Practice Question Set For GCSE
Subject : Physics
Paper-1 Topic : 5_Light and Electromagnetic Spectrum

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Name of the Student:_____
Max. Marks : 23 Marks **Time : 23 Minutes**

Q1.

Geologists use sound waves from a small explosion to search for oil underground.

Complete the sentence by putting a cross (☒) in the box next to your answer.

(i) These sound waves are called

(1)

☒ **A** cosmic waves
☒ **B** seismic waves
☒ **C** volcanic waves
☒ **D** tectonic waves

(ii) A small explosion is triggered at the Earth's surface.
The waves reflect back from the top of the oil field.

Suggest why the waves are reflected from the oil field.

(1)

.....

Q2.

Figure 4 is a diagram of a water wave.

A cork is floating on the water.

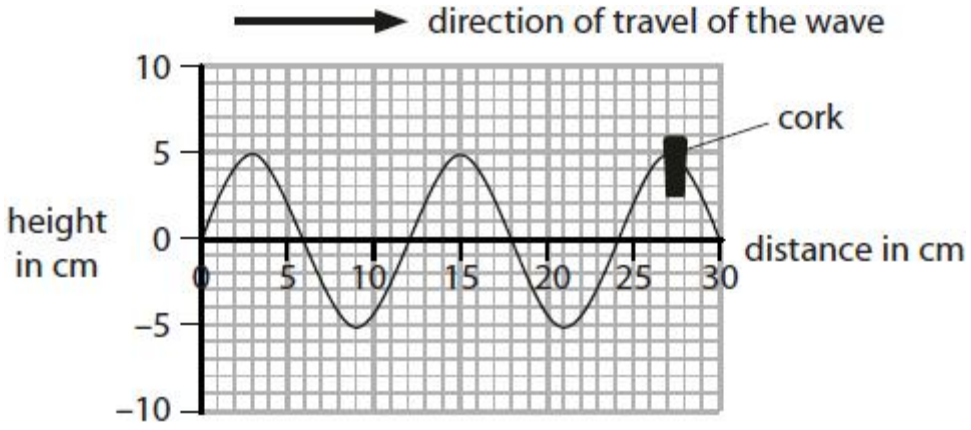

Figure 4

(i) Use the scale on the diagram to measure the wavelength of the wave.

(2)

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wavelength = ... cm

(ii) Describe the motion of the cork.

You should include how the cork moves relative to the direction of travel of the wave.

(2)

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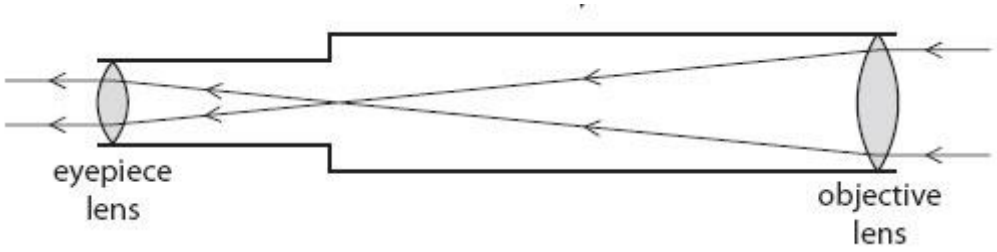
(Total for question = 4 marks)

Q3.

The diagram shows a simple telescope which uses two lenses to look at stars.



(i) Explain what the eyepiece lens does.

(2)

.....

.....

.....

.....

(ii) Complete the sentence by putting a cross (☒) in the box next to your answer.

The light that travels from the stars transfers

(1)

☒ **A** charge

☒ **B** energy

☒ **C** mass

☒ **D** matter

Q4.

Light travels the 150 million km from the Sun to the Earth in about 500 s.
It takes about 2100 s for light to reach the Earth from Jupiter.
Using this information, calculate the approximate distance of Jupiter from the Earth.

(2)

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distance of Jupiter from the Earth =.....million km

Q5.

(i) Figure 9 shows a student sitting on the shore of a lake watching ripples on the surface of the water moving past a toy boat.

