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CLASS X · SCIENCE (086) · BIOLOGY · CBSE BOARD EXAMINATION 2027

CHAPTER 5

Life Processes

ATP · O_2 RA → RV

Answer Booklet · CBSE marking-scheme answers with marks for every point

Every question of the chapter booklet | Marks shown point by point | MCQ keys with reasons

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HOW TO USE THE ANSWERS

1. Answer the question in your notebook **first**. Open this booklet only to check.
2. Each answer is written the way the CBSE marking scheme sets it out: **value points**, with the **mark for each point** in orange beside it.
3. Give yourself marks point by point. Use the same **key words** in your own answers.
4. Equations must be balanced; diagrams must be labelled; numericals need formula, substitution and unit.
5. Copy every wrong answer to the My Mistakes page of your booklet.

READ THIS FIRST

Marking Guide

Model answers to every question in the chapter booklet, set out the way a CBSE examiner marks them.

HOW MARKS ARE GIVEN IN SCIENCE ANSWERS

1. **MCQ and assertion–reason (1 mark):** only the correct option scores. The reason given here is for your understanding.
2. **2 and 3 marks:** one mark (or ½) for each correct **value point**. The examiner looks for the key word – a long answer without it scores less than a short answer with it.
3. **Equations:** a correct balanced equation earns its full mark; an unbalanced one, or one with wrong formulae, usually earns ½ or nothing.
4. **Numericals:** formula, substitution and the final answer **with unit** are marked separately.
5. **Diagrams:** marks for a correct drawing and for the labels asked for. An unlabelled diagram earns little.
6. **Case study (4 marks):** 1 + 1 + 2. **Long answer (5 marks):** the split is shown beside each point.

A

PART A · ANSWERS

NCERT Practice – Answers

Marking-scheme answers for every question in Part A of the chapter booklet.

Life processes and nutrition

A1. Why is diffusion enough for a single-celled organism but not for a human being to get oxygen? **[2]**

In a single-celled organism the whole cell is in contact with the surroundings, so oxygen can diffuse in quickly. — 1

In a human most cells are deep inside the body; diffusion is too slow to reach them all, so special organs (lungs, blood) are needed. — 1

A2. What do we mean by life processes? Name the four basic life processes. **[2]**

The processes that together keep an organism alive and maintain (repair) its body are life processes. — 1

Nutrition, respiration, transportation, excretion. (½ for any two) — 1

A3. Distinguish between autotrophic and heterotrophic nutrition, giving two examples of organisms for each. **[3]**

Autotrophic: the organism makes its own food from simple inorganic substances (CO_2, water) using sunlight. Heterotrophic: the organism takes ready-made food from other organisms. — 1

Autotrophs: green plants, some bacteria (e.g. blue-green algae). — 1

Heterotrophs: animals (e.g. humans, cow), fungi (e.g. mushroom). — 1

A4. From where and through which part does a plant get each of these for photosynthesis: (i) carbon dioxide (ii) water (iii) nitrogen? **[2]**

(i) Carbon dioxide – from the air, through the stomata. ½

(ii) Water – from the soil, absorbed by the roots. ½

(iii) Nitrogen – from the soil, as nitrates or nitrites (or organic compounds made by bacteria), taken in by the roots. 1

A5. Write the balanced equation for photosynthesis and list the three events that take place during the process. **[3]**

$6\,CO_2 + 12\,H_2O \xrightarrow[\text{sunlight}]{\text{chlorophyll}} C_6H_{12}O_6 + 6\,O_2 + 6\,H_2O$ 1

(i) Absorption of light energy by chlorophyll; (ii) conversion of light energy to chemical energy and splitting of water into hydrogen and oxygen; 1

(iii) reduction of carbon dioxide to carbohydrates. 1

A6. Describe an activity to show that chlorophyll is necessary for photosynthesis. **[3]**

Keep a potted plant with variegated leaves (green and white patches) in the dark for three days so that its starch is used up. 1

Keep it in sunlight for about six hours; pluck a leaf, mark its green parts, boil it in alcohol to remove chlorophyll, wash and add iodine solution. 1

Only the parts that were green turn blue-black (starch present); white parts do not – so chlorophyll is needed. 1

