

01. Fig. 1.1 shows the cross – section of a leaf from a green plant.

(a) Identify the layers (i) to (iv).

(i) \_\_\_\_\_

(ii) \_\_\_\_\_

(iii) \_\_\_\_\_

(iv) \_\_\_\_\_

(b) The cell labeled v in fig 1.1 is able to photosynthesise , unlike other cell at the bottom most layer of the leaf.

(i) Write the Chemical equation for photosynthesis and state the organelle which carries out photosynthesis.

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(ii) During a hot and dry day , water vapour is lost from the pores that are surrounded by the cell labeled v. Explain how this process helps the plant to take in water from the soil.

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02. (a) Define the term excretion.

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(b) Fig 2.1 shows the structure of kidney.

(i) Name the blood vessels labelled A and B.

A: \_\_\_\_\_

B: \_\_\_\_\_

(ii) Name the organ that C leads to.

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(iii) State a way in which blood entering the kidney differs from blood exiting the kidney.

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03. (a) State the chemical equation for aerobic respiration.

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(b) Fig 3.1 shows the thoracic section of the human body.

(i) draw two arrows on Fig 3.1 to indicate the direction of movement during inhalation for the ribs and diaphragm respectively.

(ii) Table 3.1 shows the volume of air inhaled per breath and the breathing rate of a normal person during resting conditions.

<b>Volume of air inhaled / cm<sup>3</sup></b>	<b>Breathing rate / min<sup>-1</sup></b>
515	13

Table 3.1

Calculate the volume of oxygen entering the lungs per minute, Given that atmospheric air contains 20% oxygen. Shows your working.

(c) During strenuous exercise, the volume of oxygen obtained by breathing is often insufficient to meet the energy demands of the body. State how the body copes during strenuous exercise and the consequence of oxygen insufficiency on body.

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04. Fig 4.1 shows a section of the human eye.

(a) Identify the parts labeled A and B.

A: \_\_\_\_\_

B: \_\_\_\_\_

(b) (i) describe what happens to structure A when bright light is shone into the eye.

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(ii) Explain why this response is important for protecting the eye.

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(c) Where do signals exiting the eye via structure c lead to?

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05. Fig 5.1 shows the structure of a human heart.

(a) Identify the structures labeled A and B.

A: \_\_\_\_\_

B: \_\_\_\_\_

(b) Name the blood vessels that when blocked, will cause a heart attack.

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(c) On Fig 5.1 draw arrows to indicate the flow of blood through the heart.

(d) the muscles of the heart are thicker on the left ventricle than on the right ventricle. Give a reason for this structural difference in the heart.

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06. Fig 6.1 shows a section of an alveolus.

(a) Name the process which results in the movement of gaseous molecules between the capillary and the alveolus.

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(b) State four adaptations of alveoli and explain how they facilitate gaseous exchange.

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- (c) draw arrows on Fig 6.1 and label them to show the direction of movement of oxygen and carbon dioxide molecules.

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- (d) the arrow on the right in Fig 6.1 indicates the flow of blood in the capillary surrounding the alveolus. Name the next organ that the blood will reach, as well as the blood vessel that connects the two organs.

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