

SECTION B

Answer BOTH questions.

Write your answers on the pages provided at the end of each question.

5. Figure 6a shows a diagram of a vertical section through the human eye.

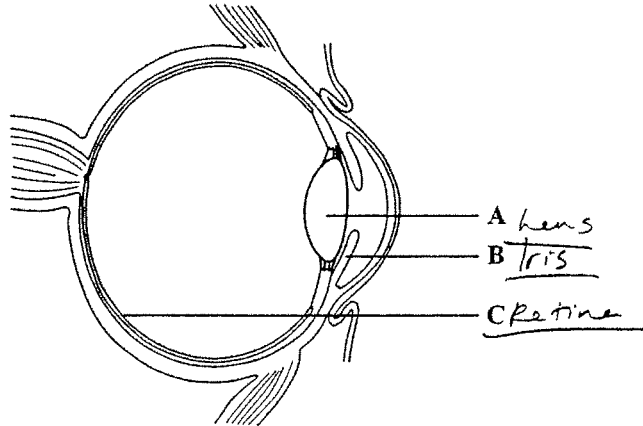


Figure 6a. Vertical section through a human eye

- (a) Name the structures labelled A, B and C in Figure 6a. (3 marks)
- (b) State the functions of the structures labelled A and B. (2 marks)
- (c) Figure 6b shows the journey that Fred needs to take to reach his home.

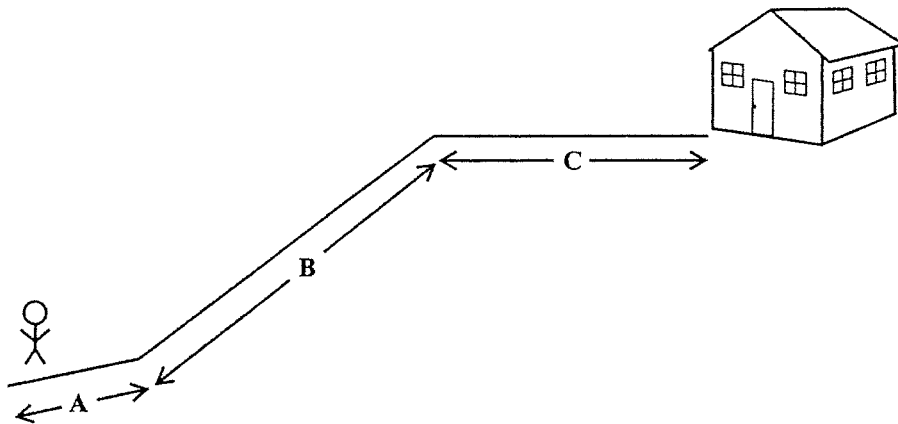


Figure 6b. Fred's journey to his home

- (i) Sometimes Fred runs up the slope. Explain how his breathing and heart rate change as he runs up the slope. (5 marks)
- (ii) Which TWO sense organs enable Fred to run up the slope? Explain your answer. (5 marks)

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Write your answer to Question 5 here.

b) A - lens is used to focus the light from the objects and
B - Iris changes the size of the opening to the lens (A).

c) i) Fred's breathing rate and heart rate will increase. He will breathe faster and his heart will beat faster. This is because the cells need more oxygen to respire ^{so he will need} ~~and make energy~~ ^{breathe in} faster to take in more oxygen to satisfy this demand. The oxygen will be carried by the blood so the heart will also need to beat faster to pump the blood quicker to the cells and back to the lungs to release the carbon dioxide.

(ii) ^(his brain) The eyes - sight and the skin - touch. The eyes will let Fred know that he is heading up the slope and will need more energy. Fred's skin or sense of touch will allow ~~Fred~~ ^{react to} his body to the stimuli of pressure in his feet, so it will know when to lift his legs and place them back down.

a) A - Lens
B - Iris
C - Retina

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Write your answer to Question 5 here.

(A) 1: A - lens

K3 2 B = the ~~iris~~ Iris
C = the retina

K1 (B) A - it ~~adjust~~ adjust to make the eye see the object.
K1 B - controls the amount of light entering the eye

C: His Breathing might get heavier due to the pressure of the heart have to pump more blood at a faster pace and as the oxygen is been ~~is~~ used up. you will find that Fred would be taking in big grasp of oxygen to release the carbon dioxide out of his body so that it can retain its normal body rate, were the blood heart rate ~~to~~ recover as he reaches the top of the slope.

(H) The ears and eyes

The ears contain sensory cells, which in the ear. there is balance of the body because that's where the body maintain its balance to do any stable activities without turning or falling over, ~~with~~ without the eye you would

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See where you are going cause the rods and
cones in the eye provide vision for you to see
where you are going or to see ~~are~~ an object.



ft. 1/2

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Write your answer to Question 5 here.

3 A - lense, B - iris, C - Retina

(b) Lense - Helps to focus the image on the retina.

102 Iris - Controls the amount of light that enters the eye

(c) His breathing rate would increase, U and his so that he can take in more O₂ oxygen and his heart would beat faster, U so that more blood ~~is~~ could be supplied to transport more oxygen to cells for the U release of energy. U

(ii) His eyes - so that he can be able to see where he is going and send U the message on to the ~~for~~ brain for a positive reaction

His ears - which helps with balance U and posture, sense organs in the ear which are sensitive to vibrations helps sends the message to the brain in order for fred to be able to balance on the slope.

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Comments

Question 5: Exemplar 1, 2 and 3

- Part (a) These candidates were awarded full marks for this part because the candidates were able to correctly identify the labeled parts of the eye.
- Part (b) These candidates were awarded full marks for this part because the candidates were able to clearly and correctly mark the functions of the labeled structures.
- Part(c) These candidates were awarded full marks for this part because the candidates were able to provide clear and detailed explanations demonstrating their understanding of how breathing and heart rates change during exercise as required in (i). The candidates were also able to name the sensory organs involved in the activity and to explain correctly the role which the sensory organs played in the activity.