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

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Name of the Student:_____
Max. Marks : 22 Marks **Time : 22 Minutes**

Q1.

Answer the question with a cross in the box you think is correct (☒). If you change your mind about an answer, put a line through the box (☒) and then mark your new answer with a cross (☒).

A sound wave can transfer information across a room.

Which row of the table shows what else a sound wave can transfer?

(1)

	can transfer energy	can transfer air
☐ **A**	yes	yes
☐ **B**	yes	no
☐ **C**	no	yes
☐ **D**	no	no

(Total for question = 1 mark)

Q2.

Answer the question with a cross in the box you think is correct ☒ . If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☒ .

Figure 5 shows a wave on the surface of water.

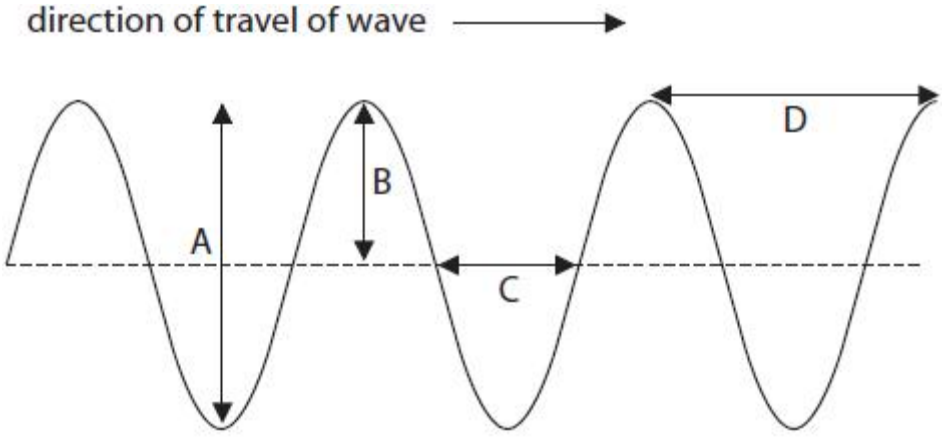


Figure 5

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(i) Which of the arrowed lines shows the amplitude of the wave?

(1)

- ☐ **A**
- ☐ **B**
- ☐ **C**
- ☐ **D**

(ii) Explain why the wave shown in Figure 5 is a transverse wave.

(2)

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(Total for question = 3 marks)

Q3.

Answer the question with a cross in the box you think is correct (☒). If you change your mind about an answer, put a line through the box (☒) and then mark your new answer with a cross (☒).

Which of these always increases as a sound gets louder?

(1)

- ☐ **A** amplitude
- ☐ **B** frequency
- ☐ **C** speed
- ☐ **D** wavelength

(Total for question = 1 mark)

Q4.

Answer the question with a cross in the box you think is correct (☒). If you change your mind about an answer, put a line through the box (☒) and then mark your new answer with a cross (☒).

Figure 4 shows a water wave.

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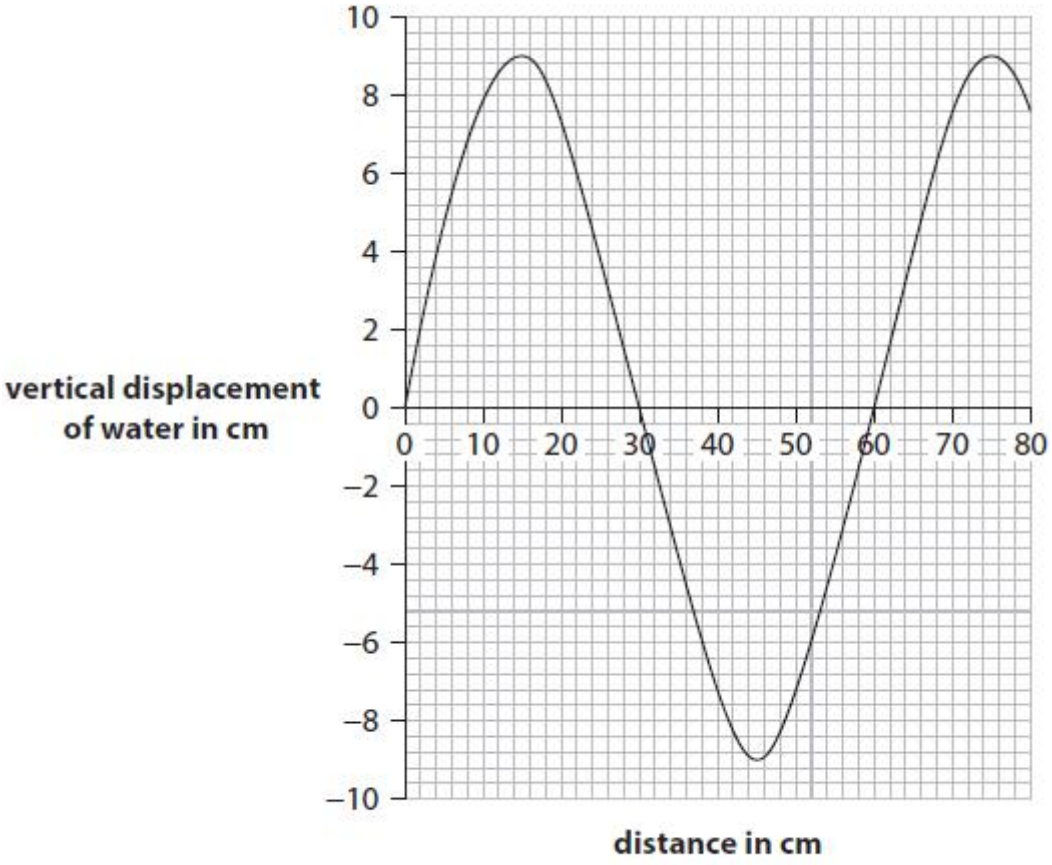


Figure 4

Which of these is the amplitude of the wave shown in Figure 4?

