



Coimisiún na Scrúduithe Stáit
State Examinations Commission

Leaving Certificate Examination 2026

Technology

Section A and Answerbook

Higher Level

Monday 22 June Afternoon 2:00 - 4:30

160 marks

Examination Number

----------------------	----------------------	----------------------	----------------------	----------------------	----------------------

Date of Birth

		/			/		
----------------------	----------------------	---	----------------------	----------------------	---	----------------------	----------------------

For example, 3rd February
2005 is entered as 03 02 05

Centre Stamp

Instructions

Write your Examination Number and your Date of Birth in the boxes on the front cover.

Write your answers to all parts of the examination into this answerbook. This answerbook will be scanned and your work will be presented to an examiner on screen. Anything that you write outside of the answer areas may not be seen by the examiner.

Write your answers in blue or black pen. You may use pencil for sketches, graphs and diagrams only.

There are three sections to this examination. Attempt **all three** Sections.

Questions for Sections B and C are supplied separately but your answers must be written in this answerbook.

Section A 72 marks
Core – Short-answer questions.
Answer **any twelve** questions in this section.
Each question carries 6 marks.

Section B 48 marks
Core – Long-answer questions.
Answer the **two** core questions presented.
Each question in Section B carries 24 marks.

Section C 40 marks
Options – Long-answer questions.
Answer **one** of the five optional questions presented.
Each question in Section C carries 40 marks.

Section A.

Answer **any twelve** questions. All questions carry 6 marks.
Write your answers in the spaces provided.

1. Dublin Airport has launched phase one of its onsite solar farm, resulting in more than 20% of the airport's annual electricity needs coming from renewable solar energy by 2030.

Outline **one** environmental benefit and **one** economic benefit of Dublin Airport's investment in its onsite solar energy farm.



Environmental:

Economic:

2. Underwater treadmills are exercise machines designed for use in water, typically in a pool or a self-contained tank.

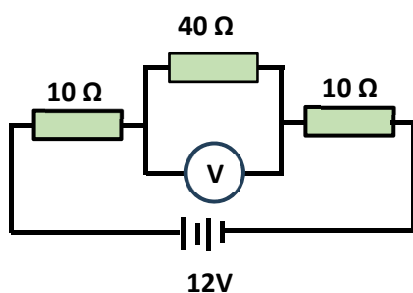
Outline **two** challenges associated with the design of underwater treadmills.

1.

2.



3. Calculate the voltmeter reading (V) in the circuit shown.



Calculation:

4. Kopper Kreations is an award winning Irish company that hand-makes products such as the elegant *duo candelabra* using mostly reclaimed and recycled copper plumbing pipe and fittings.

- (i) State **two** properties of copper that make it a suitable material for the duo candelabra.

1.
2.



- (ii) Outline a suitable method for joining the copper parts.

5. Companies use shock absorbing polymer foam to ensure safe transport of fragile products.

- (i) Name **one** shock absorbing polymer.

--

- (ii) Outline **two** other properties of these polymers that make them suitable as packing materials.

1.
2.



6. Cybersecurity is vital in an increasingly digital world.

- (i) Outline the cyber safeguarding method of two-factor authentication (2FA).

- (ii) Outline **two** features of a strong password.



