

Electromagnetic Spectrum

Question Paper

Course	CIE IGCSE Physics
Section	3. Waves
Topic	Electromagnetic Spectrum
Difficulty	Medium

Time Allowed 10

Score /7

Percentage /100

Question 1

Which of the following sentences about infrared waves is true?

- A. They can be used to treat cancerous tumours.
- B. They can be used to make images of bones, through the skin.
- C. They can be used for cooking.
- D. They are used to send communication signals to satellites.

[1 mark]

Question 2

Which type of electromagnetic wave is used in remote controls?

- A. Microwaves
- B. Visible light
- C. Ultraviolet
- D. Infrared

[1 mark]

Question 3

A forgery detector is used to check whether bank notes are genuine or counterfeit. A type of electromagnetic radiation is shone onto the banknote which makes special ink in the note glow.

Which type of electromagnetic radiation is shone onto the banknote?

- A. Ultraviolet
- B. Infrared
- C. Visible light
- D. X-rays

[1 mark]

Question 4

The table gives common uses of electromagnetic radiation.

Which row correctly matches the type of electromagnetic radiation with its use?

	Detecting banknote forgery	TV remote controllers	Sterilising medical instruments
A	microwaves	visible light	microwaves
B	infrared	infrared	γ -rays
C	ultraviolet	radio waves	infrared
D	ultraviolet	infrared	γ -rays

[1 mark]

Question 5

Visible, red light has a wavelength of around $700 \times 10^{-7} \text{ m}$.

Two other types of electromagnetic radiation, X and Y, have different wavelengths to the visible, red light.

Wavelength of X = $400 \times 10^{-7} \text{ m}$

Wavelength of Y = $3.0 \times 10^{-2} \text{ m}$

Which types of radiation could X and Y be?

	X	Y
A	visible blue light	microwaves
B	x-rays	ultraviolet
C	infrared	radio waves
D	microwaves	ultraviolet

[1 mark]

Question 6

In what way are microwaves different from ultraviolet waves?

- A. Ultraviolet waves travel faster than microwaves in a vacuum.
- B. Microwaves have a longer wavelength than ultraviolet waves.
- C. Microwaves have a higher frequency than ultraviolet waves.
- D. Microwaves are longitudinal while ultraviolet waves are transverse.

[1 mark]

Question 7**Extended tier only**

Which of the following types of electromagnetic radiation has the highest speed in a vacuum?

- A.** Microwaves
- B.** Radio waves
- C.** Visible light
- D.** None of the above

[1 mark]