(1)

- ☒ **A** 9 cm
- ☒ **B** 18 cm
- ☒ **C** 30 cm
- ☒ **D** 60 cm

(Total for question = 1 mark)

Q5.

Figure 2 shows water waves spreading out from a source.

A student measures the wavelength of the waves.

He uses a ruler to measure the distance from one crest to the next crest.

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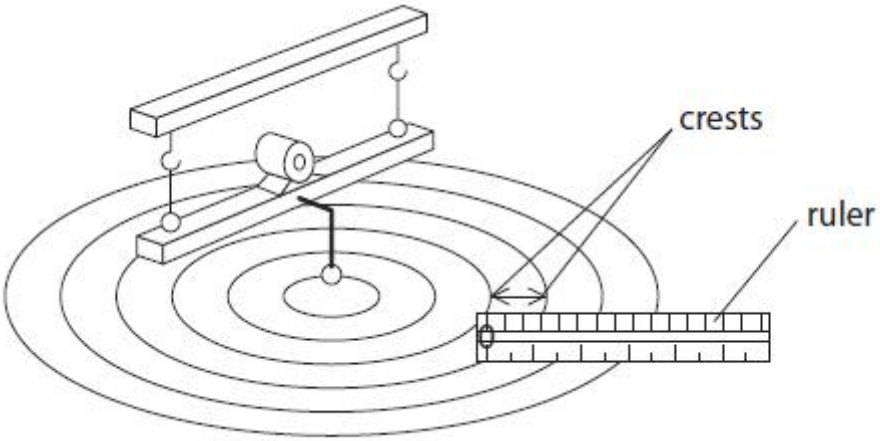


Figure 2

Explain how to improve the student's method for measuring the wavelength.

(2)

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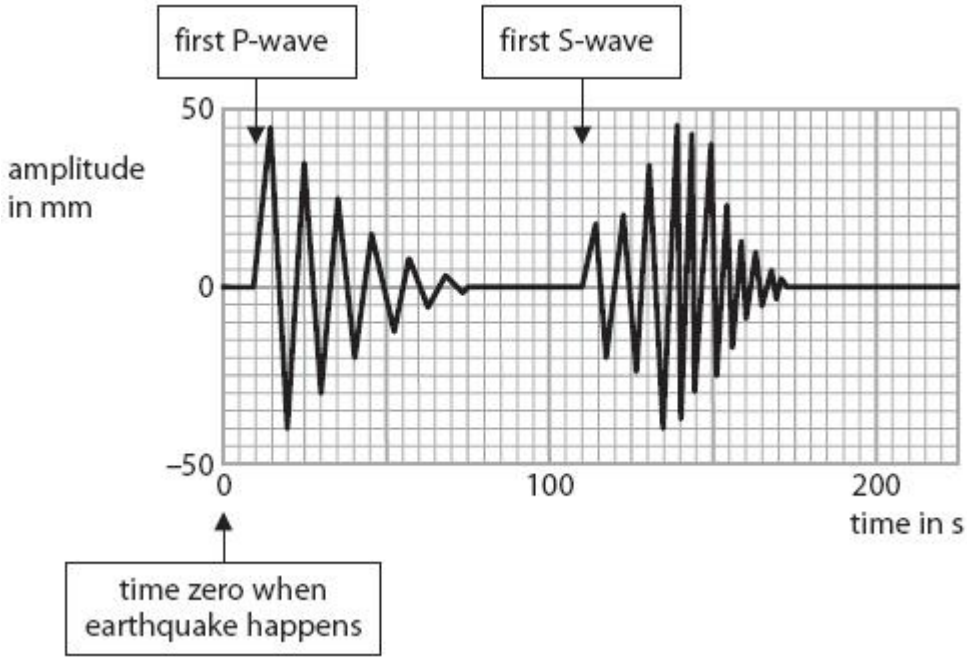
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(Total for question = 2 marks)

Q6.

The chart shows the arrival of earthquake waves at an earthquake monitoring station.



The S − P time (S minus P time) for earthquake waves is the time difference between the arrival of the first P wave and the first S wave.

Use the chart to estimate the S − P time for the earthquake waves shown.

(2)

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S − P time =.....seconds

Q7.

The photograph shows a pulse oximeter. This is used to show the heart rate and the amount of oxygen in the blood.



(a) (i) Where is the oximeter usually placed to take measurements?
Put a cross (☒) in the box next to your answer.

(1)

☒ **A** on the finger

☒ **B** over the heart

☒ **C** on the neck

☒ **D** on the wrist

(ii) There are two LEDs used in an oximeter.
One emits visible light.
State what type of radiation the other LED emits.

(1)

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(iii) The oximeter shows a heart rate of 89 beats per minute.
Calculate the frequency in beats per second.

(2)

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(iv) Calculate the time between each heartbeat.
Use the equation

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$$\text{time between heartbeats} = \frac{1}{\text{frequency}}$$

(2)

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*(b) Doctors use an electrocardiogram (ECG) machine to monitor the action of a person's heart.

Describe how a doctor can use an ECG machine to collect and display information from a person's beating heart in order to check heart action.

You may draw a labelled diagram to help with your answer.

(6)

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(Total for Question = 12 marks)

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