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

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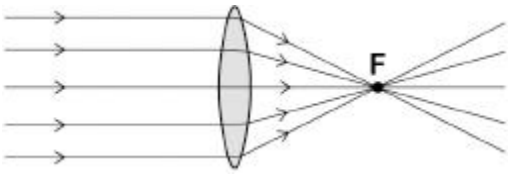
Name of the Student:_____
Max. Marks : 21 Marks **Time : 21 Minutes**

Q1.

Lenses can be used to form an image of an object.

(a) **Figure 1** shows parallel rays of light being refracted by a **convex** lens.

Figure 1



What is the position marked '**F**' called?

Tick (✓) **one** box.

Focal length ☐

Focus point ☐

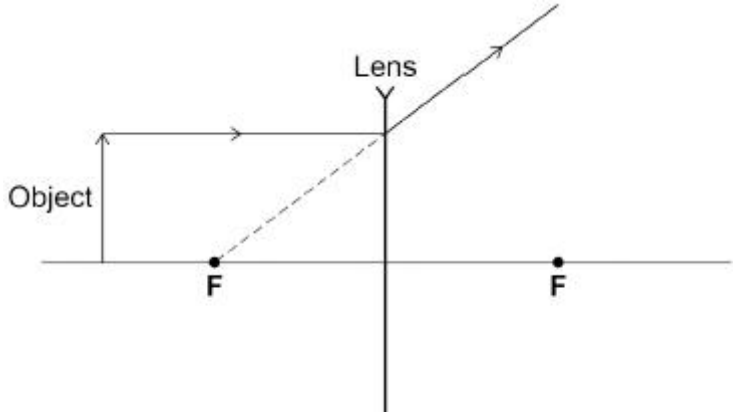
Principal focus ☐

(1)

(b) Complete the ray diagram in **Figure 2** to show how a **concave** lens forms the image of the object.

Use an arrow to represent the image.

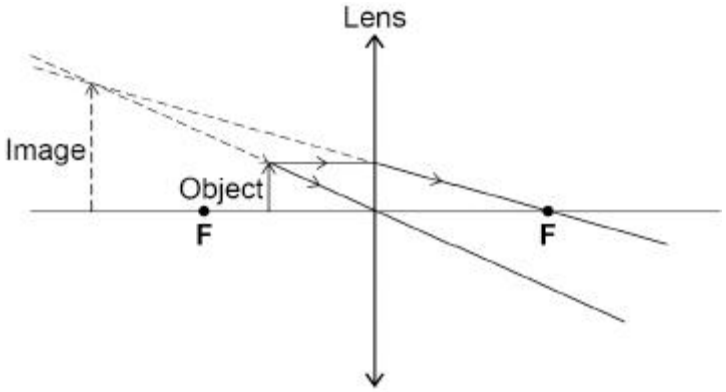
Figure 2



(2)

(c) **Figure 3** shows how a **convex** lens can be used to form a magnified image of an object.

Figure 3



Give **two** ways that the image formed by the convex lens in **Figure 3** is similar to the image formed by the concave lens.

1 _____

2 _____

(2)

(d) A convex lens is used as a magnifying glass to identify a symbol on the back of a silver spoon.

The symbol has an actual height of 1.6 mm.

The magnification produced by the lens is 3.5

Calculate the image height of the symbol when viewed through the magnifying glass.

Use the Physics Equations Sheet.

_____

_____

_____

_____

_____

Image height = _____ mm

(3)

(Total 8 marks)

Q2.

Ultraviolet and visible light are both parts of the electromagnetic spectrum.

(a) How does the speed of ultraviolet in a vacuum compare to the speed of visible light in a vacuum?

Tick (✓) **one** box.

Ultraviolet travels at a faster speed than visible light. ☐

Ultraviolet travels at a slower speed than visible light. ☐

Ultraviolet travels at the same speed as visible light. ☐

(1)

(b) **Figure 1** shows parts of the electromagnetic spectrum.

