Coimisiún na Scrúduithe Stáit
State Examinations Commission

Leaving Certificate Examination, 2019

Technology

Ordinary Level

Monday, 24 June
Afternoon, 2:00 - 4:00

There are **three** Sections in this paper. Attempt **all three** Sections.

Section A: Core - Short-answer questions.

Section B: Core - Long-answer questions.

Section C: Options - Long-answer questions.

Section A - Core *(72 marks)*

Instructions:

(a) *Answer **any nine** of the twelve questions in the spaces provided.*
All questions in Section A carry 8 marks.

(b) *Draw all sketches in pencil.*

(c) *Hand up this booklet at the end of the examination.*

(d) *Write your examination number in the box provided and on all other pages used.*

Centre Number

Section	Mark
Section A	
Section B	
Section C	
Total	
Grade	

Examination Number:

Section A. Answer **any nine** questions. All questions carry 8 marks.

1. The graphic shows a safety sign that is often displayed in Technology classrooms.

(i) State the meaning of this safety sign.

_____

_____

(ii) Safety signs are classified according to colour.

Explain what is meant by safety signs that are **blue** in colour.

_____

_____

2. A BER (Building Energy Rating) certificate is an indication of the energy performance of a home.

(i) Give **two** benefits of having an 'A' rated home.

1. _____

2. _____

(ii) Describe **one** way in which the BER of an older home could be improved.

_____

_____

3. The image shows a project that is made from *Live Edge* or *Light Gathering* acrylic.

(i) Suggest **one** advantage of using this type of acrylic for the manufacture of this project.

_____

_____

(ii) State **two** processes undertaken when finishing the edge of an acrylic sheet which has been cut with a saw.

1. _____

2. _____

4. For car manufacturers, driverless cars will shape their future manufacturing strategies.

(i) Give **two** reasons why car manufacturers are developing driverless cars.

1. _____

2. _____

(ii) Give **one** technological advancement which enables the development of driverless cars.

_____

5. On September 6th 2018, the Walney Extension became the world's largest offshore wind farm, covering 145 km^2 with 87 turbines.

(i) Give **one** advantage of offshore wind farms.

_____

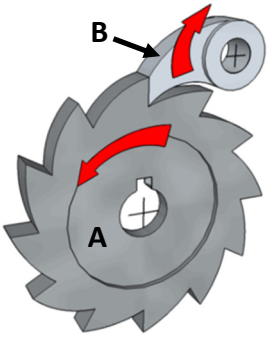
_____

(ii) State **two** energy conversions that take place in a wind turbine.

Conversion 1: _____

Conversion 2: _____

6. The graphic shows a mechanism which consists of two parts, labelled **A** and **B**.



(i) Name component **A** and component **B**.

Component **A**: _____

Component **B**: _____

(ii) Outline **one** practical application of the mechanism shown.

_____

_____

7. The image shows a push-car for a child, designed and manufactured by the Swiss designer Wolfgang Sirch. In the box provided, make a well proportioned 2D sketch of the push-car when viewed in the direction of arrow **A**.

8. *Universal Design* is the design and composition of an environment so that it can be accessed, understood and used to the greatest extent possible by all people regardless of age, size, ability or disability.

State **two** ways in which the walkway shown has taken the principles of Universal Design into consideration.

1. _____

_____

2. _____

_____

9. The image shows a combined table and magazine rack made from plywood.

(i) Suggest **two** reasons why plywood is a suitable material for the manufacture of this product.

1. _____

2. _____

(ii) Name **two** other manufactured boards commonly used in the manufacture of furniture.

1. _____

2. _____

10. The image opposite shows a desktop computer system.

Explain, with **one** example in **each** case, what is meant by the terms *hardware* and *software* when referring to a computer system.

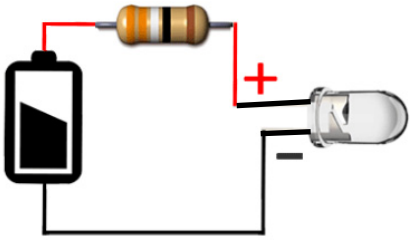
Hardware: _____

_____

Software: _____

_____

11. The graphic shows a Light Emitting Diode (LED), a resistor and battery connected in series in a circuit.



(i) What is the name of the positive leg of an LED?

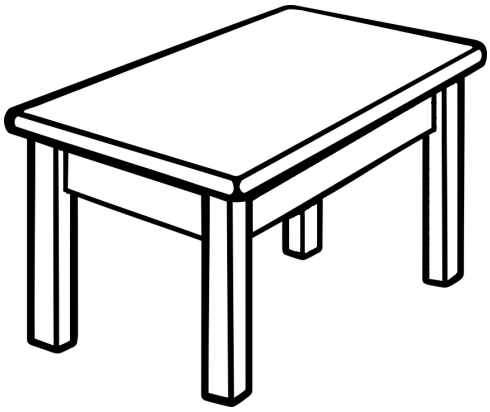
_____

(ii) The voltage (V) of the battery shown is 6 V. The voltage drop (V*f*) across the LED is 2 V and the maximum current (I*f*) that the LED can draw is 0.02 A. Calculate the minimum value of the resistor (R) required to protect the LED.

Note: $R = \frac{V - Vf}{If}$

Calculation:

12. Use **two** graphic techniques to enhance the representation of the table shown.



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