Practice Question Set For GCSE
Subject : Physics
Paper-1 Topic : 4_ Waves

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Name of the Student:_____
Max. Marks : 18 Marks **Time : 18 Minutes**

Q1.

The diagram in Figure 4 shows two students, P and Q, trying to measure the speed of sound in air.

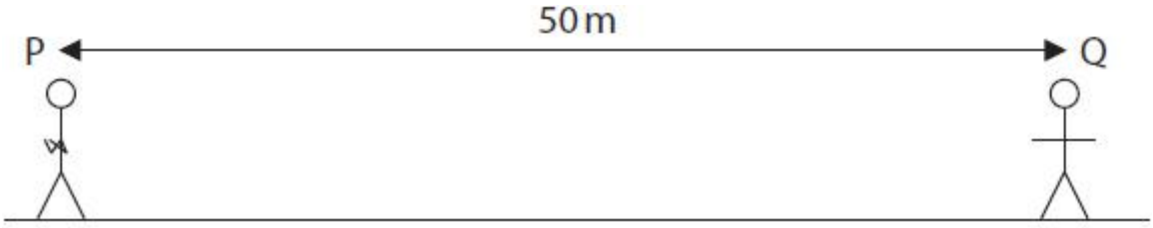

Figure 4

P will clap his hands together.

When Q sees P clap his hands, she will start a timer.

When Q hears the clap, she will stop the timer.

Explain **one** way the students could improve their method.

(2)

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(Total for question = 2 marks)

Q2.

Figure 4 is a simplified diagram to show radio waves from a transmitter moving upwards, then meeting a boundary between lower and upper layers of the atmosphere.

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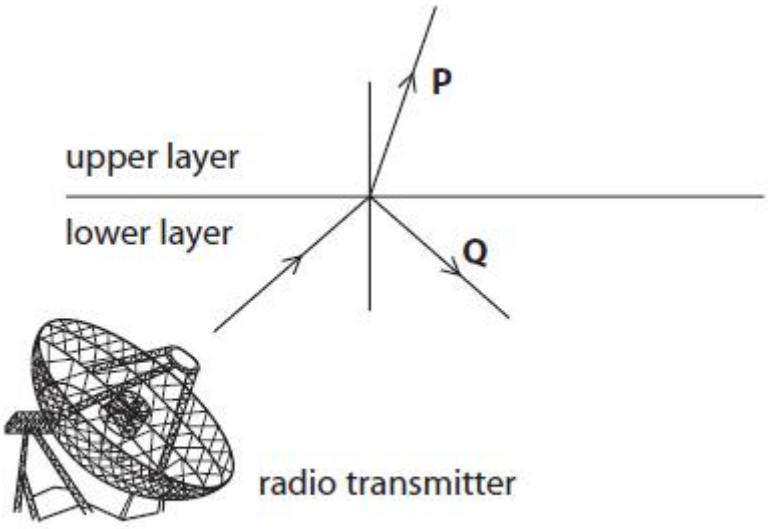

Figure 4

Explain what happens to the radio waves after they meet the boundary between the lower and upper layers as shown in Figure 4.

Your explanation should refer to changes in direction and speed of the waves.

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(Total for question = 4 marks)

Q3.

Figure 7 shows the difference in refraction of sound waves and light waves when these waves travel from air into water.

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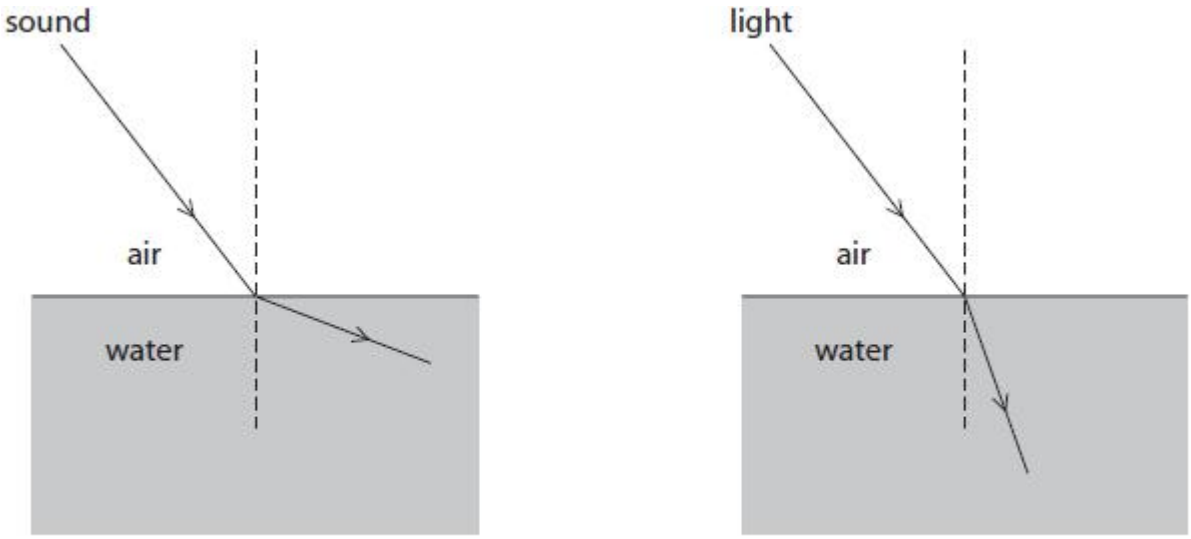

Figure 7

Explain why the refraction of the sound wave is different from the refraction of the light wave in Figure 7.

(3)

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(Total for question = 3 marks)

Q4.

The speed of light is 3.0×10^{8} m/s.

The wavelength of yellow light is 5.8×10^{-7} m.

Calculate the frequency of yellow light.

State the unit.

Use the equation

$$\text{frequency} = \frac{\text{speed}}{\text{wavelength}}$$

(3)

frequency = ... unit .....

(Total for question = 3 marks)

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Q5.

When white light crosses the boundary between air and glass, it can split up into the colours of the spectrum. Explain, in terms of speed, why the light behaves like this.

(3)

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(Total for question = 3 marks)

Q6.

State **three** differences between radio waves and sound waves.

(3)

1 .....
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2 .....
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3 .....
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(Total for question = 3 marks)

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