



Coimisiún na Scrúduithe Stáit
State Examinations Commission

Leaving Certificate Examination 2026 Technology

Section B and Section C

Ordinary Level

Monday 22 June Afternoon 2:00 - 4:00

160 marks

Instructions

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.

THESE QUESTIONS ARE TO BE ANSWERED IN THE ANSWERBOOK ATTACHED TO **SECTION A**.

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Section B - Core - Answer Question 2 **AND** Question 3

Question 2 - Answer 2(a) **and** 2(b)

2 (a) The iPhone Air was released in 2025. With a thickness of 5.6 mm and weighing just 165 grams, it is the thinnest iPhone ever.

- (i) Briefly describe **one** technological advancement that has allowed such a thin phone be produced.
- (ii) Suggest **one** advantage for a consumer of using such a lightweight phone.



2 (b) Many individuals purchase a phone cover when they get a new phone.

- (i) Outline **two** benefits of using a phone cover.
- (ii) Suggest a suitable material for the manufacture of the phone cover shown. State **two** important properties of this material.
- (iii) Briefly describe, using notes and sketches, how the phone cover could be manufactured from your suggested material.



Phone cover

Answer 2(c) **or** 2(d)

2 (c) The iPhone uses a *USB-C to USB-C* charger cable and plug. It can charge the phone battery to 50% capacity in 20 minutes.



- (i) Explain what is meant by the abbreviation USB.
- (ii) Suggest **two** advantages of using a USB-C cable and plug to charge a phone.

OR

2 (d) The iPhone Air has a 48 *MP* main camera and an 18 *MP* front camera.

- (i) Explain what is meant by the abbreviation MP when referring to a camera.
- (ii) A 512 GB iPhone can store up to 100,000 photographs in its memory. They are saved as digital files using different image formats.
Name a type of image format used to save photographs.



Question 3 - Answer 3(a) **and** 3(b)

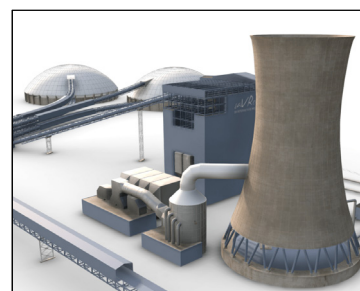
3 (a) In 2025, electricity generated from renewable sources of energy surpassed that from coal for the first time on record. It represents a major global shift towards clean energy.

- (i) Outline **two** benefits of using renewable sources of energy.
- (ii) Name **two** renewable sources of energy.



3 (b) Moneypoint is Ireland's largest electricity generation station with an installed capacity of 915 MW. It was a coal-burning power plant, but plans are in place to redevelop the site into a renewable energy hub which will include a 1,400 MW offshore wind farm.

- (i) Explain what is meant by the abbreviation MW when referring to electricity generation.
- (ii) Describe **two** energy conversions that take place in a coal-burning electricity generator.
- (iii) The average Irish household uses approximately 12 kWh of electricity per day. Typically, the cost per kWh is €0.40. Calculate the cost of electricity usage for one year.



Answer 3(c) **or** 3(d)

3 (c) A Gantt chart is a visual tool used in project management.

	Week 1	Week 2	Week 3	Week 4
Task A				
Task B				
Task C				
Task D				

- (i) Outline **two** advantages of using a Gantt chart for project management.
- (ii) Describe **one** consequence of not considering project management when building a renewable energy hub such as an offshore wind farm.

OR

3 (d) The image shows a miniature DC motor commonly used by students in Technology projects.

- (i) Draw a labelled diagram showing the operation of a circuit consisting of a DC motor, a battery, and a SPST switch.
- (ii) Briefly describe a situation in everyday life where controlling the speed of a motor would be useful.



Section C - Options - Answer **any one** of the five optional questions.

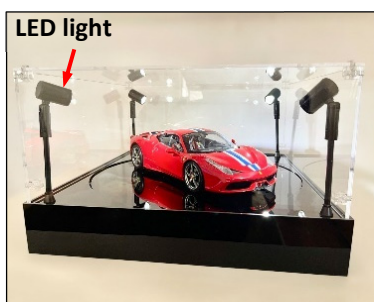
Option 1 - Applied Control Systems - Answer 1(a) and 1(b)

1 (a) Modern cars use *microcontroller* systems to ensure they operate safely and efficiently.

- (i) Explain what is meant by the term microcontroller.
- (ii) Name **two** sensors that are used with microcontroller systems in cars.



1 (b) The image shows a motorised turntable display that uses a microcontroller.



(i) Complete a flowchart to operate the motorised turntable display in the following sequence:

- When a button is pressed, the four LED lights turn on
- After two seconds, the turntable rotates
- After fifteen seconds, the LED lights turn off and the turntable stops rotating.

- (ii) Name a suitable motor that could be used to rotate the turntable.
- (iii) Suggest a modification to the flowchart that allows a melody (tune) to be played as the turntable rotates.

Answer 1(c) or 1(d)

1 (c) The image shows a robotic welding arm commonly used in industry.

- (i) State **one** advantage of using a robotic welding arm.
- (ii) Using notes and annotated sketches, describe what is meant by 'work envelope' when referring to robotics.



OR

1 (d) Shown in the image is a *pneumatically-powered* nail gun.

- (i) Explain what is meant by the term pneumatically powered.
- (ii) State **one** advantage of using pneumatic power for a nail gun. Suggest **one** other example of where pneumatics are used in everyday life.