7. Many brands engage in a cycle of *fast fashion* resulting in *planned obsolescence* of garments.

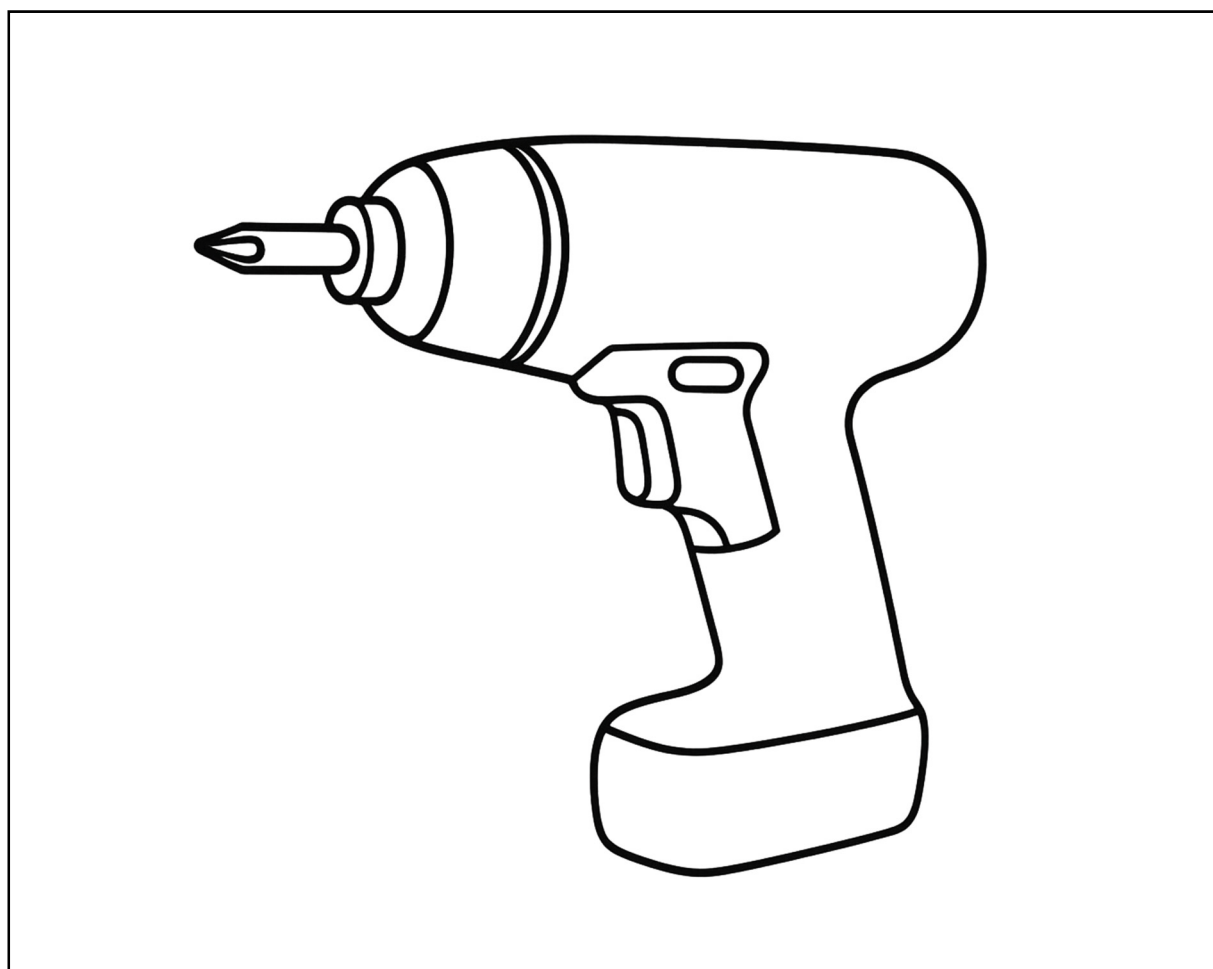
(i) Outline **two** characteristics of fast fashion.

1.
2.



(ii) Explain what is meant by the term planned obsolescence in relation to clothing.

8. Use **two** graphic techniques to enhance the representation of the cordless drill shown.



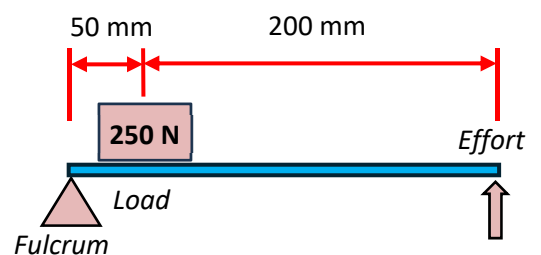
9. Machine systems can create a mechanical advantage. This is represented by the lever shown.

(i) The lever is static. Calculate the effort required, if the load exerts 250 N on the lever.

Calculation:

(ii) Calculate the mechanical advantage of the lever shown.

Calculation:



10. A jigsaw can be used to make straight and curved cuts in a range of materials.

(i) Outline the type of motion that describes the cutting action of the blade in the jigsaw shown.

