Practice Question Set For GCSE
Subject : Physics
Paper-2 Topic: GCSE Triple Science_Waves (LDQ)

Name of the Student:_____
Max. Marks : 24 Marks **Time : 24 Minutes**

Q1.

Sound travels as longitudinal waves.

(a) Complete the sentences.

Choose the answers from the box.

amplitude	**frequency**	**speed**	**wavelength**

The distance between the centre of one compression of a sound wave and the centre of the next compression is called the _____.

The number of waves passing a point each second is called the _____.

(2)

(b) Complete the sentence.

Choose the answer from the box.

opposite	**perpendicular**	**parallel**

In a longitudinal wave, the oscillations are _____ to the direction of energy transfer.

(1)

(c) A sound wave has a frequency of 8.0 kHz.

Which of the following is the same as 8.0 kHz?

Tick (✓) **one** box.

0.0080 Hz ☐

8.0 Hz ☐

8000 Hz ☐

800 000 Hz ☐

(1)

(d) Calculate the period of a sound wave with a frequency of 8.0 kHz.

Use the Physics Equations Sheet.

_____

_____

Period = _____ s

(2)

(e) Calculate the wavelength of a sound wave with a frequency of 6600 Hz.

speed of sound = 330 m/s

Use the equation:

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

Choose the unit from the box.

kg	m	N

_____

_____

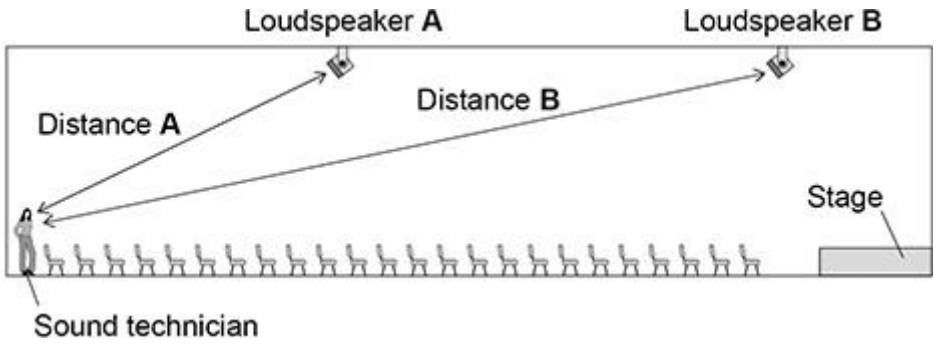
_____

_____

Wavelength = _____ Unit _____

(3)

The figure below shows the arrangement of two loudspeakers at a concert venue.



The loudspeakers in above diagram are tested by playing the same song through both loudspeakers.

A sound technician listens to the song.

Use the Physics Equations Sheet to answer parts (f) and (g).

(f) Write down the equation which links distance (*s*), speed (*v*) and time (*t*).

_____

(1)

(g) Distance **A** on above diagram is 13.2 m.

speed of sound = 330 m/s

Calculate the time taken for the sound to travel from loudspeaker **A** to the technician.

_____

_____

_____

_____

_____

Time taken = _____ s

(3)

(h) The sound from each loudspeaker travels at the same speed.

For the sound technician to hear the song clearly, the sound from loudspeaker **B** should be emitted slightly before the sound from loudspeaker **A**.

Explain why.

_____

_____

_____

_____

_____

_____

(3)

(Total 16 marks)

Q2.

Figure 1 shows a water wave.

Figure 1

(a) What type of wave is a water wave?

Tick (✓) **one** box.

Electromagnetic	☐
Longitudinal	☐
Transverse	☐

(1)

(b) Which statement describes the movement of the water at point **X**?

Tick (✓) **one** box.

The water at point **X** does **not** move.	☐
The water at point **X** moves to the left and right.	☐
The water at point **X** moves up and down.	☐

(1)

(c) The wave has a frequency of 2.0 hertz.

The wavelength is 0.032 metres.

Calculate the wave speed.

Use the equation:

wave speed = frequency × wavelength

Choose the unit from the box.

m^2/s	**m/s**	**s^2**

_____

_____

_____

Wave speed = _____ Unit _____

(3)

(d) What is transferred by all waves?

Tick (✓) **one** box.

Energy ☐

Information ☐

Water ☐

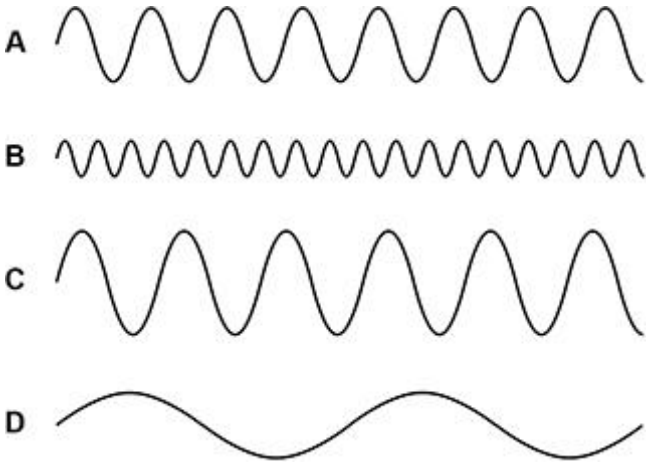
(1)

Figure 2 shows four water waves.

The waves are all drawn to the same scale.

The waves all travel at the same speed.

Figure 2



(e) Which wave has the longest wavelength?

Tick (✓) **one** box.

A ☐ **B** ☐ **C** ☐ **D** ☐

(1)

(f) Which wave has the highest frequency?

Tick (✓) **one** box.

A ☐ **B** ☐ **C** ☐ **D** ☐

(1)

(Total 8 marks)