Practice Question Set For GCSE
**Subject : Physics**
**Paper-2 Topic: Waves (High Demand Questions)**

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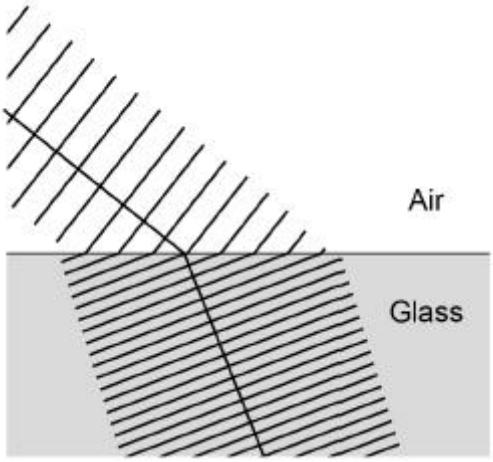
**Name of the Student**:_____
**Max. Marks : 17 Marks** **Time : 17 Minutes**

## Q1.

Wave front diagrams are used to explain why light refracts when it passes from air into glass.

**Figure 1**




(a) Explain why the light refracts as it passes from air into glass.

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**(3)**

(b) **Figure 2** shows a ray of red light entering a glass prism.

**Figure 2**

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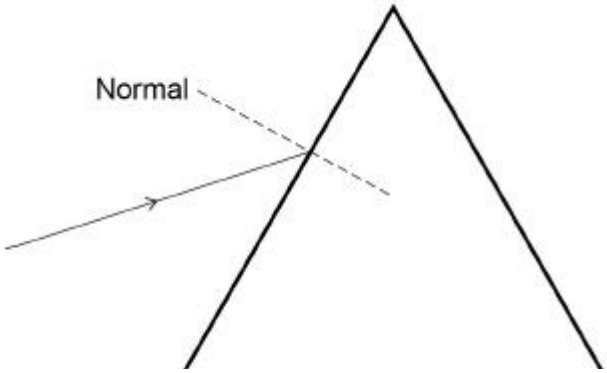



Complete the ray diagram to show the ray emerging from the glass prism.

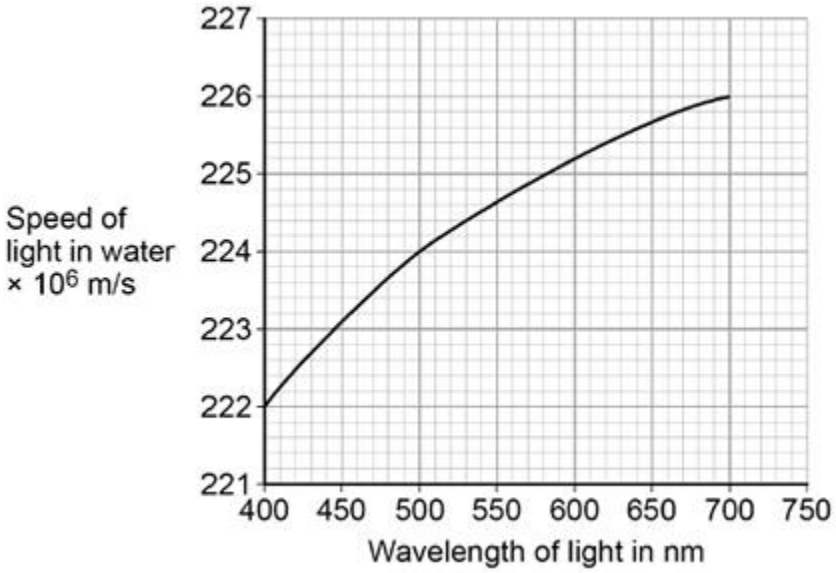
**(3)**

(c) White light is made up of a continuous spectrum of different wavelengths that all travel at $3 \times 10^8$ m/s in air.

Rainbows are produced because different wavelengths of light travel at different speeds in water.

**Figure 3** shows the speed of different wavelengths of light in water.

**Figure 3**




Explain why violet light is refracted the most as it enters water.

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**(3)**

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**(Total 9 marks)**

## Q2.

A car aerial receives radio waves from a radio transmitter.

Radio waves are transverse waves.

Sound waves are longitudinal waves.

(a) Describe the difference between transverse waves and longitudinal waves.

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**(2)**

(b) The radio waves have a frequency of $4.8 \times 10^9$ Hz

Wave speed of electromagnetic waves = $3.0 \times 10^8$ m/s

Calculate the wavelength of the radio waves.

Give your answer to 2 significant figures.

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_____

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Wavelength = _____ m

**(3)**

(c) Describe how the radio waves reaching the car aerial produce signals in the electrical circuit of the car radio.

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**(3)**

**(Total 8 marks)**

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