Practice Question Set For GCSE
Subject : Physics
Paper-2 Topic: GCSE Triple Science_Waves (LDQ)

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Name of the Student:_____
Max. Marks : 19 Marks **Time : 19 Minutes**

Q1.

(a) Use the words from the box to complete the following sentences.

conduction	**convection**	**radiation**

(i) The transfer of thermal energy (heat) by the movement of hot liquids

is called _____ .

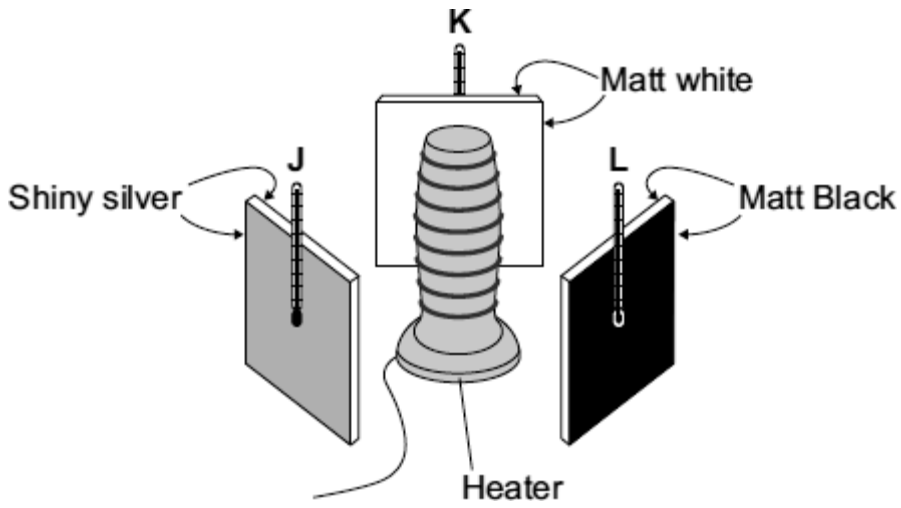
(1)

(ii) The transfer of thermal energy (heat) from one particle to another

is called _____ .

(1)

(b) A student set up the following equipment. The 3 metal plates are the same distance from the heater. The surfaces of each of the 3 metal plates are different colours.



The student switched the heater on for 10 minutes. The thermometers were read before the heater was switched on. The thermometers were read again just after the heaters were switched off.
The readings are shown in the table.

	Temperature before switching on in °C	Temperature after switching on in °C
1	19	21

2	19	29
3	19	23

(i) Which set of readings, **1**, **2** or **3**, is most likely to have been taken from the thermometer labelled **L**?

_____

Give a reason for your answer.

_____

_____

(2)

(ii) Which **one** of the following was **not** a control variable in this experiment?

Put a tick (✓) in the box next to your answer.

the distance between the heater and the metal plates ☐

the power of the heater ☐

the temperature before the heater was switched on ☐

the colour of the metal plates ☐

(1)

(iii) Suggest **one** advantage of using a temperature sensor, data logger and computer, rather than a thermometer to carry out this experiment.

_____

_____

(1)

(c) The picture shows a fire fighter putting out a forest fire. The fire fighter's clothing has thick thermal padding inside and a light coloured, fire proof, shiny layer outside.

(i) What is the main way that heat is transferred through the air from the fire to the fire fighter?

_____

_____

(1)

