="image2" alt="Image" /></td>
<td>‘PLASTIC’ TROPHY</td>
<td><img src="http://www.technologystudent.com/prddes1/rotate2.html" alt="Helpful Link" /></td>
</tr>
<tr>
<td><img src="image3" alt="Image" /></td>
<td>BLISTER PACKAGING</td>
<td><img src="http://www.technologystudent.com/gprep07/vac2.html" alt="Helpful Link" /></td>
</tr>
</tbody>
</table>

1 mark

HELPFUL LINK

http://www.technologystudent.com/prddes1/rotate2.html

http://www.technologystudent.com/gprep07/vac2.html

1 mark
<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>DESCRIPTION</th>
<th>PROPERTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEEL TRAY</td>
<td>COMPRESSION MOULDING</td>
<td></td>
</tr>
<tr>
<td><a href="http://www.technologystudent.com/despro_flsh/charity9.html">http://www.technologystudent.com/despro_flsh/charity9.html</a></td>
<td></td>
<td>1 mark</td>
</tr>
<tr>
<td>PACKAGING</td>
<td>DIE CUTTING</td>
<td></td>
</tr>
<tr>
<td><a href="http://www.technologystudent.com/equip1/hypress1.htm">http://www.technologystudent.com/equip1/hypress1.htm</a></td>
<td></td>
<td>1 mark</td>
</tr>
<tr>
<td>WHEELIE BIN</td>
<td>BLOW MOULDING</td>
<td></td>
</tr>
<tr>
<td><a href="http://www.technologystudent.com/rmprep09/inject1.html">http://www.technologystudent.com/rmprep09/inject1.html</a></td>
<td></td>
<td>1 mark</td>
</tr>
</tbody>
</table>
1b. The manufacturer of the greetings card has included aroma pigments, in the form of a ‘scratch and sniff’ patch.

(I) How could aroma pigments, applied to the scratch and sniff patch, improve the appeal of the greetings card?  

(II) The greetings card is manufactured by a web-fed printer. What is web-fed printing?

HELPFUL LINK  
http://www.technologystudent.com/despro_flsh/flex2.html
2. The photograph shows a roll of foam, which will be used to manufacture cushions.

2a. Name a suitable polymer for the manufacture of this product? In your answer explain the physical properties that make it suitable. **2 marks**

2b. The manufacturer has switched suppliers and the foam is now supplied in the shape of a rectangular prism, NOT a roll of foam. What is the volume of the rectangular prism, shown below? **3 marks**
2c. The foam cushions will be covered with nylon, woven into a textiles materials List two physical properties of nylon. 2 marks

(i) 

(ii) 

2d. Briefly describe how nylon is manufactured. 2 marks
3a. The diagram below represents a type of movement.

(I) Name the movement.  1 mark

(I) Describe the movement.  1 mark

3b. The diagram below, shows the structure holding up roof of a house. In terms of forces, label the struts and ties?  2 marks
3c. The diagram shows the practical application of a lever. Clearly identify the EFFORT, LOAD and FULCRUM  

3 marks

HELPFUL LINK  http://www.technologystudent.com/forcmom/lever1.htm

3d. The simplified diagram below, represents a crow-bar being used to move a 400n load. What EFFORT is required to move the load?  

4 marks

HELPFUL LINK  http://www.technologystudent.com/forcmom/force2.htm
4a. Why does a pulley wheel have a grooved edge?  
1 mark

4b. A simple pulley system is seen opposite. Calculate the velocity ratio  
2 marks

4c. What is the efficiency of the pulley system?  
2 marks
4d. The total amount of renewable energy produced in 2016 was 90 Terawatt hours (Twh). The ratio of hydroelectricity compared to other renewable energy forms was 1:12.

What amount of energy was produced through hydroelectricity? 3 marks

HYDROELECTRICITY : OTHER RENEWABLE FORMS
1 : 12

EXPLANATION: ______________________

4e. If total amount of renewable energy produced in 2016 was 100 Terawatt hours (Twh) AND the ratio of hydroelectricity compared to other renewable energy forms was 1:9.

