

Eduqas Physics GCSE
Topic 6.1: Frequency range of the
spectrum
Questions by topic

1.

- (a) The table shows most of the waves in the electromagnetic spectrum.
One type of wave is missing.

gamma rays
.....
ultraviolet
visible light
infrared
microwaves
radio waves

- (i) Write the missing wave in the space in the table. (1)

- (ii) State which type of wave can be split into different colours. (1)

-
- (iii) State which type of wave has the longest wavelength. (1)
-

(b) The Sun emits all the waves in the electromagnetic spectrum.
Explain why all these waves take the same time to travel to Earth from the Sun.

(2)

2. (a) Microwaves and X-rays are both electromagnetic waves.

(i) Which row of the table is correct for microwaves and X-rays in a vacuum?

Put a cross (☒) in the box next to your answer.

(1)

	their speeds are	their frequencies are
<input checked="" type="checkbox"/> A	different	different
<input checked="" type="checkbox"/> B	different	the same
<input checked="" type="checkbox"/> C	the same	different
<input checked="" type="checkbox"/> D	the same	the same

3.

The electromagnetic spectrum has many parts.

One of these parts is called visible light.

(a) (i) How many different colours are there in visible light?

Put a cross (☒) in the box next to your answer.

(1)

- A five
- B seven
- C nine
- D eleven

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

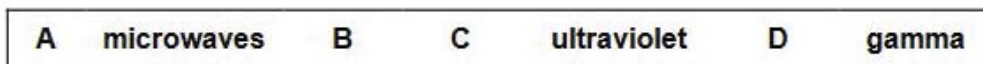
Three colours of the spectrum of visible light in the correct order are

(1)

- A green, red, yellow
- B blue, red, green
- C red, orange, yellow
- D violet, orange, green

4.

The figure below shows an incomplete electromagnetic spectrum.



(a) What name is given to the group of waves at the position labelled **A** in the figure above?

Tick **one** box.

infrared

radio

visible light

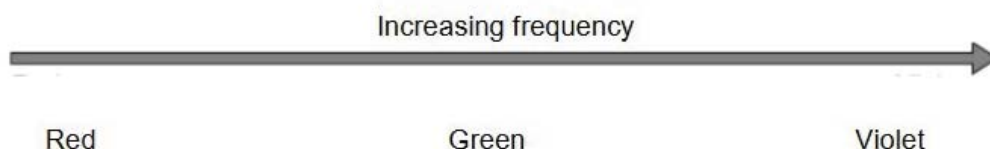
X-ray

5.

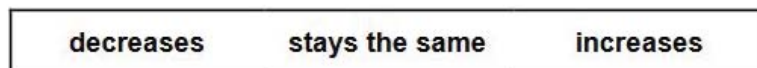
(a) The visible light spectrum has a range of frequencies.

Figure 1 shows that the frequency increases from red light to violet light.

Figure 1



Use the correct answers from the box to complete the sentence.



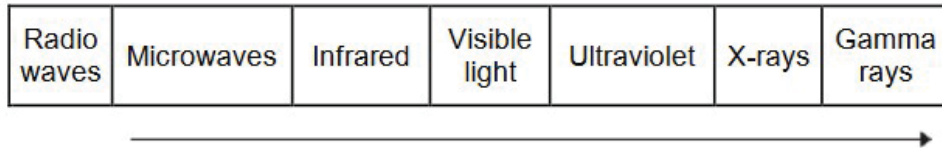
As the frequency of the light waves increases, the wavelength of the light waves and the energy of the light waves

(2)

6.

Different parts of the electromagnetic spectrum have different uses.

(a) The diagram shows the electromagnetic spectrum.



(i) Use the correct answers from the box to complete the sentence.

amplitude	frequency	speed	wavelength
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The arrow in the diagram is in the direction of increasing
and decreasing

(2)

(ii) Draw a ring around the correct answer to complete the sentence.

The range of wavelengths for waves in the electromagnetic

spectrum is approximately

10^{-15} to 10^4
10^{-4} to 10^4
10^4 to 10^{15}

metres.

(1)

(b) The wavelength of a radio wave is 1500 m.
The speed of radio waves is 3.0×10^8 m / s.

Calculate the frequency of the radio wave.

Give the unit.

.....
.....
.....

Frequency =

(3)