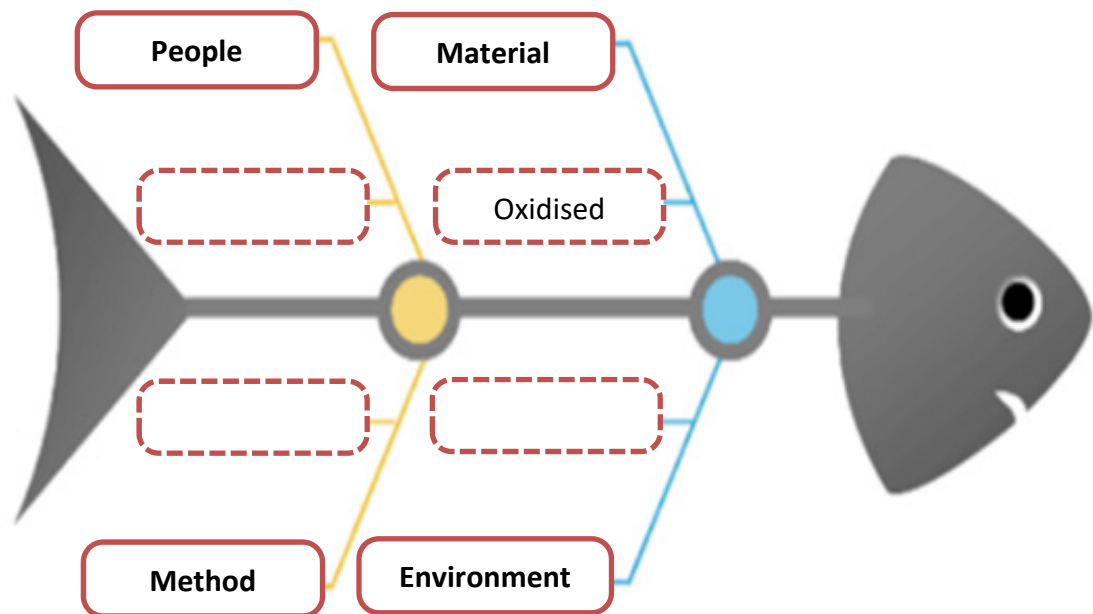


(ii) State **two** safety precautions to be observed when using a jigsaw.

1.
2.

11. A team uses a *cause and effect* (fishbone) diagram to explore identified problems. Four cause categories used for analysing poor-quality soldering on circuit boards for an electronic company are shown below.

For each cause identified, name **one** element that contributes to that cause.



12. Self-healing paint is a type of *smart material* coating that can automatically repair minor scratches or damage without any human intervention.

(i) Explain what is meant by the term smart material.

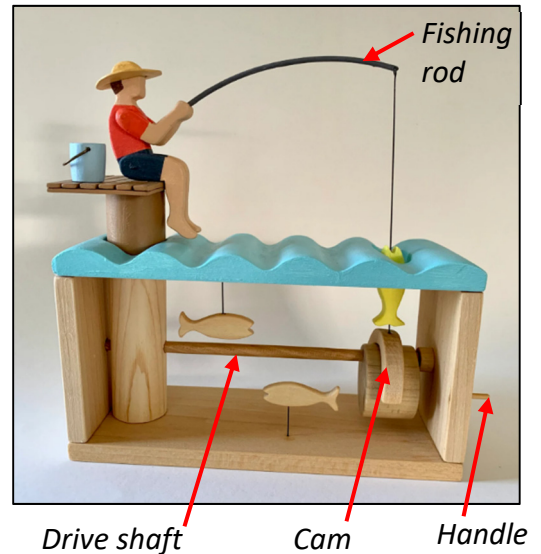
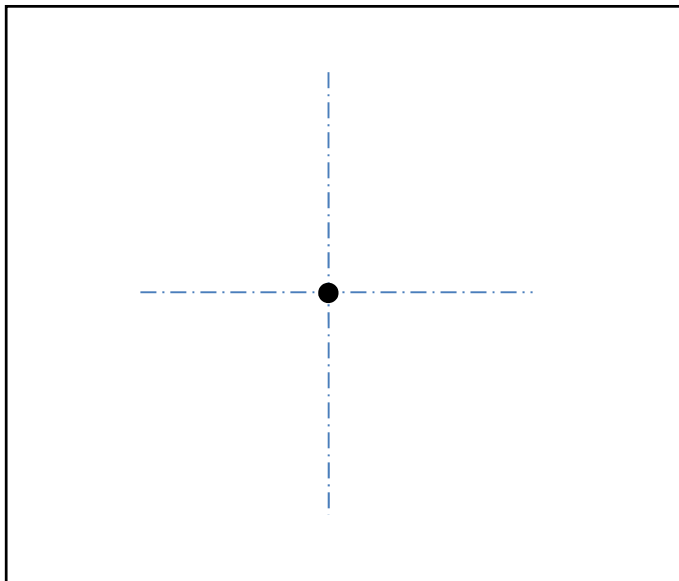


