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.

Sound waves are longitudinal waves.

Water waves are transverse waves.

Describe the difference between longitudinal waves and transverse waves.

(3)

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(Total for question = 3 marks)

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Q2.

(a) Seismic (earthquake) waves can be either P-waves or S-waves.

Which row of the table is correct for P-waves?
Put a cross (☒) in the box next to your answer.

(1)

	type of wave	can they be refracted?
☒ **A**	longitudinal	yes
☒ **B**	transverse	no
☒ **C**	longitudinal	no
☒ **D**	transverse	yes

(b) Explain why it is difficult to predict when an earthquake will happen.

(2)

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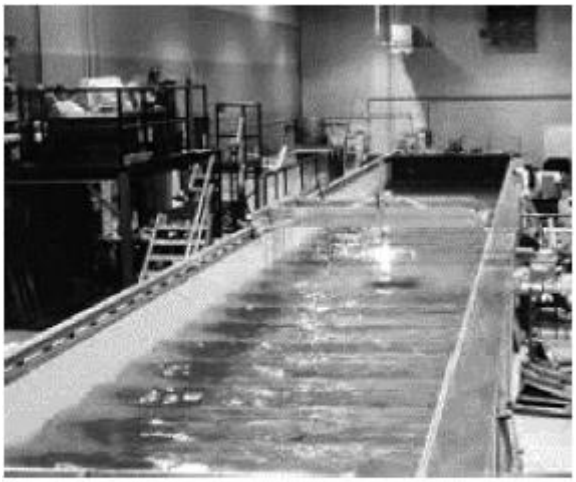
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Q3.

Figure 11 shows a large tank of water.



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Figure 11

The tank of water is used to study water waves.

Figure 13 shows part of the inside of the Earth below the surface.

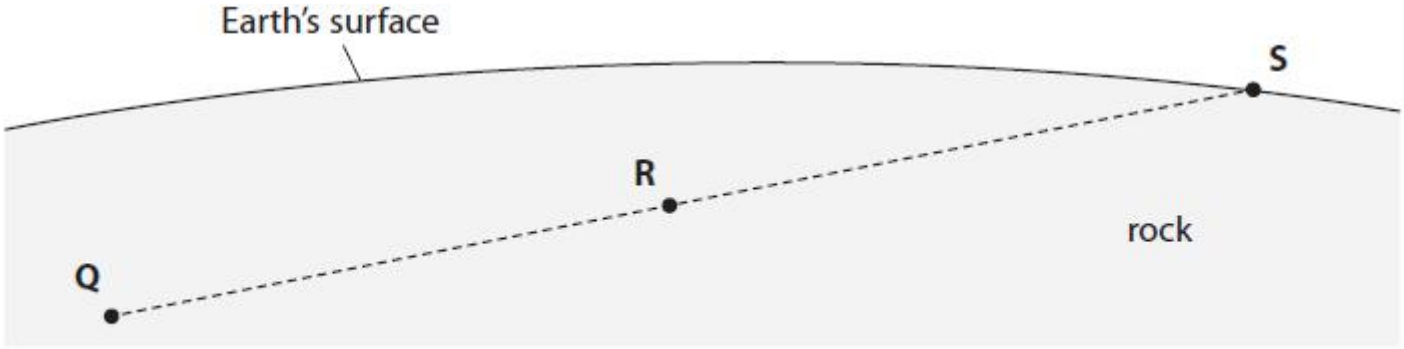


Figure 13

An earthquake starts at **Q**.

A seismic wave travels from **Q** to **S**.

The seismic wave is a longitudinal wave.

The frequency of the seismic wave is 12Hz.

A technician measured the frequency of the water wave in Figure 11 by counting how many waves passed him in 15 s.

Explain why this would **not** be a suitable method for measuring the frequency of the seismic wave in Figure 13.

(2)

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(Total for question = 2 marks)

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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)

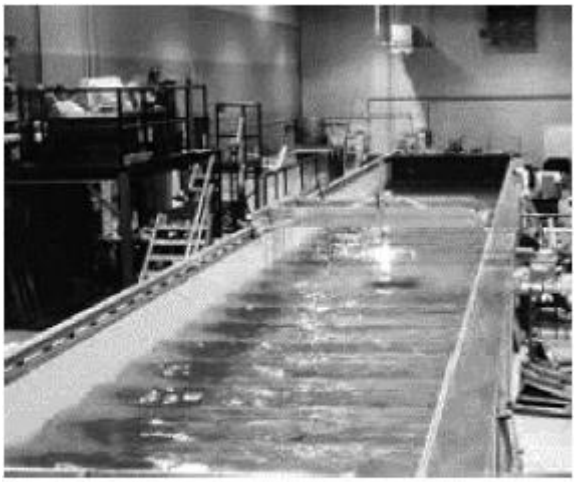
frequency = ... unit .....

(Total for question = 3 marks)

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Q5.

Figure 11 shows a large tank of water.



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Figure 11

The tank of water is used to study water waves.

