Practice Question Set For GCSE
**Subject : Physics**
**Paper-2 Topic: Waves (Low Demand Questions)**

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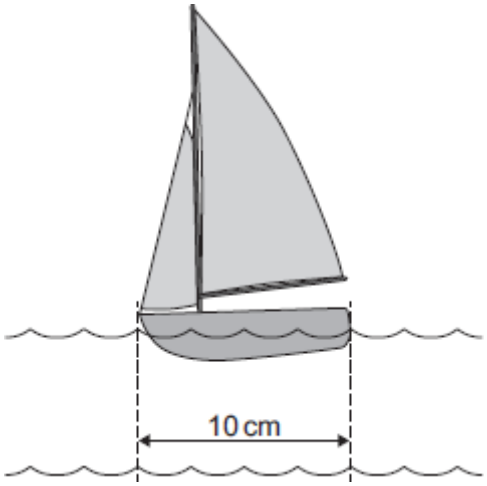
**Name of the Student**:_____
**Max. Marks : 17 Marks** **Time : 17 Minutes**

## Q1.

A scientist tests a design for a sailing boat using a scale model in a tank of water.




(a) Waves are produced on the surface of the water.

Use the diagram to calculate the wavelength of one wave.

_____

_____

Wavelength = _____ cm

**(2)**

(b) After testing the scale model, a full-size boat is built. This boat is tested at sea.

(i) The waves at sea have a wavelength of 6 m. The frequency of the waves is 0.5 Hz.

Calculate the speed of the water waves.

Use the correct equation from the Physics Equations Sheet.

_____

_____

Speed = _____ m/s

**(2)**

(ii) Suggest why a scale-model is tested before a full-size boat is built.

_____

_____

**(1)**

**(Total 5 marks)**

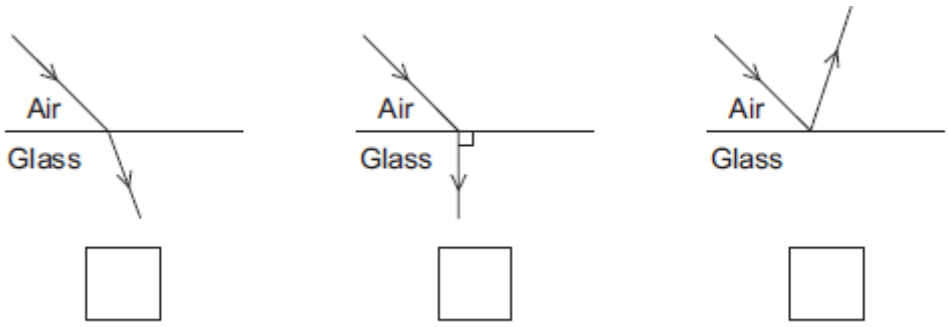
## Q2.

This question is about the properties of light.

(a) Which diagram, **1**, **2** or **3**, shows the path a ray of light takes when travelling from air **into** glass?

Tick ( ✓ ) the box under the correct diagram.

**Diagram 1** **Diagram 2** **Diagram 3**

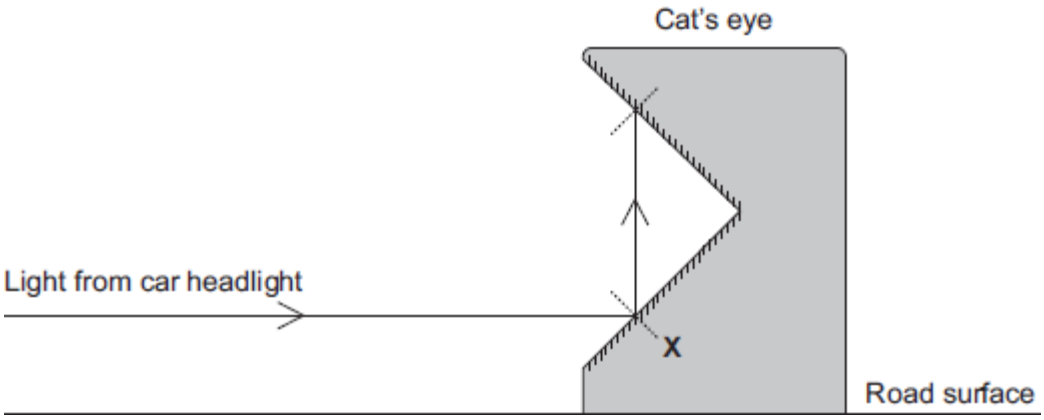



**(1)**

(b) 'Cat's eyes' are used on roads as markers. They reflect light from car headlights.

**Diagram 4** shows the path of a ray of light entering a 'cat's eye'.

**Diagram 4**




(i) Continue the path of the ray of light on **Diagram 4**.

Show the direction of the ray.

**(2)**

(ii) What is the name given to the dotted line on **Diagram 4** labelled **X**?

_____

**(1)**

**(Total 4 marks)**

## Q3.

A student investigates the infrared radiation being emitted by different coloured surfaces to the surroundings.

(a) Draw a ring around each correct answer to complete the sentences.

(i) All objects emit and | absorb | conduct | insulate | infrared radiation.

**(1)**

(ii) Compared with cooler objects, hotter objects emit | less | the same amount of | more | infrared radiation.

**(1)**

(b) The student pours 300 $cm^3$ of hot water into each of 3 metal cubes and seals the top of each cube.

(i) Draw a ring around the correct answer to complete the sentence.