What amount of energy was produced through hydroelectricity? 3 marks

HYDROELECTRICITY : OTHER RENEWABLE FORMS
1 : 9

EXPLANATION: ______________________
5. The Illustrations show a solution for a steel public bench.
5a. The steel bench needs to be improved to include the following specification points.

The steel bench must:

(I) Have a support for the user’s back.

(I) Be interlockable / stackable with other units of the same design.

(iii) The steel bench must weigh less, than suggested by the original design.

Use notes and/or sketches to show how the public seat could be modified to satisfy the addition specification points, listed above.

Produce clear drawings / sketches, using the outline of the original design to show how the additional specification points can be satisfied.

6 marks
5b. The steel bench must be available in a range of durable colours as shown below. This is achieved through a process called **Powder Coating**.

**SAMPLE POWDER COATING COLOUR FINISHES**

In the space below explain / describe the powder coating process.  **4 marks**
6a. Carefully study the adjustable ‘table top lamp’. The base is made from chromed, solid steel.

Write two reasons why chromed solid steel is suitable for the base of the lamp.  

2 marks

(I) ____________________________________________________________

(II) __________________________________________________________
6b. The steel components seen below have been 'chemically blacked' using a chemical blacking solution.

Use notes and/or sketches to explain/describe the process of chemical blacking.

Use clear sketches and notes in your answer.

4 marks
6c. The components have been machined, prior to being chemically blacked.

What is a machined finish?

2 marks
6d. The component seen below has a knurled pattern finish. In the space below, explain the knurling process. Use both notes and sketches.  

6 marks
7. The electric guitar shown below, has a decorative copper tube, shaped to follow the contours of the guitar body. A pipe bender has been used to shape the copper tube.

7a. In the space below, draw a pipe bender and explain how it could be used to manufacture the shaped copper tube. 4 marks

7b. Name another piece of equipment that could be used to shape the copper tube. 1 mark
7c. A piece of steel tube can be seen opposite. The external and internal diameters can be read from the diagram.

What is the area of the surface at one end of the steel? 5 marks

**FORMULA**

\[ \text{AREA} = \pi r^2 \]

\[ \pi (\pi) = 3.14 \]

Treat the surface at the end of the tube as two circles and find the area of each one:

**EXTERNAL DIAMETER**

| \[ \phantom{120} \] |
| \[ \phantom{90} \] |
| \[ \phantom{90} \] |
| \[ \phantom{90} \] |

**INTERNAL DIAMETER**

| \[ \phantom{90} \] |
| \[ \phantom{90} \] |
| \[ \phantom{90} \] |
| \[ \phantom{90} \] |

Then, subtract the area of the internal circle from the area of the external circle, to find the total surface area of the tube.

The total surface area of one end of the tube is _______________
7. The screwdriver shown opposite has been manufactured in a school workshop. The steel blade has been through the heat treatment process called hardening and tempering.

7d. Complete the stages explaining the hardening and tempering process (below). The first stage has been completed, as an example. 6 marks

**STAGE ONE:**

The screw driver blade is heated, slowly at first, warming up the whole blade. Then the heat is concentrated on the area at the end of the blade. This gradually becomes ‘red’ hot.

**STAGE TWO:**

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**STAGE THREE:**

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**STAGE FOUR:**
8. The products show below have been electroplated, to give them a ‘quality’ finish.

8a. Using notes and a sketch(s), describe the electroplating process, used on the products above.

9 marks (4 marks - notes and 5 marks - sketch(s))

NOTES:


SKETCH(S)
8b. What is an alloy? **3 marks**

8c. Alloying agents (such as chromium, vanadium and nickel) enhance the properties of the parent metal. Complete the table, by adding **Properties** and **Uses**, for each alloying agent. **6 marks**

<table>
<thead>
<tr>
<th>ALLOYING AGENT</th>
<th>PROPERTIES</th>
<th>USES</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHROMIUM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VANADIUM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NICKEL</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
5. A design solution for packaging of a toothbrush set, is shown below. The aim is to encourage younger people to clean their teeth thoroughly (improving oral hygiene and general health).