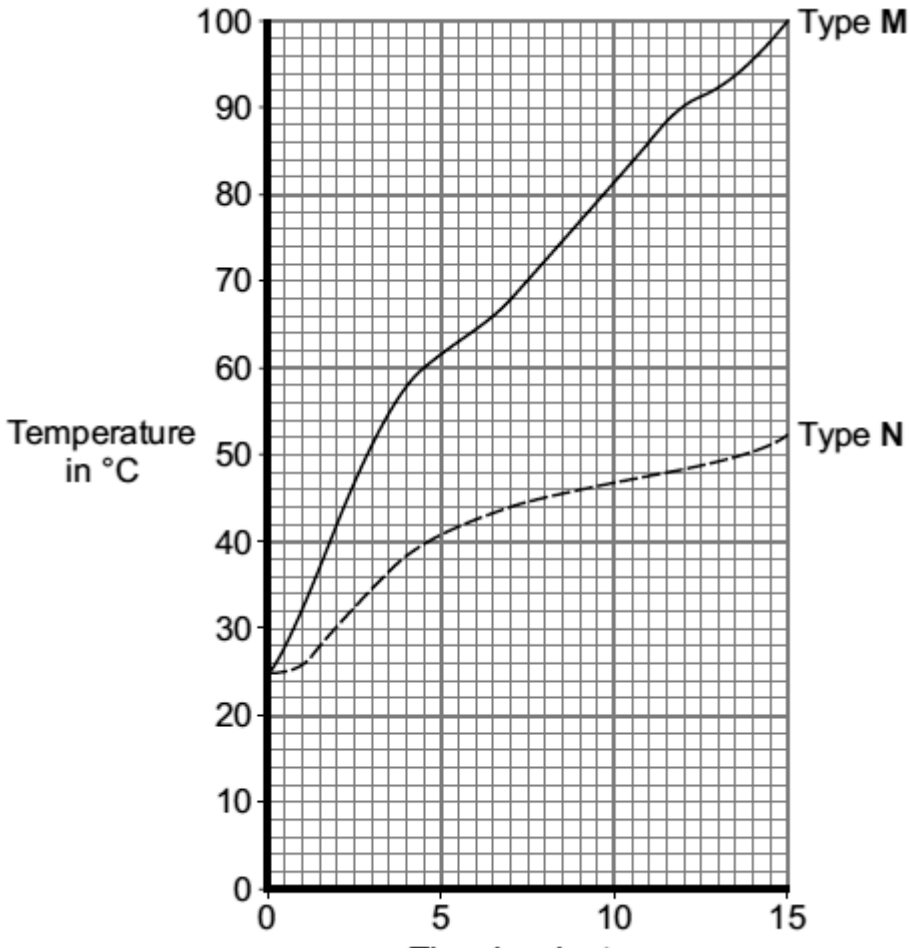
(ii) Why is the outside layer of the clothing shiny?

_____

_____

(1)

(d) The graph shows the result of a laboratory test on two types of thermal padding. Each type of padding was put onto a very hot metal surface and the temperature inside the padding was taken every minute.



Which type of padding, **M** or **N**, would it be best to use inside the fire fighter's clothing?

_____

Give a reason for your answer.

_____

_____

(1)

(Total 9 marks)

Q2.

Ultrasound waves are very high frequency sound waves. They cannot be heard by humans.

(a) Ultrasound waves can be used to clean jewellery.

The jewellery is put into a container of cleaning fluid.

Complete each sentence to explain how ultrasound can clean jewellery.

The ultrasound generator makes the molecules of the cleaning fluid

_____ . The molecules knock particles of _____

from the surface of the jewellery.

(2)

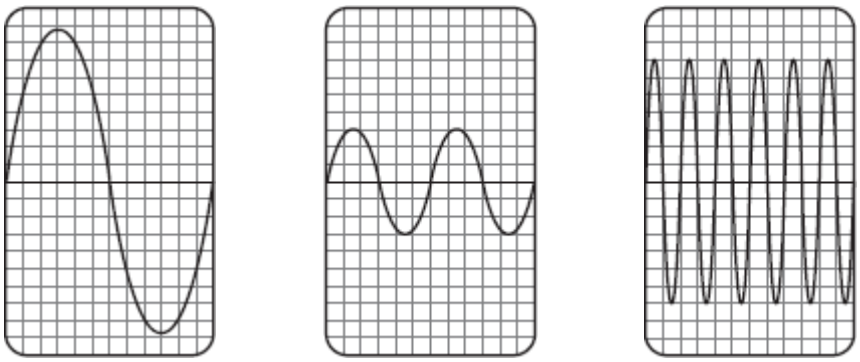
(b) Give a medical use for ultrasound.

_____

(1)

(c) Ultrasound waves can be represented on the screen of a cathode ray oscilloscope (CRO).

The diagrams show three ultrasound waves.
Each wave is represented on an identical CRO screen, **A**, **B** and **C**.



