



*Leaving Certificate Examination, 2016*

# *Technology*

## *Ordinary Level*

*Friday, 24 June*  
*Morning, 9:30 - 11:30*

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** 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.

<b>Centre Number</b>

<b>Section</b>	<b>Mark</b>
Section A	
Section B	
Section C	
Total	
Grade	

**Examination Number:**

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

1. Wearable devices such as the activity tracker shown have become very popular. Some of these devices make use of *GPS* technology.

(i) Suggest **two** health benefits for a person who uses a smart device such as an activity tracker.

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_



(ii) Explain the abbreviation GPS.

\_\_\_\_\_  
\_\_\_\_\_

2.



The image shows a unique bike rack in Roanoke, Virginia, USA.

(i) Name a suitable *wood* for the bike rack.

Wood: \_\_\_\_\_

(ii) Describe how the wood chosen above could be treated to help prolong its life outdoors.

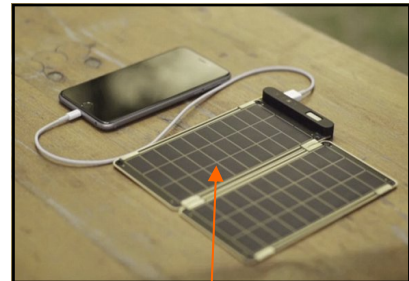
\_\_\_\_\_  
\_\_\_\_\_

3.

*Solar Paper*® is one of the thinnest and lightest personal solar chargers in the world. A standard smart phone can be fully charged in about two hours using this device.

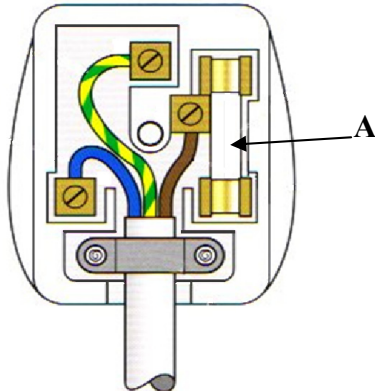
Give **two** advantages of using Solar Paper.

- 1. \_\_\_\_\_  
\_\_\_\_\_
- 2. \_\_\_\_\_  
\_\_\_\_\_



**Solar Paper**®

4. The graphic shows the wiring of a domestic 3-pin plug.



(i) State the colour coding of the *earth wire* and the *neutral wire*.

**Earth wire:** \_\_\_\_\_

**Neutral wire:** \_\_\_\_\_

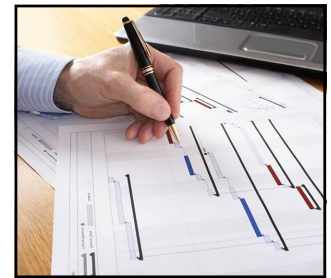
(ii) What is the purpose of fuse A?

\_\_\_\_\_  
\_\_\_\_\_

5. Students often construct a *Gantt chart* during the planning stage of a project task.

(i) Explain what is meant by a Gantt chart.

\_\_\_\_\_  
\_\_\_\_\_



(ii) Give **one** benefit for a road building company which uses Gantt charts when planning its work.

\_\_\_\_\_  
\_\_\_\_\_

6. The image shows a bike frame that has been *prototyped* using a 3D printer.

Give **two** advantages of producing a prototype before manufacturing a product.

1. \_\_\_\_\_

\_\_\_\_\_

2. \_\_\_\_\_

\_\_\_\_\_



7. In the box provided, make a well proportioned 2D sketch of the chair shown when viewed in the direction of the arrow A.



8. The image shows an LED mounted on a PCB.

- (i) Explain the abbreviation PCB.

\_\_\_\_\_



- (ii) Calculate the value of the *voltage* across the LED if the current is 0.012 amps and the resistance of the LED is 200 ohms.

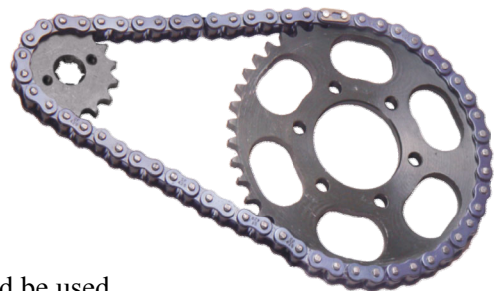
**Note:**  $V = I \times R$

Calculation:

9. The image shows a mechanism commonly used to transmit rotary motion from one shaft to another.

- (i) Name the mechanism shown.

\_\_\_\_\_



- (ii) Give **one** example of where this mechanism could be used.

\_\_\_\_\_  
\_\_\_\_\_

**10.** The image shows a machine commonly used in Technology workshops.

(i) Name the machine shown.

\_\_\_\_\_

(ii) Give **two** specific safety precautions which should be observed when using this machine.

1. \_\_\_\_\_

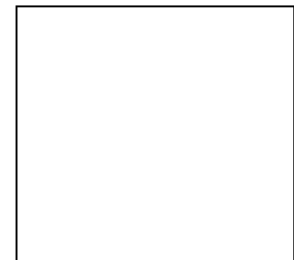
2. \_\_\_\_\_



**11.** Steel beams are often used to construct the frame structure of buildings.



(i) In the box provided, sketch the profile (cross-section) of **one** steel beam used in frame structures.



(ii) Name **one permanent** and **one semi-permanent** joint used to assemble beam structures.

**Permanent joint:** \_\_\_\_\_

**Semi-Permanent Joint:** \_\_\_\_\_

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



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