A7. What are stomata? How are they opened and closed? **[2]**

Stomata are tiny pores in the epidermis of leaves through which gases are exchanged and water vapour is lost. 1

When water flows into the guard cells they swell and the pore opens; when they lose water they shrink and the pore closes. 1

A8. How does Amoeba take in and digest its food? **[2]**

Amoeba pushes out finger-like pseudopodia that surround the food particle and form a food vacuole. 1

Inside the food vacuole, complex food is broken into simple substances that spread into the cytoplasm; undigested matter is thrown out. 1

Human digestion

A9. What is the role of hydrochloric acid in our stomach? **[2]**

It makes the medium in the stomach acidic, which is needed for the enzyme pepsin to act on proteins. 1

It also kills germs that enter with food. 1

A10. What is the function of digestive enzymes? [1]

They break down large, complex food molecules (starch, proteins, fats) into small, soluble molecules that can be absorbed. 1

A11. How is the small intestine designed to absorb digested food? [2]

Its inner lining has many finger-like projections called villi, which greatly increase the surface area for absorption. 1

The villi are richly supplied with blood vessels, which take the absorbed food to every cell of the body. 1

A12. Name the three juices that act on food in the small intestine and state one function of each. [3]

Bile (from the liver): makes the food alkaline and breaks fats into small globules (emulsification). 1

Pancreatic juice (from the pancreas): trypsin digests proteins; lipase breaks down emulsified fats. 1

Intestinal juice: completes digestion – proteins to amino acids, carbohydrates to glucose, fats to fatty acids and glycerol. 1

Respiration

A13. Give three differences between aerobic and anaerobic respiration. Name one organism that uses the anaerobic mode. [3]

Aerobic needs oxygen; anaerobic takes place without oxygen. ½

Aerobic is completed in mitochondria; anaerobic takes place only in the cytoplasm. ½

Aerobic gives CO_2 + water; anaerobic gives ethanol + CO_2 (or lactic acid). ½

Aerobic releases much more energy than anaerobic. ½

Example of anaerobic mode: yeast (also our muscle cells when short of oxygen). 1

A14. How are the alveoli designed to make the exchange of gases as large as possible? [2]

Alveoli are tiny balloon-like sacs with very thin walls; together they give a huge surface (about 80 m^2). 1

Their walls have a dense network of blood capillaries, so O_2 and CO_2 diffuse quickly between air and blood. 1

A15. Why do land animals have an advantage over aquatic animals in getting oxygen? What do aquatic animals do about it? [2]

Air holds much more oxygen than the oxygen dissolved in water. 1

So aquatic animals breathe much faster (their rate of breathing is high) to get enough oxygen. 1

A16. What would be the effect on a person whose blood has too little haemoglobin? [2]

Haemoglobin carries oxygen; with too little of it, less oxygen reaches the cells. 1

Less energy is released, so the person feels tired, weak and breathless (anaemia). 1

Transportation

A17. Why is it necessary to keep oxygenated and deoxygenated blood separate in mammals and birds? [2]

Separation gives a highly efficient supply of oxygen to the body. 1

Birds and mammals need much energy to keep their body temperature constant, so they need this efficient oxygen supply. 1

A18. What are the two parts of the transport system in a flowering plant, and what does each carry? [2]

Xylem – carries water and minerals from the roots to the leaves. 1

Phloem – carries food made in the leaves to other parts of the plant. 1

A19. How are water and minerals carried from the soil to the leaves of a tall tree? [3]

Root cells take up ions from soil; the difference in ion concentration makes water move into the root and into the xylem. 1

This pushes a steady column of water up the xylem vessels (root pressure), which matters most at night. 1

In the day, water evaporating from the leaves (transpiration) creates a suction that pulls the water column up – the main force in tall trees. 1

A20. How is food transported in plants? [2]

Food (sucrose, amino acids) made in the leaves moves through the sieve tubes of phloem – this is translocation. 1

Sucrose is loaded into phloem using energy from ATP; water enters by osmosis and the pressure pushes food to the parts that need it, upward or downward. 1

A21. Describe double circulation of blood in human beings. Why is it needed? [3]

Deoxygenated blood from the body enters the right atrium, passes to the right ventricle and is pumped to the lungs. 1

