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

Merit Minds
www.merit-minds.com
Exam Preparation and Free Resources

Name of the Student:_____
Max. Marks : 12 Marks **Time : 12 Minutes**

Q1.

(a) Sound and light are different types of waves.

Give **two** similarities and **two** differences between sound waves and light waves.

_____

_____

_____

_____

_____

_____

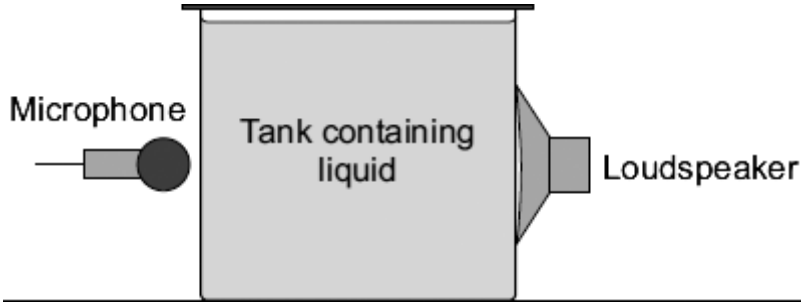
_____

_____

(4)

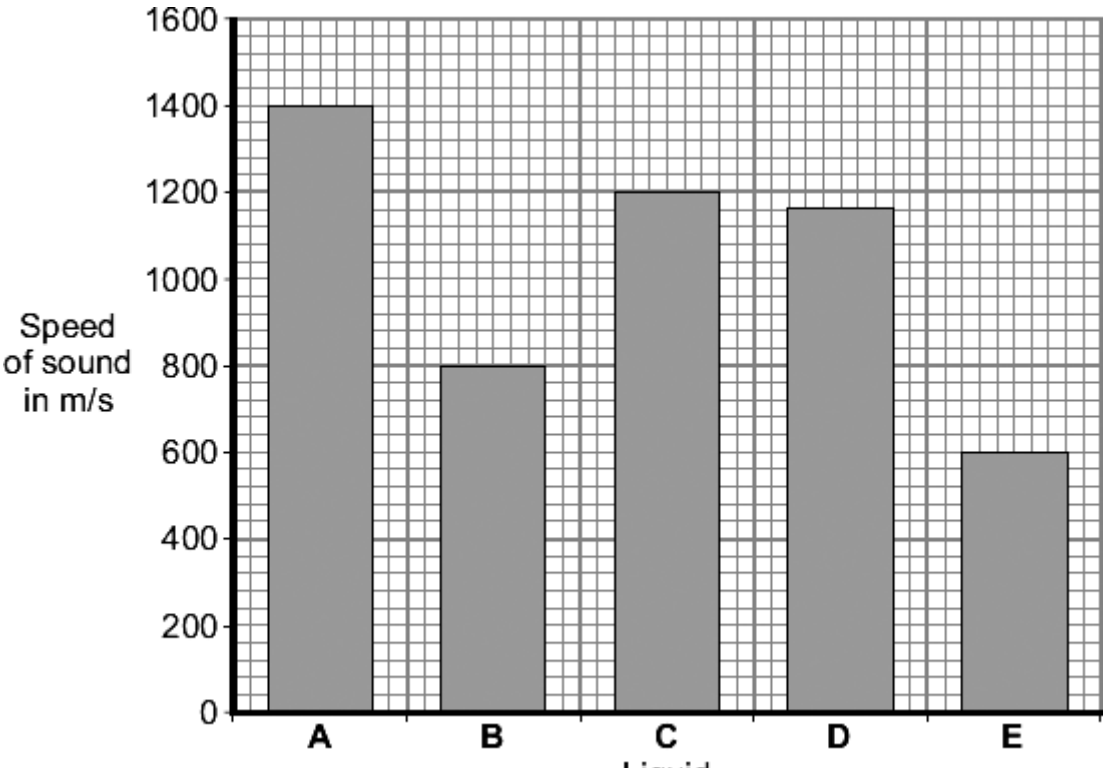
(b) A student does an experiment to investigate the speed of sound in different liquids.

The student uses the apparatus shown.



A loudspeaker makes a sound wave. The sound wave travels through the liquid in the tank. The time it takes to travel this distance is used to calculate the speed of sound.

The bar chart shows the student's results.



(i) When a sound wave with a frequency of 4800 hertz passes through one of the liquids, it has a wavelength of 0.25 m.

Calculate the speed of the wave and identify the liquid used.

Use the correct equation from the Physics Equations Sheet.

Show clearly how you work out your answer.

_____

_____

_____

_____

_____

Speed = _____ m/s

The liquid used was _____

(3)

(ii) The student's hypothesis was:
'There is a link between the density of a liquid and the speed of sound in the same liquid.'

Liquid	Density in g/cm^3	Speed of sound in m/s
Ethoxyethane	0.71	985
Ethanol	0.80	1150
Kerosene	0.82	1300

Water	1.00	1500
Mercury	13.50	1450

Use the information in the table to decide whether the student's hypothesis was completely correct or not.

Was the student's hypothesis completely correct?

Draw a ring around your answer. **Yes** / **No**

Give reasons for your answer.

_____

_____

_____

_____

(2)

(Total 9 marks)

Q2.

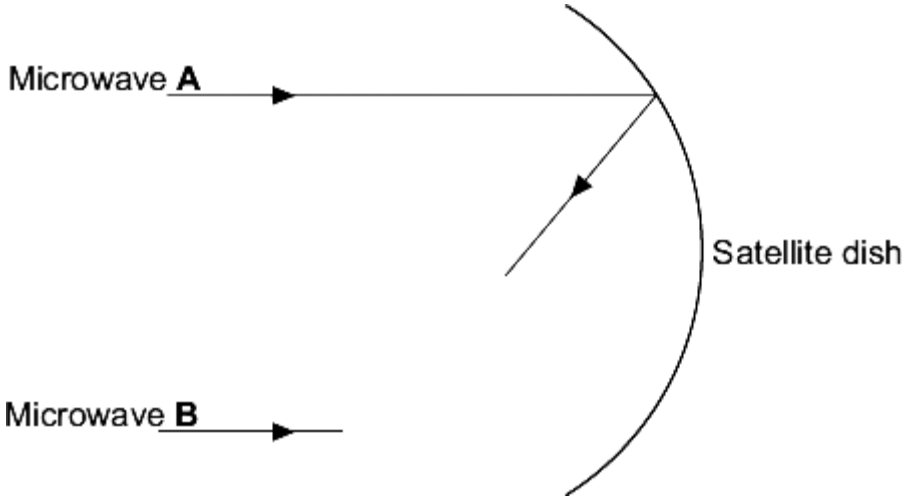
Some TV signals are transmitted to a satellite in space and back to Earth. A satellite dish is fixed to a house. The satellite dish receives the TV signal. Microwaves are used for satellite TV transmission.

Photograph supplied by iStockphoto/Thinkstock

(a) Why are microwaves used, rather than radio waves, to transmit TV signals to and from satellites in space?

(1)

(b) The shape of the satellite dish allows microwaves to be focused at the receiver.
The diagram shows how microwave **A** is reflected by the satellite dish.



(i) Complete the diagram to show how microwave **B** is reflected by the satellite dish.

(1)

(ii) Draw on the diagram where the receiver should be placed.

For the receiver, use this symbol: ▭

(1)

(Total 3 marks)