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

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Name of the Student:_____
Max. Marks : 22 Marks **Time : 22 Minutes**

Q1.

Infrared and microwaves are two types of electromagnetic radiation.

(a) State **one** example of the use of each type of radiation for communication.

Infrared: _____

Microwaves: _____

(2)

(b) Some of the properties of infrared and microwaves are the same.

State **two** of these properties.

1. _____

_____

2. _____

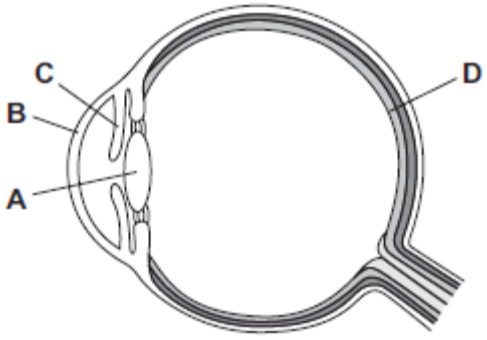
_____

(2)
(Total 4 marks)

Q2.

(a) **Figure 1** shows a section through a human eye.

Figure 1



Write the correct letter, **A**, **B**, **C** or **D**, in each empty box to identify the parts of the eye labelled in **Figure 1**.

Part of the eye	A, B, C or D

Cornea	
Lens	
Retina	

(3)

(b) The table shows how the mass of 1 cm^3 of different materials varies with refractive index.

Material	**Refractive index**	**Mass in g**
Water	1.33	1.00
Glass **X**	1.52	2.54
Glass **Y**	1.70	2.93
Glass **Z**	1.81	3.37

(i) Describe the pattern shown in above table.

_____

_____

(1)

(ii) Lenses used for correcting visual defects often have a low refractive index.

State **one** advantage and **one** disadvantage of using lenses with a high refractive index for correcting visual defects.

Advantage _____

Disadvantage _____

(2)

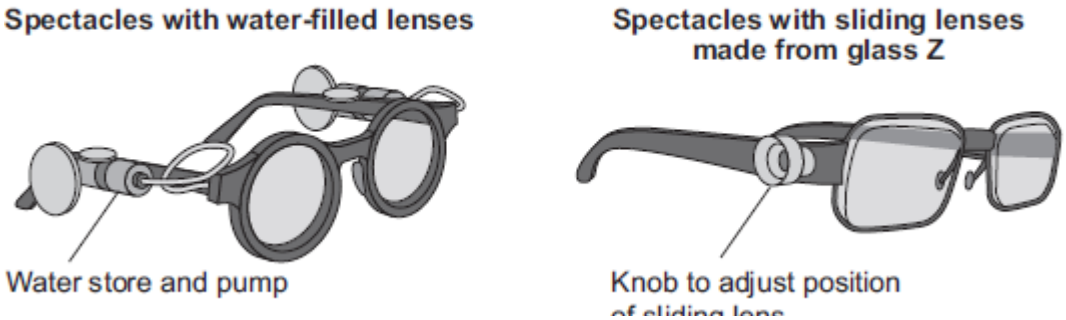
(iii) The eyesight of a person can change throughout their lifetime. Scientists have designed cheap spectacles that allow the wearer to change the focal length of the lenses as their eyesight changes.

Two designs are:

- using water-filled lenses where water is pumped in or out of the lens to change its shape
- using a pair of specially shaped lenses for each eye that are able to slide across each other.

Figure 2 shows these two designs.