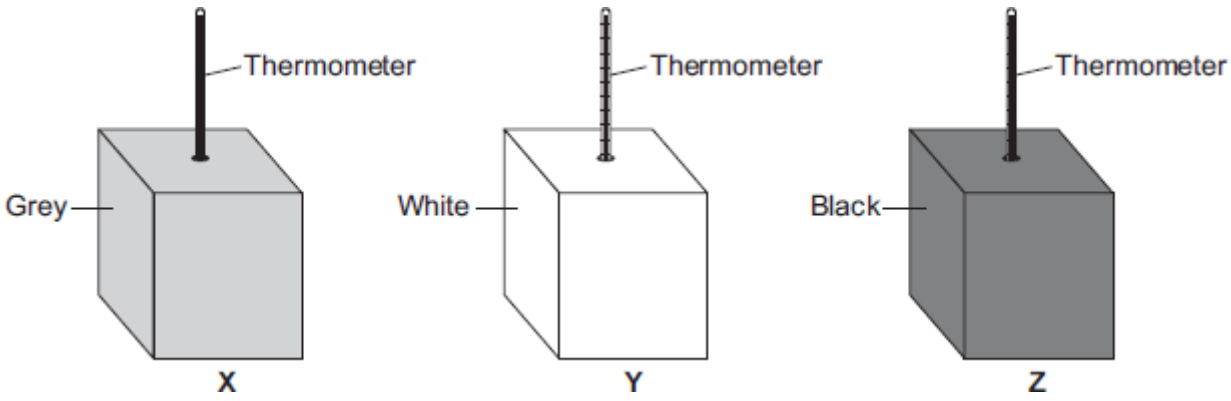
Energy is transferred through the sides of the metal cubes by | conduction. | convection. | radiation.

**(1)**

Each cube has the same volume.

Each cube is a different colour.

The temperature of each cube is recorded over 10 minutes.

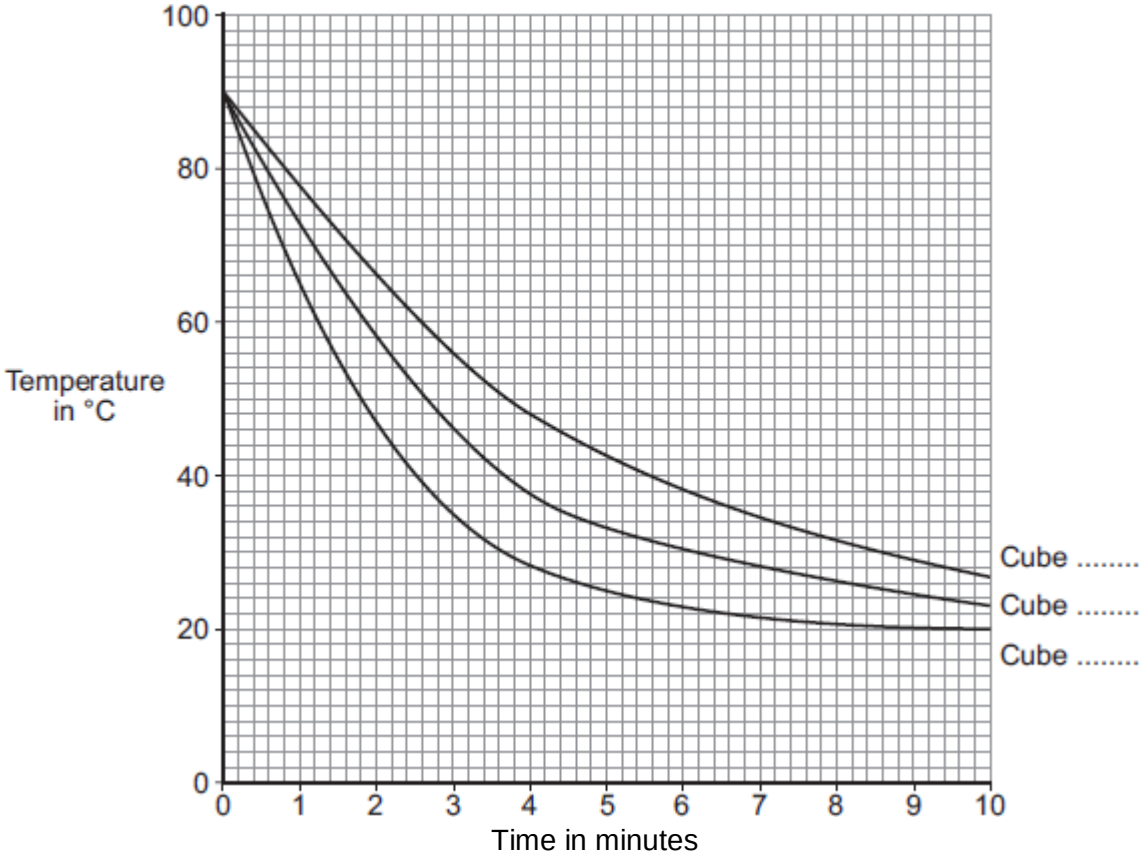



(ii) What is the independent variable in the investigation?

_____

**(1)**

The results of the investigation are shown on the graph.




(iii) Write the correct letter for each cube, **X**, **Y** or **Z**, next to the lines shown on the graph.

**(2)**

(iv) All three cubes had the same starting temperature. This was important in the investigation.

Suggest why.

_____

_____

**(1)**

(v) Some variables are kept the same in an investigation.

What name is given to these variables?

_____

**(1)**

**(Total 8 marks)**