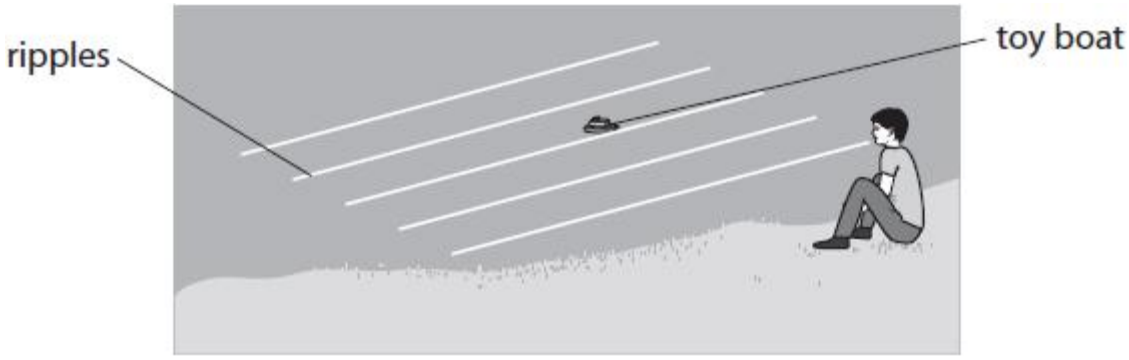

Figure 9

The student has a stopwatch.
Describe how the student could determine the frequency of the ripples on the lake.

(3)

.....

.....

.....

.....

.....

.....

(ii) The speed of a water wave is 1.5 m/s.

The frequency of the wave is 0.70 Hz.
Calculate the wavelength of this wave.
Use the equation

$$v = f \times \lambda$$

(2)

wavelength = ... m

(iii) Water waves are transverse waves.

Describe the difference between transverse waves and longitudinal waves.

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(2)

.....

.....

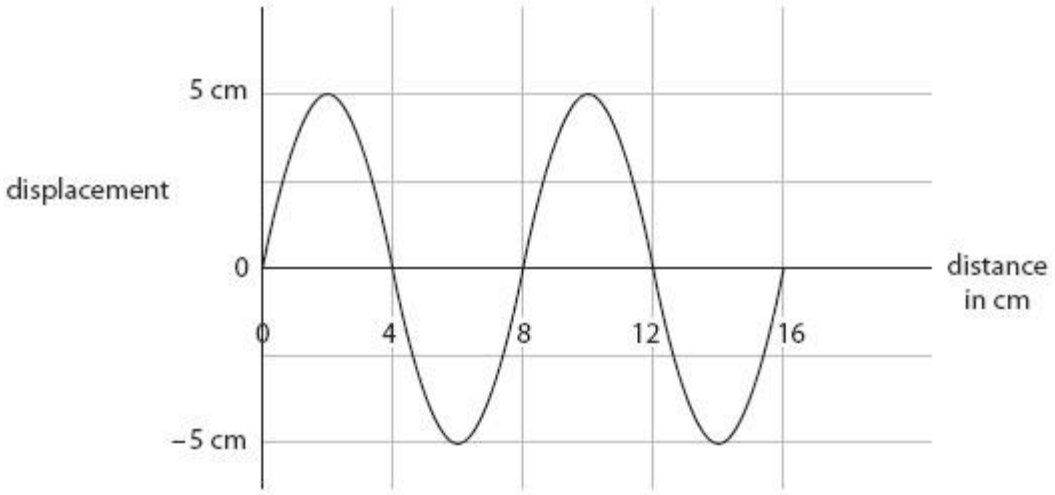
.....

.....

(Total for question = 7 marks)

Q6.

(i) The diagram represents a wave.



State the amplitude and wavelength of the wave.

(2)

.....

.....

(ii) 20 waves are sent out in 4 seconds.

Complete the sentence by putting a cross (☒) in the box next to your answer.

The frequency of the wave is

(1)

☒ **A** 0.2 Hz

☒ **B** 5 Hz

☒ **C** 20 Hz

☒ **D** 80 Hz

Q7.

Some students are investigating waves.
They produce waves by moving a piece of wood up and down in a tank of water.
The diagram shows the waves over a distance of 60 cm.

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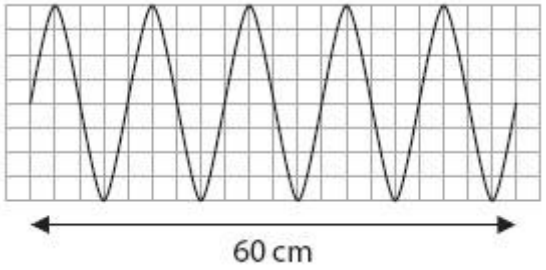

(i) State the number of wavelengths shown on the diagram.

(1)

.....

(ii) Calculate the wavelength of the waves.

(1)

.....

Q8.

Complete the sentence by putting a cross (☒) in the box next to your answer.
Waves from an earthquake are

(1)

☒ **A** transverse waves only

☒ **B** electromagnetic waves only

☒ **C** both transverse and electromagnetic waves

☒ **D** both transverse and longitudinal waves

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