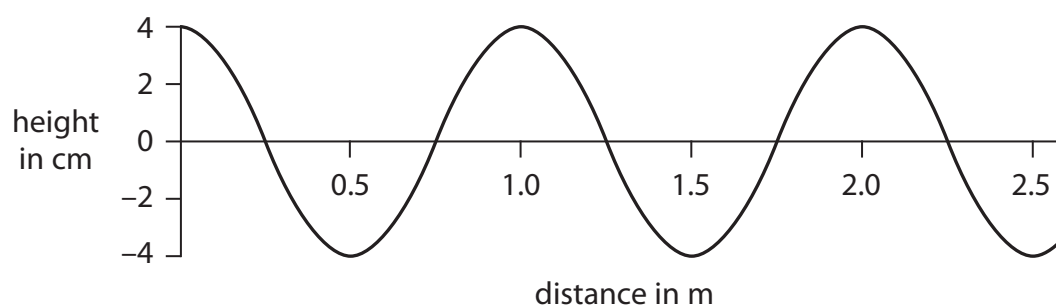


Answer ALL questions.

1 This question is about waves.

(a) The diagram represents a water wave at an instant in time.



(i) What is the wavelength of the water wave?

(1)

- ☐ **A** 0.5 m
- ☐ **B** 1.0 m
- ☐ **C** 1.5 m
- ☐ **D** 2.0 m

(ii) What is the amplitude of the water wave?

(1)

- ☐ **A** 1 cm
- ☐ **B** 2 cm
- ☐ **C** 4 cm
- ☐ **D** 8 cm



(b) Describe the differences between transverse and longitudinal waves.

You may draw a diagram to help your answer.

(3)

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(c) All electromagnetic waves are transverse.

State two other properties that are the same for all electromagnetic waves.

(2)

1

.....

2

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(d) Some types of wave are used in hospitals.

(i) Which type of wave is used in radiotherapy to treat cancer?

(1)

- ☐ **A** gamma rays
- ☐ **B** infrared
- ☐ **C** microwave
- ☐ **D** radio waves

(ii) Endoscopes use optical fibres to see inside the body.

Which type of wave should be used in the optical fibres?

(1)

- ☐ **A** microwave
- ☐ **B** radio waves
- ☐ **C** ultraviolet
- ☐ **D** visible light

(iii) X-rays are used to obtain images of broken bones.

Explain why technicians leave the room before taking an x-ray of a patient.

(2)

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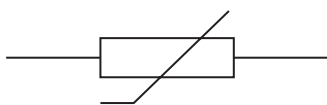
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(Total for Question 1 = 11 marks)

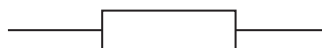


2 This question is about electricity.

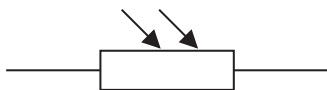
(a) The diagram shows some electrical circuit symbols.



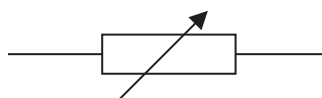
A



B



C



D

(i) Which symbol represents a light dependent resistor (LDR)?

(1)

☐ **A**

☐ **B**

☐ **C**

☐ **D**

(ii) Which symbol represents a fixed resistor?

(1)

☐ **A**

☐ **B**

☐ **C**

☐ **D**

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