Practice Question Set For GCSE
Subject : Physics
Paper-1 Topic : Waves

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

Q1.

Some questions must be answered with a cross in a box (☒). If you change your mind about an answer, put a line through the box (☒) and then mark your new answer with a cross (☒).

The human ear can only detect frequencies below ultrasound and above infrasound.

(i) Which of these gives the approximate range of frequencies for the human ear?

(1)

- ☐ **A** 2 kHz to 2 Hz
- ☐ **B** 20 kHz to 20 Hz
- ☐ **C** 2 000 kHz to 2 kHz
- ☐ **D** 200 kHz to 20 kHz

(ii) Suggest **two** reasons why there are limits to the frequencies that a human ear can detect.

(2)

1 .....

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2 .....

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(Total for question = 3 marks)

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Q2.

A class is learning about refraction of waves.
The teacher shows them a demonstration using a battery-powered toy car travelling across a smooth road and onto some sand.
The car slows down as it enters the sand.

Figure 7 shows the car just before it meets the sand.

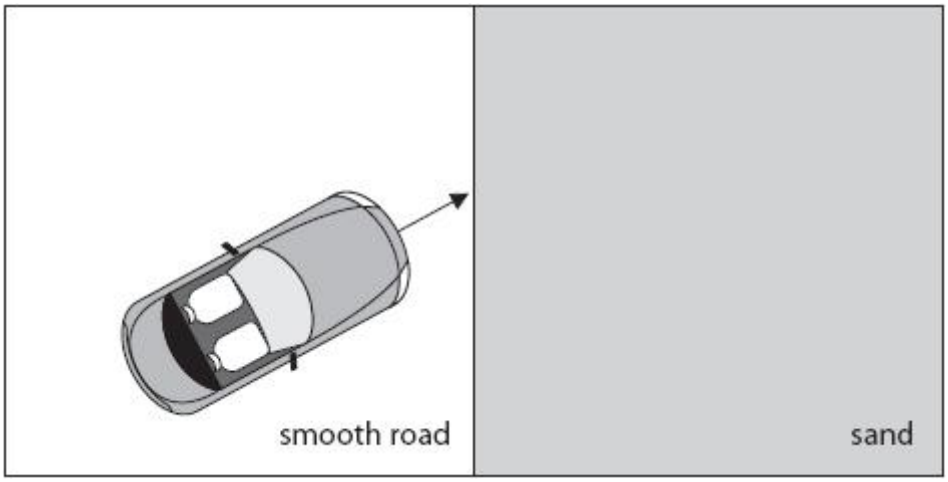


Figure 7

(i) Draw an arrow on the diagram to show the direction of the car as it travels across the sand.

(1)

(ii) Explain why this is a useful model for refraction of light.

(2)

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(Total for question = 3 marks)

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Q3.

Sound travels slower in air than it does in water.

Figure 9 shows the direction of travel of a sound wave approaching a boundary between air and water.

The sound wave refracts at the boundary between air and water.

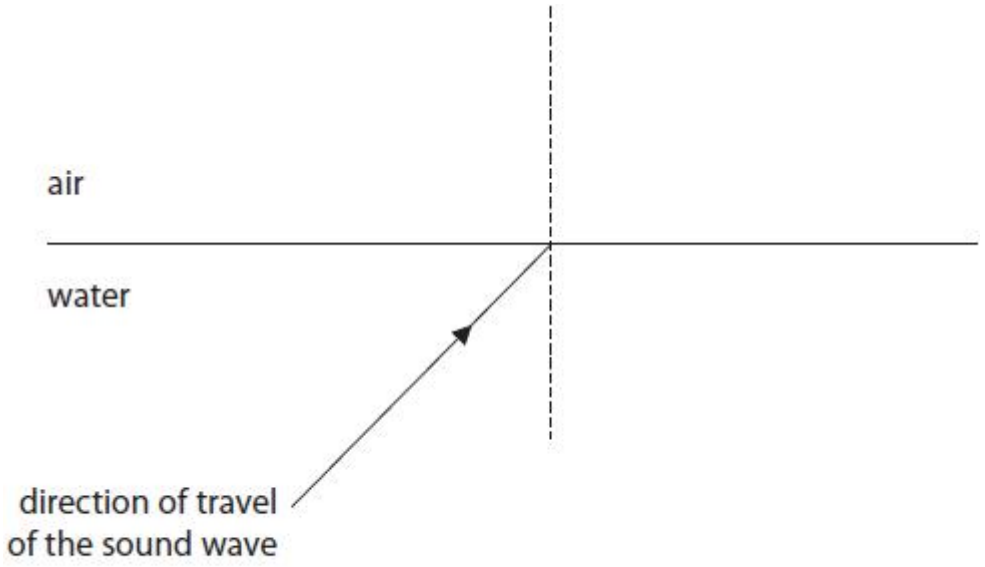


Figure 9

Complete the diagram in Figure 9 to show the direction the sound wave travels in the air.