100 % recycleable
Lightweight
Environmentally friendly material.
Materials supplied from a certified sustainable source.
Supplied in flat sheet form and folded to form the 3D version.
5a. The packaging for a toothbrush set needs improving, so that it meets the additional specification points:

The packaging must:
(I) Have a clear ‘window’, allowing potential customers to view the products inside the packaging.
(II) The packaging must have a folding handle, allowing the customer to carry the product to the checkout.
(III) The packaging must be environmentally friendly, displaying recycling logos, a logo associated to the use of sustainable materials AND a logo that shows that the contents satisfy British and European Standards.

Use notes and/or sketches to show how the packaging could be modified to satisfy the addition specification points, listed above

Produce clear drawings / sketches, using the outline of the original design, to show how the additional specification points can be met.

6 marks
5b. Quick Response Codes are usually seen on packaging (see example below). What is a QR Code?  

4 marks
6a. The image on the T Shirt seen opposite, has been ‘printed’ through a process called ‘screen printing’. This process is also often used on card / board products.

Explain the screen printing process. Include both notes and a sketch(s) in your answer  

4 marks

SKETCH(S)

NOTES:
6b. These products have received their illustrations and decoration through flexographic printing (also called ‘Flexo’).

Explain the flexographic printing process shown opposite.  

6c. Explain two advantages of the flexographic printing process.  

6d. When the packaging is manufactured, the various shapes are cut out, as a flat net / development. How is this achieved? In the space below, name a suitable process, draw a labelled diagram to represent the process and add notes that explain the process.  **Total of 8 marks**

**PROCESS NAME:**

(1 mark)

**LABELLED DIAGRAM**

(4 marks)

**NOTES:** (3 marks)
6e. Greeting cards and quality writing paper, often have areas that have been embossed. This gives the card/paper a more luxurious feel, when it is handled. Embossing is also visually appealing (see the example).

In the space below, explain the embossing process. Use notes and sketches in your answer. **Total of 5 marks**

![Embossed Area](http://www.technologystudent.com/despro2/stamp24.htm)

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**NOTES (2 marks):**

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7. A rectangular transparent window is to be added to the lid of the packaging seen in question 5. The window allows the customer to view some of the products inside the package.

7a. Calculate the area of piece A (the entire lid)  

7b. Calculate the area of piece B (the window only)
8a. Two symbols, often seen on card packaging are seen below. What do they represent?
2 marks (1 mark per answer)

(I) 

(II) 

8b. The logo shown opposite is sometimes printed on packaging. Explain the meaning of this logo. 4 marks

______________________________

______________________________

______________________________

______________________________
9a. Designers make models throughout the design and development of a product? Why is model making important?  

2 marks

9b. Name two model making materials used by designers and describe the characteristics that make them suitable for model making.  

3 marks

Modelling Material:

Characteristics:
Biodegradable inks are slowly increasing in popularity, for the printing of text and illustrations on packaging.

(I) What are biodegradable inks? 1 mark

(II) What are the advantages of biodegradable inks? 3 marks
### 10a. A range of paper and boards exist. Complete the table below by describing each material and giving a practical application. The first row has been completed for you.

**Total of 9 marks**

<table>
<thead>
<tr>
<th>MATERIAL</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CORRUGATED BOARD</strong></td>
<td><em>This type of board is often used for packaging large electrical items. These large boxes (often brown in colour) protect the contents from damage. Corrugated board is strong because it is composed of a top and bottom layer and in between there is a triangulated section. A triangular section is very strong compared to its weight.</em></td>
</tr>
<tr>
<td><strong>DUPLEX BOARD</strong></td>
<td></td>
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<tr>
<td><strong>3 marks</strong></td>
<td></td>
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<tr>
<td><strong>TRACING PAPER</strong></td>
<td></td>
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<tr>
<td><strong>3 marks</strong></td>
<td></td>
</tr>
<tr>
<td><strong>FOIL LINED BOARD</strong></td>
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<tr>
<td><strong>3 marks</strong></td>
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</tbody>
</table>
The desktop organiser is manufactured from a suitable polymer

It is drop resistant, relatively unbreakable.

