

Name of the Student: _____

Max. Marks : 20 Marks

Time : 20 Minutes

Q1.

The speed of a sound wave in air is 330 m/s.

The wavelength of this wave is 0.75 m.

Calculate the frequency of this wave.

Use the equation

$$v = f \times \lambda$$

(3)

frequency = Hz

(Total for question = 3 marks)

Q2.

A wave has a frequency of 15 Hz.

Its wavelength is 125 m.

Calculate the speed of the wave.

State the unit.

(3)

.....
.....

Q3.

A different water wave has a wavelength of 0.25 m and a frequency of 1.5 Hz.

Calculate the wave speed.

(2)

wave speed = m/s

(Total for question = 2 marks)

Q4.

Figure 8 shows part of a wave.

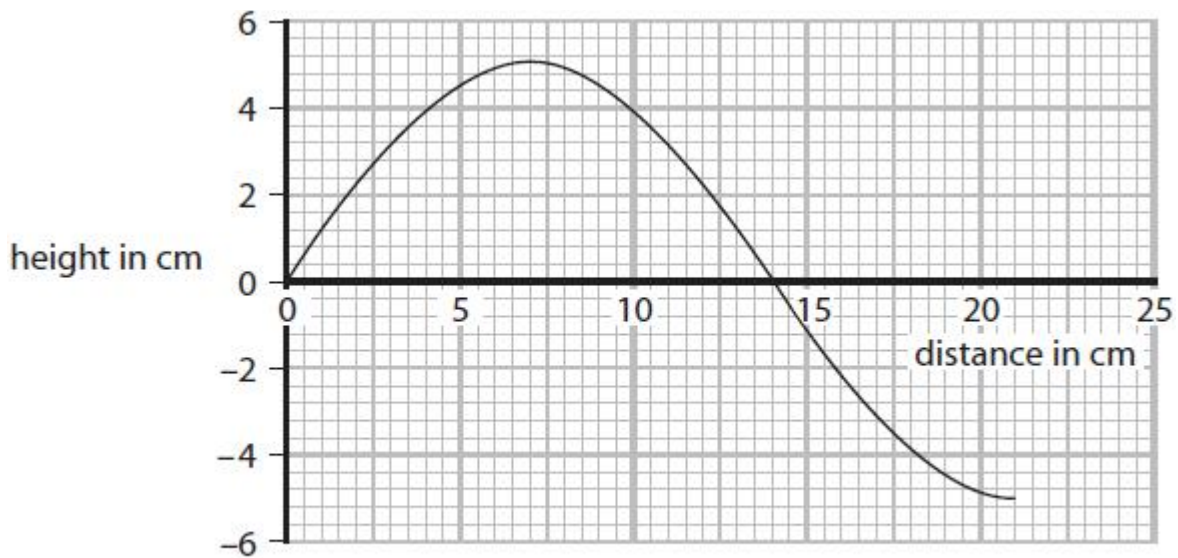


Figure 8

Use data from Figure 8 to calculate the wavelength of the wave.

(2)

wavelength = cm

(Total for question = 2 marks)

Q5.

The electromagnetic spectrum is continuous.

Different regions of the spectrum have different properties.
An electromagnetic wave has a frequency of 7×10^9 Hz.
The speed of the wave is 3×10^8 m/s.
Calculate the wavelength of the wave.

(3)

wavelength =m

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 .

(i) Which row of the table is correct for sound waves?

(1)

	sound waves are	can sound waves transfer energy?
<input type="checkbox"/> A	longitudinal	yes
<input checked="" type="checkbox"/> B	longitudinal	no
<input type="checkbox"/> C	transverse	yes
<input type="checkbox"/> D	transverse	no

(ii) A sound wave has a frequency of 440 Hz and a wavelength of 0.75 m.
Calculate the wave speed of the sound wave.

(2)

wave speed = m/s

(Total for question = 3 marks)

Q7.

Light and sound waves are produced at the same time by an explosion on Earth.

(i) The sound of the explosion is heard 1920 metres away 6.0 seconds after the explosion has happened.

Calculate the speed of sound in air.

(2)

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(ii) A scientist is standing a long way from the explosion.

Explain why he hears the explosion a few seconds after he sees it.

(2)

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