(2)

(Total for question = 2 marks)

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Q4.

Scientists believe that dolphins use sound waves to detect objects under water.

Describe how a dolphin could use sound waves to determine which of two objects is nearer to it.

You may draw a diagram to help your answer.

(3)

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(Total for question = 3 marks)

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Q5.

Figure 8 shows a long metal rod and a hammer.
The rod is hit at one end by the hammer.
This causes a sound wave to travel along the inside of the metal rod.

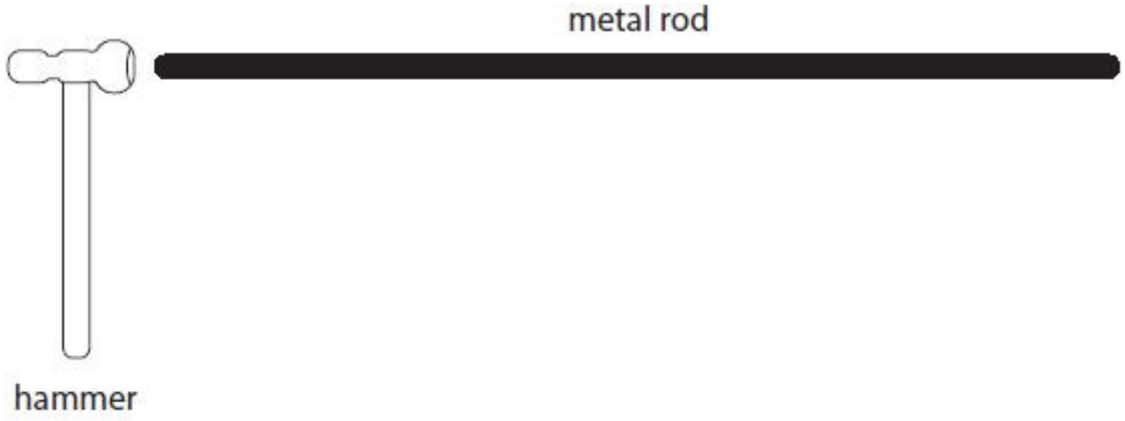


Figure 8

Describe how hitting the rod causes a sound wave to travel along the inside of the rod.

(2)

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(Total for question = 2 marks)

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Q6.

To investigate refraction in a rectangular glass block a student uses the apparatus shown in Figure 5.

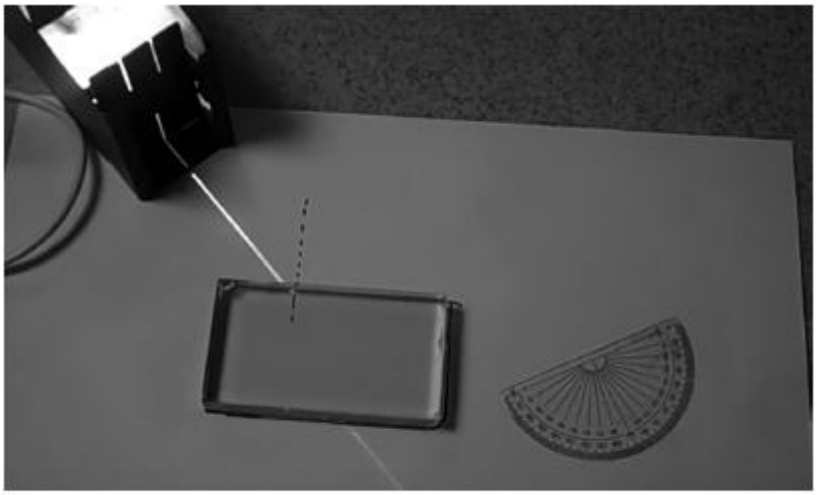


Figure 5

Describe how the student should measure the angle of refraction.

(2)

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(Total for question = 2 marks)

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Q7.

Describe the difference between 'infrasound' and 'ultrasound'.

(2)

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(Total for question = 2 marks)

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