The organiser will help the client complete tasks such as writing, drawing and general office work.

Manufactured from recycled material.

Lightweight but very strong.

Manufactured in a range of colours.

The cost to the customer is £7.50.
5a. The office desktop organiser, needs to be improved to include the following specification points.

The desktop organiser must:
(I) Have an ergonomically designed handle, so that it can be transported from table to table, with ease.
(II) The desktop organiser must store an increased range of stationary equipment; Pens, pencils, ruler, scissors, glue, paper clips, compass, protractor, calculator, stapler, mobile phone etc....
(III) The organiser must have an area that is a safe resting place for a hot drink.

Use notes and/or sketches to show how the Desktop Organiser could be modified to satisfy the addition specification points, listed above.

Produce clear drawings / sketches, using the outline of the original design to show how the additional specification points can be met.

6 marks
5b. Name a suitable material for the manufacture of the desktop organiser.  
1 mark

5c. The desktop organiser is manufactured through a process called injection Moulding. Describe injection moulding.  
3 marks

5d. In the space below, draw a labelled diagram that represents the injection Moulding process.  
4 marks
5e. Why is the material you named in question 5b, suitable for the manufacture of this desktop organiser. 2 marks


5f. Name another material that would be suitable for the desktop organiser and explain why it is suitable. 2 marks

NAME: __________________________________________

WHY SUITABLE: ____________________________________________________________


5g. in the space opposite, sketch the recycling symbol for material you named in question 5b. 2 marks
6a. The desktop organiser manufacturer is considering using TPEs. What are Thermoplastic Elastomers (TPEs)? \textit{2 marks}

6b. What are the general properties of TPEs? \textit{2 marks}

6c. Describe some uses of TPEs. \textit{2 marks}
6d. Why is a thermoplastic Elastomer (TPE) suitable for the manufacture of the TV remote control seen opposite?

Make reference to General Properties, Product function, aesthetics, and product manufacture in your written answer.

5 marks
7a. The solid polymer object seen below, has been manufactured on an engineering centre lathe. It is one solid piece. Calculate the total volume.  

FORMULA

\[ v = \pi r^2 h \]

\[ \text{volume} = \pi \times \text{radius}^2 \times \text{height} \]

\[ \pi \text{ (pi)} = 3.14 \]

In order to calculate the entire volume of the engineered solid, it is treated as two separate parts. Part A is the smaller cylinder and part B is the larger cylinder.
Write **four** reasons why this material is suitable for the carrier bag. Justify each ‘reason’.

**Total of 8 marks (1 mark per reason, 1 mark per justification)**

(i) __________________________________________

(ii) __________________________________________

(iii) __________________________________________

(iv) __________________________________________
9a. Most polymers are manufactured from refined crude oil, using a process called **distillation**. Briefly describe this process.  **4 marks**

9b. What are thermosetting plastics?  **3 marks**
10a. Large supermarkets are aware of the damage plastics cause to the environment. How are supermarkets changing the way they use plastics, so that they are viewed by the customer, as being environmentally friendly? **9 marks**
5. A metal cutting milling machine has two ON/OFF switches, either will allow the cutter to run. The first switch is on the side of the machine (B) and the second is a foot operated switch (A).

The machine has two micro-switches (one on the ‘door and one on the guard) if any of these are released the cutter will stop. The first micro-switch is on a guard, if this is opened the machine will stop. The second micro-switch is on a door which allows access to the moving mechanism of the milling machine. If this is opened the machine will stop.
5a. The logic circuit needs to include the following specification points.