Figure 2



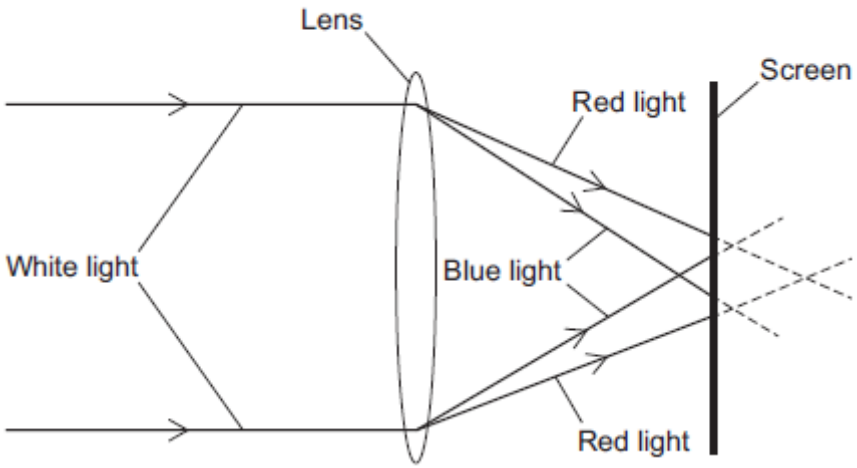
Suggest **one** advantage and **one** disadvantage of each design.

(4)

(c) **Figure 3** shows parallel rays of white light from a distant point being refracted towards a screen by a lens.

The lens is made from a glass with a much greater refractive index than glass normally used for correcting visual defects.

Figure 3



What would you notice about the image on the screen?

State **two** observations.

1. _____

_____

2. _____

_____

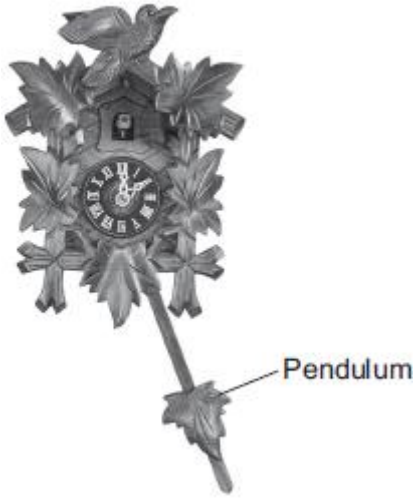
(2)

(Total 12 marks)

Q3.

The clock shown in **Figure 1** uses a pendulum to keep time.

Figure 1



(a) The pendulum has a frequency of 0.80 Hz.

Calculate the periodic time of the pendulum.

_____

_____

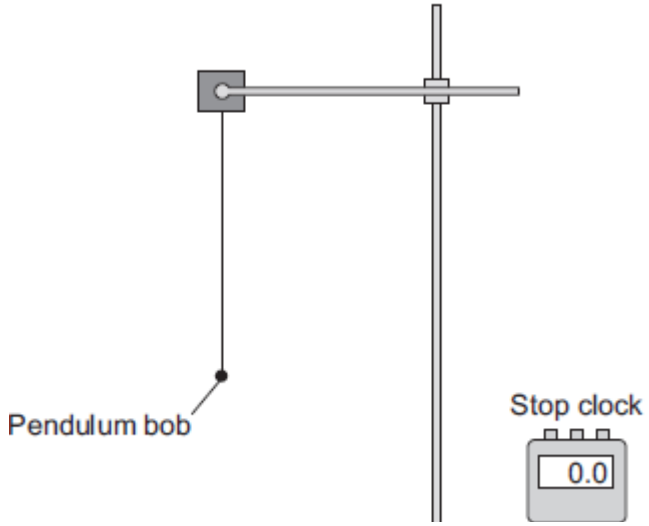
_____

Periodic time = _____ seconds

(2)

(b) A student investigated the factors affecting the oscillation of a pendulum. The student set up a pendulum as shown in **Figure 2**.

Figure 2



The student investigated how many complete oscillations the pendulum made for different lengths of the pendulum and different masses of the pendulum bob.

The results are shown in the table.

Length of the pendulum in millimetres	**Mass of the pendulum bob in grams**	**Number of complete oscillations made by the pendulum in 20 seconds**
200	100	22
200	200	22
400	100	15
400	200	15
600	50	13
600	100	13

(i) State **two** conclusions that the student should make from the results shown in the table.

1. _____

_____

2. _____

_____

(2)

(ii) The student wants to be more certain that her conclusions are correct.

Suggest **two** ways in which the investigation could be improved.

1. _____

_____

2. _____

_____

(2)

(Total 6 marks)