(i) Water waves are transverse waves.

Give another example of a transverse wave.

(1)

.....

(ii) Figure 12 shows a side view of part of the tank.

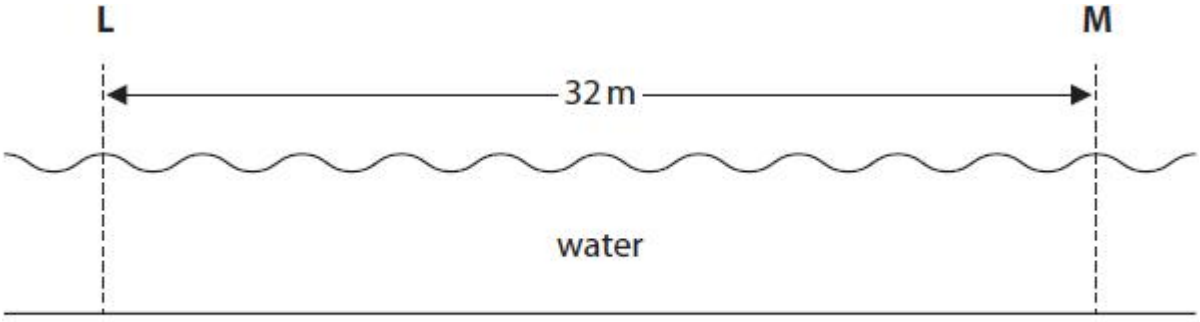


Figure 12

A water wave is moving from **L** to **M**.
Calculate the wavelength of the wave.

(2)

wavelength = ... m

(iii) A technician stands at the side of the tank.

He counts the peaks of the waves as they pass him.
12 peaks pass the technician in a time of 15 s.
Calculate the frequency of the wave.

(2)

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frequency = ... Hz

(Total for question = 5 marks)

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Q6.

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 10 shows a water wave.

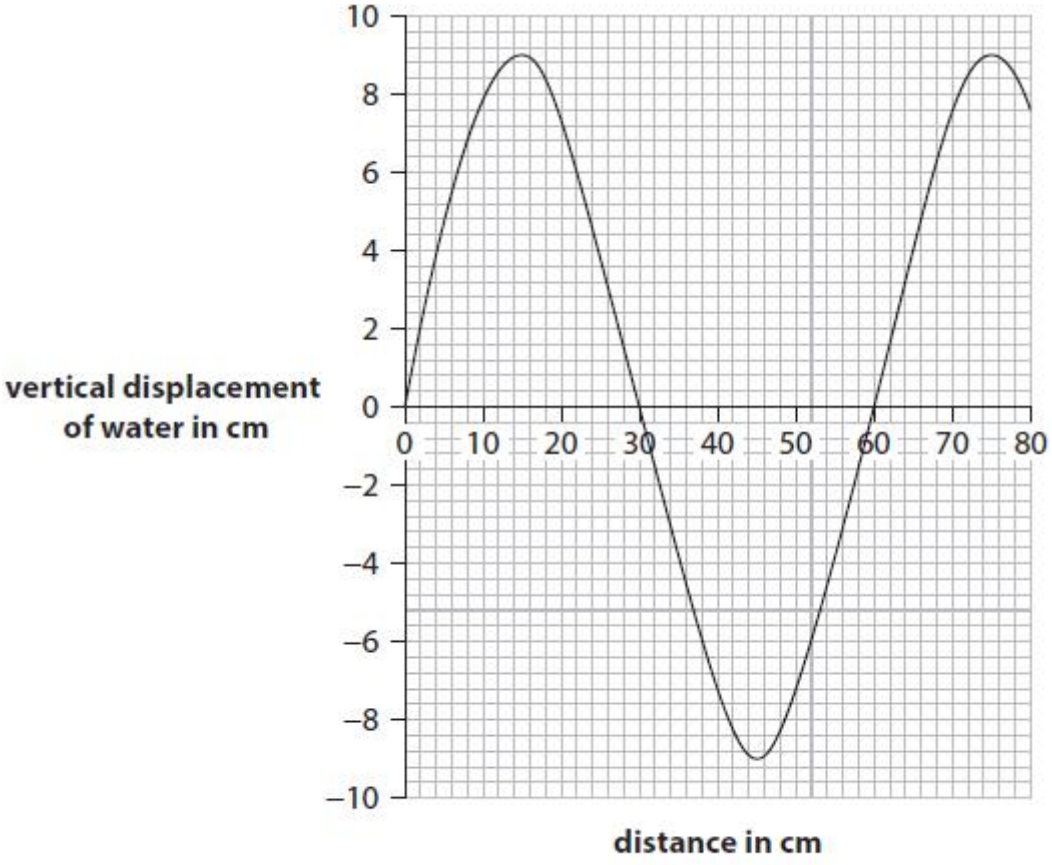


Figure 10

Which of these is the amplitude of the wave shown in Figure 10?

(1)

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

(Total for question = 1 mark)

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