The circuit must:
(I) Include two emergency stop switches, found on the walls of the workshop, either capable of stopping all machines in the workshop.
(II) The machine must stop if a guard or machine door is opened.
(iii) Either of the ON / OFF switches must activate / deactivate the machine.

Use notes and/or sketches to show how the circuit could be modified to satisfy the specification points, listed above.

Complete the logic circuit/diagram (adding suitable gates and their logic outputs), using the circuit diagram below, showing how the specification points can be met.

*6 marks*

*The micro-switches are normally logic ‘1’ (true, high, on) when pressed. Draw the logic diagram for this machine.*
5b. Flywheels are one efficient way of storing energy. In simple terms, explain how a flywheel works.  

5c. Describe one modern practical application of a flywheel system.  

6a. Springs have a variety of uses. They are often seen in expensive ‘mechanical’ / wind-up (analog) watches, such as seen opposite. How does the spiral torsion spring contribute to the movement of the hands?

1 mark

6b. Describe one way in which springs have been applied to a system, that can store excess electrical energy and release it when required. Include notes and a simple diagram. 3 marks
7a. The diagram below outlines the production of electricity and its distribution. Explain each of the three aspects of the overall process. **4 marks**

<table>
<thead>
<tr>
<th>FUEL AND FURNACE</th>
<th>TURBINES AND GENERATING FACILITY</th>
<th>DISTRIBUTION TO NATIONAL GRID</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

[HELPFUL LINK](http://www.technologystudent.com/enerflsh/COAL2.html)
[HELPFUL LINK](http://www.technologystudent.com/pdf14/POSTER_elec1.pdf)
8a. A typical PIC microcontroller, connected to a computer, is shown below. What is the full terminology for PIC?  **1 mark**

PIC=

8b. PIC microcontrollers are programmed via computer software. Other than programming, how is the software used?  **4 marks**

8c. LDRs are often used as inputs to PIC microcontrollers. How does the resistance of an LDR change, depending on the light level?  **3 marks**
9. Trains are often controlled by traffic lights. These tell the train driver when to stop and when it is safe to move the train forwards. The lights are controlled by the outputs of a microcontroller circuit (seen below). The table shows the operating cycle.

Outputs 0 to 5 are used to control the sequence of lights

<table>
<thead>
<tr>
<th>OUTPUT BIT</th>
<th>7</th>
<th>6</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>0</th>
</tr>
</thead>
</table>

9a. Complete the table below to show the output bit pattern required to run the traffic lights for one cycle. Begin with light A on GREEN and light B on RED.  **5 marks**
10a. Pulleys, such as the combination shown below, are regularly used in machines and mechanical devices.

![Diagram of pulley system](http://www.technologystudent.com/gears1/pulley2.htm)

(I) Calculate the Velocity Ratio of the pulley system. Include all your working out

2 marks

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

(ii) Calculate the RPM of pulley ‘B’. Include all your working out.

3 marks

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
11a. The process of soldering circuits in a school workshop, involves using a soldering iron. Explain each stage of the soldering process, adding notes and sketches (sketches - only if required). The first stage has been completed for you. 6 marks

1. Inspect the tip to make sure that it is not past good operation. If it looks in bad condition it will not help you solder a good joint.

______________________________

______________________________

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______________________________
The drawing shows one of the passenger doors to a train. The passenger doors will only open when the train is stationary at the platform. A sensor circuit controls the opening and closing of doors which open automatically when a passenger approaches.

12a. Name a suitable sensor for this procedure.  \textbf{1 mark}

12b. The incomplete circuit for the operation of the doors is seen below. Complete the circuit by adding the components required to represent your sensor.  \textbf{3 marks}

12c. Describe one safety feature the door control system should have.  \textbf{1 mark}
12d. The sensor circuit has been replaced with a programmable microcontroller circuit. In the space below, complete the flow chart that represents the programming for the opening and closing of the doors.