(ii) Describe, with applications, **two** external stimuli that might be used in smart materials.

1.
2.

13. An animated model of a fishing scene is shown. The fishing rod will rise slowly, and then drop quickly, as the handle turns and the cam rotates.

In the box below, sketch a suitable cam profile shape that will generate the required motion of the fishing rod. **Note:** The black dot represents the centre of the drive shaft.



14. A smart vacuum cleaner has a power rating of 1500 watts. It is used for 1 hour every day, at an electricity cost of 34.64 cent per kilowatt-hour.

(i) Calculate the weekly cost of electricity to operate the vacuum cleaner.

Calculation:



(ii) Describe the function of any **two** sensors used in a smart vacuum cleaner.

1.
2.

15. Sketch a front elevation and a plan of the child's climbing arch shown.



Answerbook for Sections B and C

Instructions

Questions for **Sections B** and **C** are supplied separately.

Start each question on a new page. Write the question number in the box at the top of each page.

Use the left-hand column to label each part, as shown below.

Part	Question
(a)	04
(b)(i)	
(b)(ii)	

You do not need to use all of the pages in this answerbook. If you run out of space in this answerbook, you may ask the superintendent for more paper.

Write your answers in blue or black pen. You may use pencil for sketches, graphs, and diagrams only.

Part

[illegible]

Part

[illegible]

Part

[illegible]

--	--

Part

[illegible]

Part

[illegible]

--	--

Part

[illegible]

--	--

Part

Part

--	--

Part

Part

Part

--	--

Part

Part

--	--

Part

--	--

Part

--	--

Part

Acknowledgements

Images

Image 1 page 3: <https://www.dublinairport.com>

Image 2 page 3: <https://enterprisedefence.com/>

Image 2 page 4: <https://itc-konpack.de>

Image 2 page 5: <https://www.linkedin.com/pulse/fast-fashion-destroying-our-planet>

Image 2 page 6: [https:// www.woodmagazine.com/](https://www.woodmagazine.com/)

Image 1 page 7: [https:// https://en.tigosolutions.com/](https://en.tigosolutions.com/)

Image 2 page 7: <https://www.kd-ppf.com/>

Image 1 page 8: [https:// www.etsy.com/fishing-automata-wood-hand-crank](https://www.etsy.com/fishing-automata-wood-hand-crank)

Image 2 page 8: [https:// www.irobot.ie/en_IE/roomba-robots.html](https://www.irobot.ie/en_IE/roomba-robots.html)

Image 1 page 9: https://www.etsy.com/ie/market/wooden_climbing_arch

Do not write on this page

Copyright notice

This examination paper may contain text or images for which the State Examinations Commission is not the copyright owner, and which may have been adapted, for the purpose of assessment, without the authors' prior consent. This examination paper has been prepared in accordance with section 53(5) of the Copyright and Related Rights Act, 2000. Any subsequent use for a purpose other than the intended purpose is not authorised. The Commission does not accept liability for any infringement of third-party rights arising from unauthorised distribution or use of this examination paper.

Leaving Certificate – Higher Level

Technology Section A and Answerbook

Monday 22 June

Afternoon 2:00 - 4:30