Electromagnetic Spectrum – 2020 IGCSE 0625

1. Nov/2020/Paper_11/No.25

The diagram shows the electromagnetic spectrum.

γ-rays	E	ultraviolet	F	infrared	microwaves	G

Which types of wave are E, F and G?

	E	F	G
A	radio	visible light	X-rays
B	radio	X-rays	ultrasound
C	X-rays	radio	ultrasound
D	X-rays	visible light	radio

2. Nov/2020/Paper_12/No.25

Which type of radiation does a remote controller use to send its instructions to a TV set?

A γ-rays

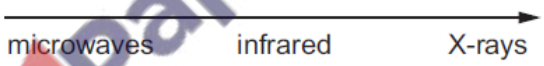
B infrared radiation

C ultraviolet radiation

D X-rays

3. Nov/2020/Paper_13/No.25

The diagram shows three types of electromagnetic radiation listed in a particular order. The electromagnetic radiation is travelling in a vacuum.



Which quantities increase in magnitude going from left to right across the list?

A frequency only

B neither speed nor frequency

C speed and frequency

D speed only

4. Nov/2020/Paper_22/No.22

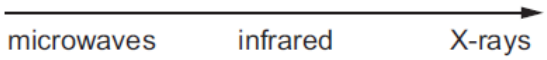
A radio transmitter broadcasts at a frequency of 200 kHz.

What is the wavelength of these radio waves?

A 6.7×10^{-4} m **B** 1.5 m **C** 1.5×10^{3} m **D** 1.5×10^{6} m

5. Nov/2020/Paper_23/No.25

The diagram shows three types of electromagnetic radiation listed in a particular order. The electromagnetic radiation is travelling in a vacuum.



Which quantities increase in magnitude going from left to right across the list?

A frequency only

B neither speed nor frequency

C speed and frequency

D speed only

6. Nov/2020/Paper_31/No.8

Fig. 8.1 shows a mobile (cell) phone.

Fig. 8.1

(a) (i) State the type of electromagnetic wave used for the mobile phone signal.

..... [1]

(ii) The screen of the mobile phone emits visible light. State **one** type of electromagnetic wave with a shorter wavelength than visible light.

..... [1]

(b) The mobile phone produces sound waves.

(i) State the range of audible frequencies for a healthy human ear. Include the unit.

..... [2]

(ii) The ring tone of the mobile phone consists of two musical notes, note A and note B.

Note A is louder and is higher in pitch than note B.

Fig. 8.2 shows note A displayed on an oscilloscope screen.

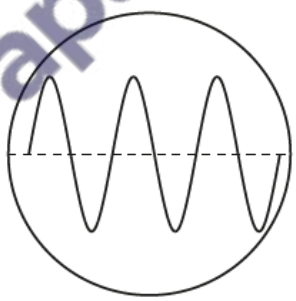


Fig. 8.2

Note B is displayed on the same oscilloscope screen as note A. Describe the differences between the wave for note B and the wave for note A. You may draw on Fig. 8.2 to show the differences.

.....

..... [2]

[Total: 6]

7. Nov/2020/Paper_43/No.7

(a) State **two** uses for infrared radiation.

1. .....

.....

2. .....

.....

[2]

(b) X-rays are used in hospitals to help treat patients.

Suggest and explain **three** precautions for the safe use of X-rays.

1. .....

.....

2. .....

.....

3. .....

.....

[3]

(c) **(i)** State the speed in a vacuum of

1. microwaves ..... [1]

2. X-rays ..... [1]

(ii) State a possible frequency for an ultrasound wave.

..... [1]

[Total: 8]