Product Design 2hr examination 40% of your overall grade

HINTS AND TIPS

1. Always read the question fully before answering
2. Make sure you understand what the question is asking you to do
3. Look at how many marks it's worth – the more marks the more information you should include
4. Always write an answer – blank spaces don't receive marks

Lots of the revision materials to help you answer these topics and questions can be found at ……

www.technologystudent.com look in the product design section.

Materials

Properties of……

- Material strength
- Finishing Techniques
- Work Characteristic
- Joining methods – permanent / non permanent
- Wood (Natural / Man made)
- Plastics
- Metals / Alloys
- New Materials (composites)
- Smart Materials

Maths in D&T

Working out the scales of production or the profits as a percentage , Example question

(e) The table below shows the greenhouse sizes available and their costs.

Option	*Size*	*Cost*
A	1·8 metres × 1·8 metres	£289.98
B	2·4 metres × 1·8 metres	£329.98

The cost of option A greenhouse is £89.50 per square metre. Calculate the cost per square metre of option B greenhouse to the nearest penny. [3]

Show all your workings.

- **Renewable and Non-renewable materials**

Where do they come from (source)?

What products are they used in

What is a renewable or non-renewable material?

What are examples of this?

- **Smart Materials**

What is a smart material?

What are their properties?

How are they used in products

- **Product Marketing**

What is brand identity?

What are the different ways of advertising products?

How do advertisers persuade people to buy product?

20th Century Designers

- James Dyson
- Bethan Graham
- Airbus

Example question

This question is about the Designers that you have studied. It is worth a total of 10 marks. During your course you have studied the work of Jonathan Ive and Verner Panton.

(a) Study the descriptions below and state the name of the designer that matches the information. [2]

Description Name of Designer

(i) Born 13 February 1926.

Trained as architectural engineer in Odense.

Designed the Stacking chair or S chair. **....**.....**.....**

(ii) Born in Chingford 1967.

Studied Industrial Design at Northumbria University.

Worked for London design agency Tangerine.

.........**.....**

(b) Write a short essay in the space below that describes Jonathan Ive's work, identifying its main features and discuss the influence that he has had on Product Design.

[8] *Marks will be awarded for the content of the answer and the quality of written communication*

- **Types of Production and Assembly lines**
- One-off Production
- Batch
- Mass
- Just In Time (JIT)
- Continuous Production
- Standardised Components

- **Environmental Issues**

What are the symbols used to highlight this issue?

What products are they used on?

What are the six R's?

- **Product Evolution**

Why do products change over time?

What influences these changes?

How are they used in products?

- **Quality Assurance and Quality Control**

What is meant by these terms?

How do manufacturers use *Tolerance* in making products?

What National and International agencies ensure that products are safe for consumer to use?/ What are quality standards?

- **Modelling and Prototyping**

  How do designers use these methods?

  How do this help the development of new products?

  How is ICT used in the development of new ideas?

- **The Design Process**
- What are the correct stages of the design process
- Give examples where designers use these stages

- **Human factors**
- Ergonomics and Anthropometrics
- What are they?
- How are they used by designers?

7. This question is about Tools, Equipment and Making. It is worth a total of 20 marks.

(a) Complete the table below by adding the name or use of **each** of the following tools.

Tool	*Name*	*Use*
	..... [1]	This tool is used to cut straight lines in wood.
	Try Square	.... [2]
	..... [1]	This tool is used to mark a centre for drilling.
	Bench Hook	.... [2]

(b) Explain the meaning of **each** of the symbols shown below.

(i)		.... [2]
(ii)		.... [2]

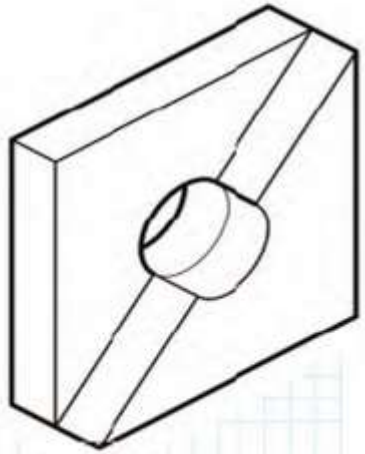
(iii) Explain why graphic symbols are used instead of words on safety notices. [2]

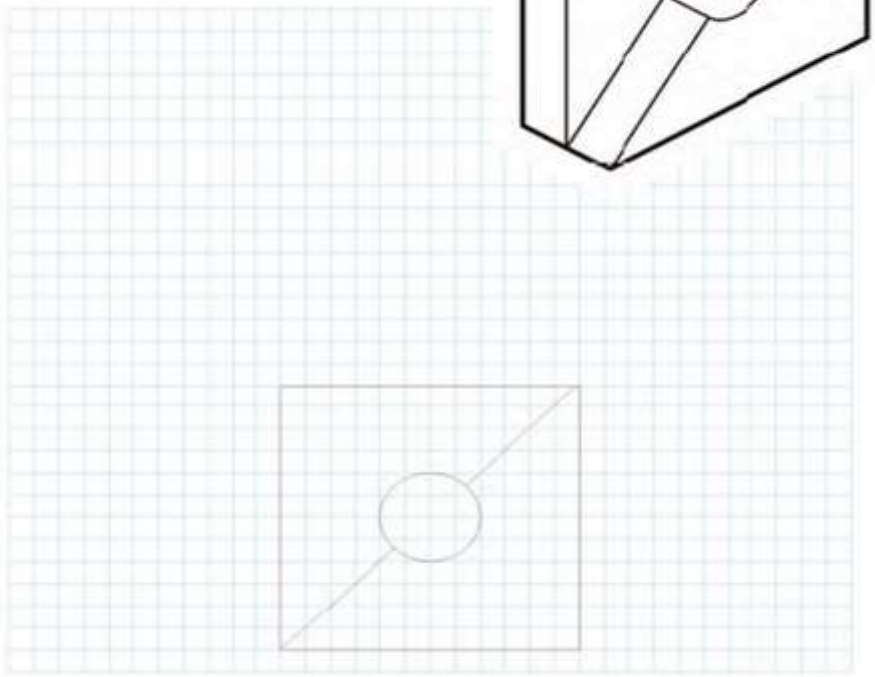
Know your tools, equipment and Health & Safety signs

(b) (i) **Circle** the correct symbol for Third Angle Orthographic projection. [1]

(ii) An Orthographic drawing of the item shown in the pictorial view has been started. Finish the drawing by completing both the plan and end views. [5]

Include all hidden detail.





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Practise how to project a shape into third projection