Practice Question Set For GCSE
Subject : Physics
Paper-1 Topic : 4_ Waves

Name of the Student:_____
Max. Marks : 17 Marks **Time : 17 Minutes**

Q1.

The electromagnetic spectrum is continuous.
Different regions of the spectrum have different properties.
(a) (i) Name an electromagnetic wave that is also an ionising radiation.

(1)

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(ii) Genuine banknotes contain a special ink.
This ink is invisible under normal light.
Suggest why the ink glows when ultraviolet radiation is shone on it.

(2)

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(b) 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

*(c) Radiation from different regions of the electromagnetic spectrum can affect the human body in many ways.

Discuss the different ways in which excessive exposure to electromagnetic radiations of various frequencies may cause damage to the human body.

(6)

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(Total for Question = 12 marks)

Q2.

Figure 6 shows a large tank of water.

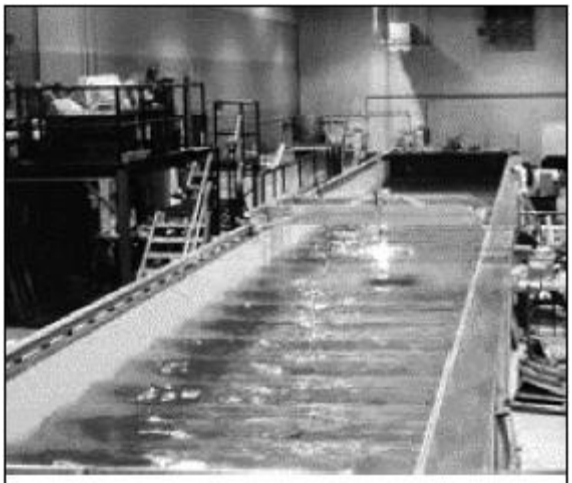

Figure 6

The tank of water is used to study water waves.

Figure 8 shows part of the inside of the Earth below the surface.

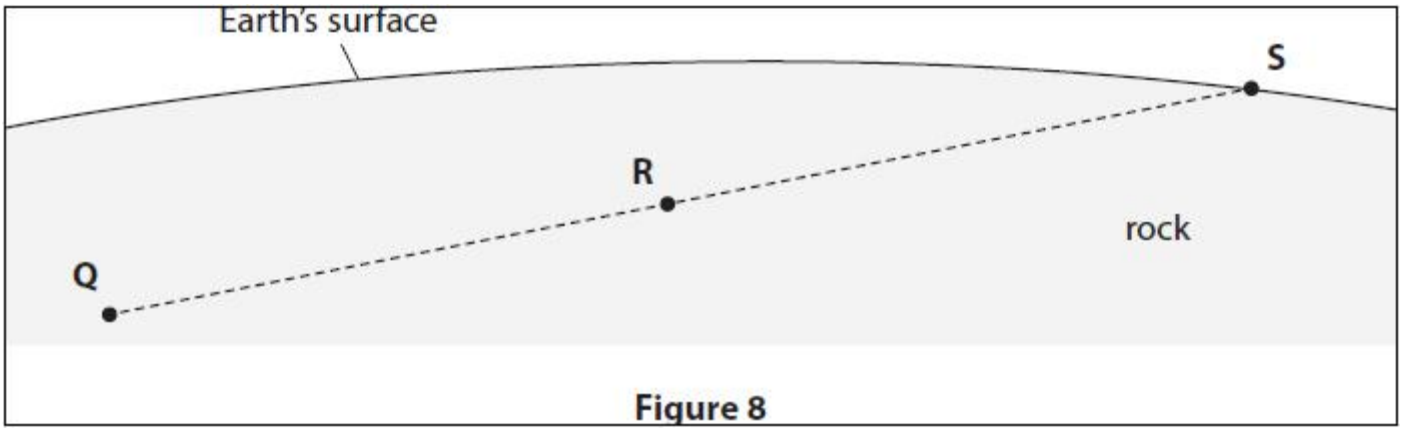

Figure 8

An earthquake starts at **Q**.

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

A technician measured the frequency of the water wave in Figure 7 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 8.

(2)

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(Total for question = 2 marks)

Q3.

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)