Alongside the flow chart, explain each stage. 4 marks

START

TRAIN STOPS AT PLATFORM

TRAIN STOPPED? NO

YES

_________________________________________________________________

_________________________________________________________________

_________________________________________________________________

_________________________________________________________________

_________________________________________________________________

_________________________________________________________________

_________________________________________________________________

_________________________________________________________________

_________________________________________________________________
13. Most electronic products are financed, manufactured and distributed through a system called Globalisation.

13a. In general terms, what is globalisation? 4 marks

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

13b. Describe / explain some of the disadvantages of globalisation. 5 marks

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________
This storage box is available in a variety of natural woods. Traditional jointing methods have been used during its manufacture. It has a quality finish and can be locked for security.
5a. The storage box, needs to be improved to include the following specification points.

The storage box must:
(I) Have an ergonomically designed handle, to enable easy transport.
(II) There must be divides within the storage unit, to store different types of ‘small’ items.
(iii) The corner joints of the storage unit, need to be upgraded so that they are strong and can withstand ‘knocks’.

Use notes and/or sketches to show how the storage box could be modified to satisfy the addition specification points, listed above

Produce clear drawings / sketches, using the outline of the original design and the space alongside, to show how the additional specification points can be met.

6 marks
5b. The DVD storage unit is manufactured from Pine or any other suitable natural wood, as requested by the customer.

(I) Explain why a plain housing joint is suitable for the DVD storage unit.

2 marks

(II) Explain why dowelled joints are suitable for the top and sides.

2 marks
5c. The panels / sides of the DVD storage unit are to be varnished, producing a high quality finish.

(I) Using notes and sketches, describe the stages involved in ‘sanding’ / ‘glass papering’, the surface of the ‘wood’ panels / sides, in preparation for varnish.  
4 marks

(II) How can varnish be applied to natural wood, ensuring a good finish?  
2 marks
6a. A retailer has ordered a large number of natural wood DVD storage units, manufactured by a CNC Router, as seen below.

(I) What is the meaning of CNC. 1 mark

(II) Describe 2 advantages of using CAM in the manufacture of large numbers of this product. 2 marks

(III) Describe 3 disadvantages of using CAM in the manufacture of large numbers of this product. 3 marks
7. The table seen opposite is a piece of ‘knock-down’ furniture, held together by a common ‘knock-down’ joint.

7a. What is the name of the knock-down joint? 1 mark

7b. The table is to be updated, with the joints being permanently glued together. In the space below, name and sketch a suitable joint that can replace the knock-down joint. 4 marks
8a. The cone seen below has been turned on a woodworking lathe. Calculate the volume of the cone. **5 marks**

If the height (h) is 70mm and the radius is 50mm

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FORMULA

\[ v = \frac{1}{3} \pi r^2 h \]

the same as

\[ v = \frac{\pi r^2 h}{3} \]

\( \pi \) (pi) is 3.14
9a. Explain why plywood can be described as a composite material. Include both notes and a sketch(s) in your answer 4 marks

9b. What are the advantages of using plywood over other natural woods? 2 marks
**10a.** List one standard size of a wood based composite board: **1 mark**

**10b.** A number of wood based boards are listed below. Write a description of each board, alongside its name / picture. **8 marks in total**

<table>
<thead>
<tr>
<th>BOARD</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLOCKBOARD</td>
<td></td>
</tr>
<tr>
<td>CHIPBOARD</td>
<td></td>
</tr>
<tr>
<td>HARDBOARD</td>
<td></td>
</tr>
<tr>
<td>MEDIUM DENSITY FIBREBOARD (MDF)</td>
<td></td>
</tr>
</tbody>
</table>

2 marks

2 marks

2 marks

2 marks
11a. What is a sustainable forest and why are sustainable forests important? 3 marks


11b. The logo shown opposite is sometimes printed on timber and packaging. Explain the meaning of this logo. 3 marks


11c. The logo shown opposite is sometimes printed on timber and packaging. Explain the meaning of this logo. 3 marks
ADD YOUR OWN TEXTILES
SPECIFIC EXAMINATION QUESTIONS