Figure 1

Radio waves	A	B	C	D	X-rays	Gamma rays

Which letters represent the positions of ultraviolet and visible light in the electromagnetic spectrum?

Ultraviolet _____

Visible light _____

(2)

(c) **Table 1** shows the range of wavelengths for different types of ultraviolet.

Table 1

Type	Range of wavelength in nanometres
Ultraviolet **A** (UVA)	315–400
Ultraviolet **B** (UVB)	280–315
Ultraviolet **C** (UVC)	100–280

Determine which type of ultraviolet shown in **Table 1** has the largest range of wavelengths.

To gain full marks you must calculate the range of wavelengths for each type of ultraviolet.

Type of ultraviolet with the largest range of wavelengths _____

(3)

Figure 2 shows how different types of ultraviolet are absorbed by the ozone layer in the Earth's atmosphere.

Table 2 shows the relative ionising power from each type of ultraviolet.

Figure 2

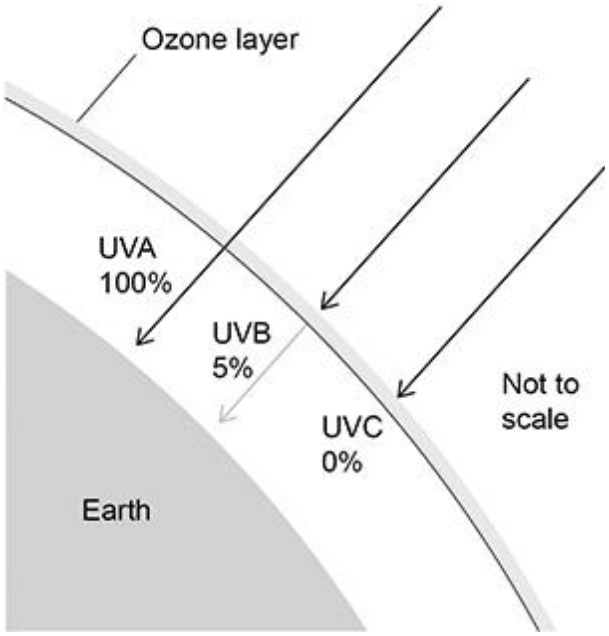


Table 2

Type	Relative ionising power
UVA	Low
UVB	Medium
UVC	High

(d) Explain the importance of the ozone layer in reducing the risk to people from all types of ultraviolet.

Use **Figure 2** and **Table 2**.

(4)

(e) The Sun emits visible light.

A student concludes that visible light is **not** absorbed by the ozone layer.

Give **one** piece of evidence that shows the student's conclusion is correct.

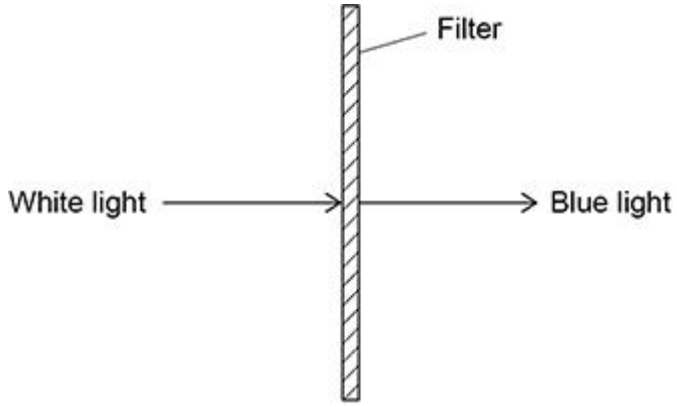
_____

_____

(1)

(f) **Figure 3** shows white light incident on a colour filter.

Figure 3



Complete the sentence.

Choose the answers from the box.

absorbed	**radiated**	**reflected**	**refracted**	**transmitted**

When white light is incident on the filter, only blue light is _____

and all other colours of light are _____.

(2)

(Total 13 marks)