

Name of the Student: _____

Max. Marks : 18 Marks

Time : 18 Minutes

Q1.

A student is standing 600 m from a firework display.

A firework explodes with a loud bang, and a flash of light is seen.

Describe how a student can measure the time it takes for the sound wave from the loud bang to travel 600 m.

(2)

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(Total for question = 2 marks)

Q2.

Ripples travel out from the centre of a small circular pond to its edge.

(i) Describe how a student could determine the wave speed of the ripples.

(3)

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(ii) Figure 5 shows a duck floating on the pond.

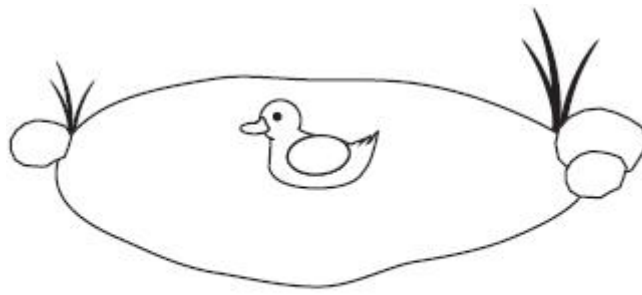


Figure 5

The ripples cause the duck to move.
Draw arrows on Figure 5 to show how the duck moves due to the ripples.

(1)

(Total for question = 4 marks)

Q3.

Figure 6 shows a ripple tank.
A screen is placed below the ripple tank.
The wave pattern produced by the ripples can be seen on the screen.

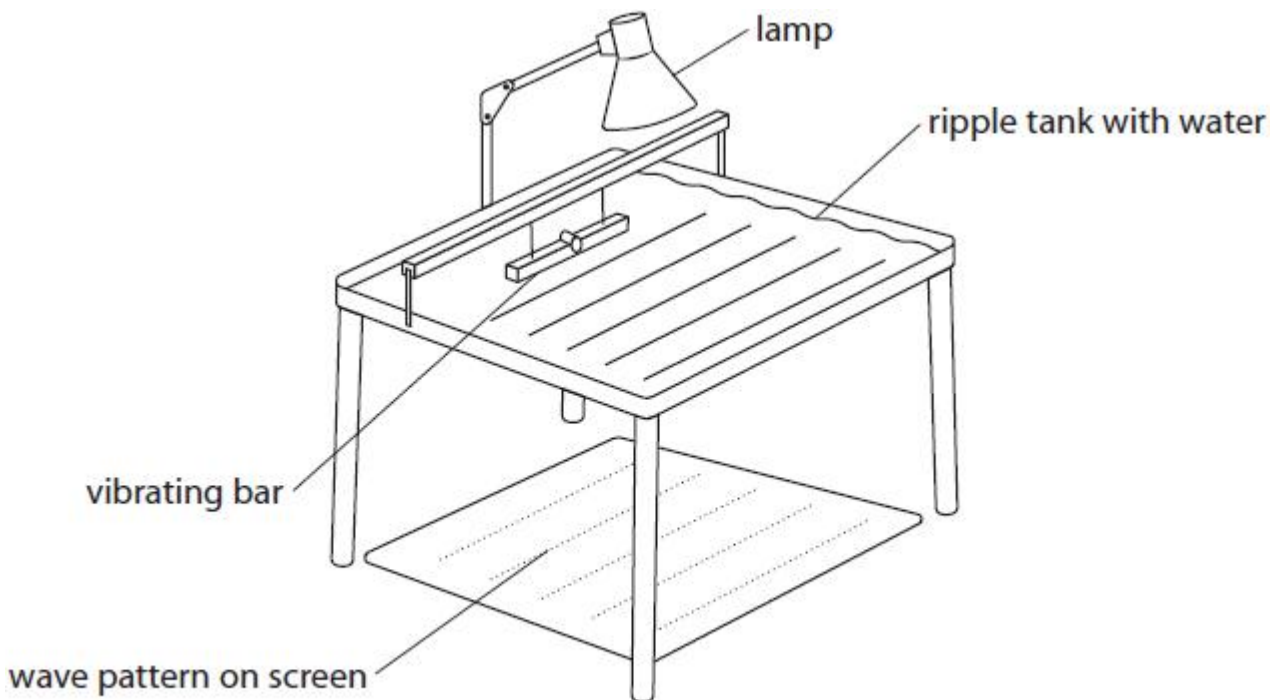


Figure 6

A student has a stop clock and a ruler.

(i) Describe how the student could measure the frequency of the ripples.

(2)

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(ii) Describe how the student could measure the wavelength of the ripples.

(2)

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(Total for question = 4 marks)

Q4.

A man throws a stone into a pond.
Devise a method of measuring the frequency of the waves.

(2)

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(Total for question = 2 marks)

Q5.

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)

Q6.

(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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