Screen **A** Screen **B** Screen **C**

(i) How many complete waves are shown on screen **B**? _____

(1)

(ii) Which screen shows the waves with the highest frequency?

Screen _____

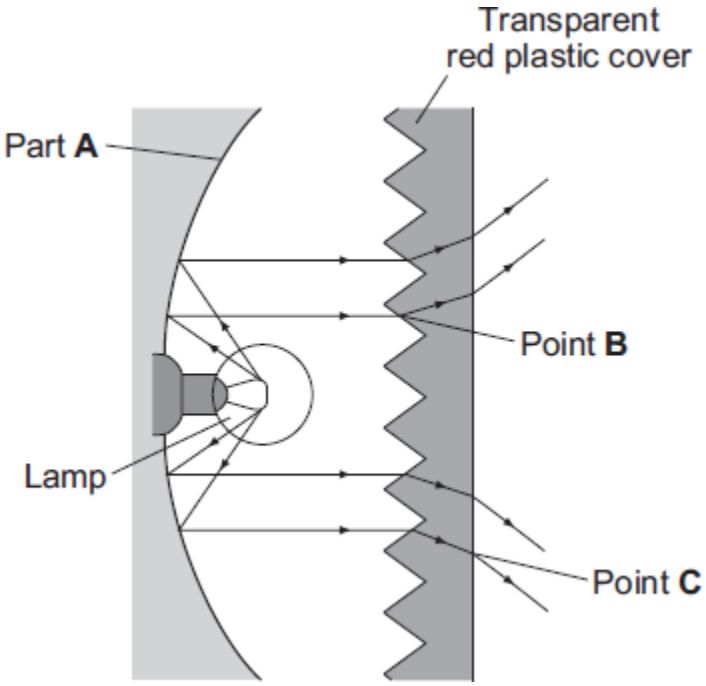
(1)

(Total 5 marks)

Q3.

At night, it is important that the lights of a car can be seen by other drivers but it is dangerous if these lights dazzle them.

The diagram shows a rear light of a car.



(a) (i) Name part **A**.

_____

(1)

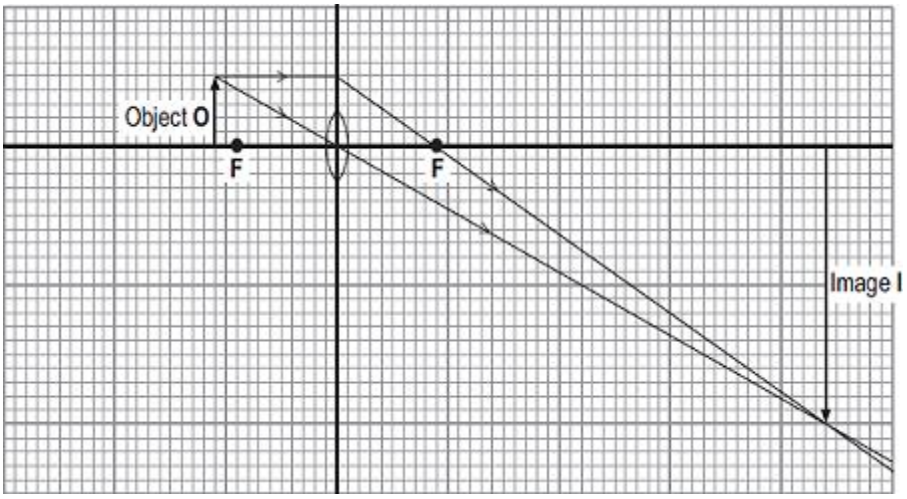
(ii) Name the process which occurs at point **B** and at point **C**.

_____

(1)

(b) A headlamp of a car contains a lens.

The ray diagram shows the position and size of the image, **I**, of an object, **O**, formed by a lens similar to the one inside a car headlamp.



(i) What type of lens is shown in the ray diagram?

Draw a ring around your answer.

converging **diverging** **plane**

(1)

(ii) The ray diagram is drawn to scale.

Use the equation in the box to calculate the magnification produced by the lens.

$$\text{magnification} = \frac{\text{image height}}{\text{object height}}$$

Show clearly how you work out your answer.

_____

_____

Magnification = _____

(2)

(Total 5 marks)