Option 2 - Electronics and Control - Answer 2(a) and 2(b)

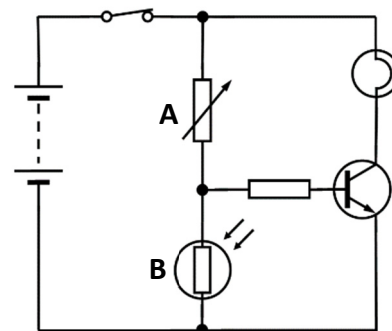
2 (a) Solar trees are an innovative way of incorporating solar panels into an urban landscape. They use photovoltaic panels to convert sunlight into electrical energy.



- (i) Outline **two** advantages of using solar trees in an urban area.
- (ii) Suggest **two** reasons why electrical energy generated using photovoltaic panels is often stored in batteries.

2 (b) The circuit diagram shows a dark-sensing circuit which is often used in project work.

- (i) Using the *Formulae and Tables* booklet, or otherwise, name components **A** and **B** in the circuit.
- (ii) Briefly describe the operation of the circuit.
- (iii) Explain the effect on the operation of the circuit, if components **A** and **B** are swapped.



Answer 2(c) or 2(d)

2 (c) Digital multimeters are commonly used in electronics.



- (i) State **two** uses for a digital multimeter in electronics.
- (ii) An LED light bulb in a circuit has a power rating of 3 Watts. Calculate the current that the light bulb will draw from a 9 V power supply.
(Note: $P = V \times I$)

OR

2 (d) The image shows an *IN4001 Diode* commonly used in electronic circuits.

- (i) Describe the function of a diode in a circuit.
- (ii) Outline how the cathode of a diode could be identified.



Option 3 - Information and Communications Technology

- Answer 3(a) and 3(b)

3 (a) Desktop computers are commonly used in workplaces, while tablets and laptops are more popular for home use.

- (i) Suggest **two** reasons why a desktop computer is more commonly used in the workplace.
- (ii) Explain the purpose of primary memory (RAM) in a computer.



3 (b) Computer networks perform many tasks in workplaces and in schools.



- (i) Explain what is meant by a computer network.
- (ii) Outline **two** advantages to using a network in a workplace or in a school.
- (iii) Briefly explain the difference between a LAN (Local Area Network) and a WAN (Wide Area Network).

Answer 3(c) or 3(d)

3 (c) Uploading and downloading are essential steps when transferring data over the internet.

- (i) Briefly explain the difference between uploading and downloading when referring to data transfer over the internet.
- (ii) Outline **two** cybersecurity measures that can be taken by individuals when transferring data over the internet.



OR

3 (d) Operating systems in computers or electronic devices require regular maintenance to ensure they operate as intended.

- (i) Explain what is meant by an operating system. Give **one** example of a commonly used operating system.
- (ii) Briefly describe how an operating system can be regularly maintained.



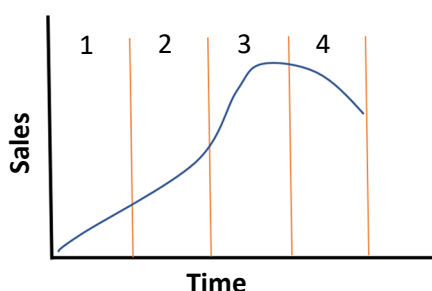
Option 4 - Manufacturing Systems - Answer 4(a) and 4(b)

4 (a) Computer Aided Manufacturing (CAM) is widely used in the manufacture of products.

- (i) Explain what is meant by computer aided manufacturing.
- (ii) Outline **two** benefits of using CAM systems in the manufacture of products.



4 (b) A product goes through several stages during its lifecycle. Many products follow a lifecycle similar to the one shown in the graph below.



- (i) Name the four main stages of a product lifecycle.
- (ii) Outline **two** reasons why it is important for a manufacturer to understand the lifecycle of a product.
- (iii) Briefly outline **one** method of increasing sales at stage 4 in the lifecycle of a product.

Answer 4(c) or 4(d)

4 (c) It is important for designers to consider what happens to a product at its end-of-life.

- (i) Describe **two** aspects that should be considered in relation to a product reaching its end-of-life.
- (ii) Outline **two** ways a designer can reduce the environmental impact at this stage.



OR

4 (d) The demand for new and existing products, such as sports jerseys, can change over time. It is essential for retail businesses to use capacity planning to ensure they can meet customers' changing needs in real time.

- (i) Briefly describe how a business could establish the level of demand for a new product.
- (ii) Outline **two** ways a business could expand its capacity to meet a higher demand for a product.



Option 5 – Materials Technology – Answer 5(a) and 5(b)

5 (a) *Hardwoods* and *softwoods* are commonly used in the manufacture of coffee tables.

- (i) Briefly outline the main differences between hardwoods and softwoods.
- (ii) Name **one** alternative material that could be used to manufacture the top of the table. Justify your selection.



5 (b) The image shows a leg assembly of the coffee table. It includes a bracket and a wheel, both made from steel.



Leg assembly

- (i) Describe **two** reasons why steel is a suitable material for the manufacture of the leg assembly.
- (ii) Explain what is meant by the term *ferrous* when referring to metals.
- (iii) Using notes and annotated sketches, describe a method of attaching the leg assembly to the table.

Answer 5(c) or 5(d)

5 (c) The leg assembly of the coffee table has been spray-painted.

- (i) Suggest **two** reasons why this process was carried out on the leg assembly of the coffee table.
- (ii) Outline **two** safety precautions that should be observed when applying paint to materials.

OR

5 (d) Engineered bamboo is a *composite* material used for manufacturing many products such as hurleys.

- (i) Describe, using **one** example, what is meant by the term composite when referring to materials.
- (ii) Suggest **two** reasons why engineered bamboo is a suitable material for manufacturing hurleys.



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Technology Section B and Section C

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Afternoon 2:00 - 4:00