

Electromagnetic waves – GCSE Physics Paper 2

1. No.3(3.1)

0 3

There are different groups of waves in the electromagnetic spectrum.

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. 1

Figure 8 shows the position of three groups of the waves.

Figure 8

A	Microwaves	B	Visible light	C	D	Gamma rays
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Which letter shows the position of infrared?

[1 mark]Tick (✓) **one** box.

A ☐ **B** ☐ **C** ☐ **D** ☐

2. No.5

05

Ultraviolet is a type of electromagnetic wave.

05.1

Give **one** use of ultraviolet.

[1 mark]

05.2

An ultraviolet wave has a wavelength of 300 nanometres.

Which of the following is equal to 300 nanometres?

[1 mark]

Tick (✓) **one** box. $3 \times 10^7 \text{ m}$ ☐ $3 \times 10^{-7} \text{ m}$ ☐ $3 \times 10^9 \text{ m}$ ☐ $3 \times 10^{-9} \text{ m}$ ☐

05.3

The speed of ultraviolet waves is $3 \times 10^8 \text{ m/s}$.

Calculate the frequency of the ultraviolet wave.

Use your answer to Question 05.2

[3 marks]

Frequency = _____ Hz

- 0 5 . 4 Table 1 gives the wavelength of an ultraviolet wave and three other electromagnetic waves.

Table 1

	Ultraviolet	Wave E	Wave F	Wave G
Wavelength in nanometres	300	0.1	600	100 000

Draw **one** line from each wave to the name of the wave.

[1 mark]

Wave	Name
Wave E	Infrared
Wave F	Visible light
Wave G	X-rays

- 0 5 . 5 Electromagnetic waves are transverse.

Some other types of wave are longitudinal.

Describe the difference between transverse and longitudinal waves.

[2 marks]