Oxygenated blood from the lungs returns to the left atrium, passes to the left ventricle and is pumped to the body. Blood passes through the heart twice in one round. 1

This keeps oxygenated and deoxygenated blood separate and gives an efficient oxygen supply for our high energy needs. 1

Excretion

A22. Describe the structure and working of a nephron. [3]

A nephron has a cup-shaped Bowman's capsule holding a cluster of capillaries (glomerulus), joined to a long tubule that opens into a collecting duct. 1

Blood is filtered in the glomerulus; the filtrate (glucose, amino acids, salts, water, urea) enters the capsule. 1

As it passes along the tubule, useful substances and water are selectively reabsorbed; the remaining fluid is urine, which goes to the collecting duct. 1

A23. Give four ways in which plants get rid of their waste products. [2]

Oxygen and CO_2 diffuse out through stomata; excess water is lost by transpiration. 1

Wastes are stored in leaves that fall off and in cell vacuoles; some are stored as gums and resins in old xylem or released into the soil. (½ each, any four) 1

A24. How is the amount of urine produced regulated? [2]

It depends on how much water is reabsorbed in the tubules of the nephron. 1

This depends on how much excess water and how much dissolved waste is in the body: more water in the body gives more, dilute urine. 1

A25. Compare the alveoli in the lungs and the nephrons in the kidneys in structure and function. [3]

Structure: alveoli are tiny thin-walled air sacs with capillaries around them; nephrons are tubules with a glomerulus in Bowman's capsule. 1

Function: alveoli exchange O_2 and CO_2 between air and blood; nephrons filter blood and remove nitrogenous wastes as urine. 1

Both give a very large surface area and are closely linked to blood capillaries. 1

PART B · ANSWERS

B Exemplar Practice – Answers

Marking-scheme answers for every question in Part B of the chapter booklet.

Multiple choice

Q	Answer	Working / reason
B1	**(c)** Mouth → oesophagus → stomach → small intestine → large intestine	Food passes mouth → oesophagus → stomach → small intestine → large intestine → anus.
B2	**(b)** Starch breaking into sugar	Salivary amylase breaks starch into sugar.
B3	**(b)** mucus	Mucus covers the lining and protects it from HCl.
B4	**(b)** Stomata	Gases enter and leave the leaf through stomata.
B5	**(b)** mitochondria	Aerobic breakdown of pyruvate takes place in mitochondria.
B6	**(b)** Pulmonary vein	Pulmonary veins carry oxygenated blood to the left atrium.
B7	**(b)** Frog	Amphibians (frog) have three chambers; fish two; birds and mammals four.
B8	**(a)** water and minerals	Xylem carries water and dissolved minerals from roots upward.
B9	**(d)** nephron	Each kidney has many nephrons that filter blood.
B10	**(a)** Cytoplasm	Anaerobic breakdown of pyruvate takes place in the cytoplasm.

Short answer

B11. A person's bile duct is blocked. Digestion of which food will be affected most, and why? [2]

Digestion of fats will be affected. 1

Bile, which emulsifies fats (and makes the medium alkaline for lipase), cannot reach the small intestine, so lipase acts poorly on the large fat globules. 1

B12. What would happen to a cut if blood had no platelets? Explain. [2]

The bleeding would not stop easily; much blood could be lost. 1

Platelets help blood to clot at the cut and plug the leak; without them no clot forms. 1

B13. Why are the walls of the ventricles thicker than those of the atria? Which ventricle has the thickest wall? [2]

Ventricles pump blood out of the heart to the lungs and to all organs, so they need thick muscular walls; atria only receive blood and pass it to the ventricles. 1

The left ventricle is the thickest, as it pumps blood to the whole body. 1

B14. The lower surfaces of all the leaves of a potted plant are coated with petroleum jelly. Give two effects on the plant. [2]

Stomata (mostly on the lower surface) are blocked, so less CO_2 enters and photosynthesis falls. 1

Transpiration falls, so less water and minerals are pulled up (and gas exchange for respiration is reduced). 1

B15. Why is ATP called the energy currency of the cell? How is it used? [2]

Energy released in respiration is stored as ATP, which every cell uses as a common source of energy, like money. 1

When the end phosphate bond of ATP is broken (ATP → ADP + phosphate), energy (30.5 kJ/mol) is released to drive muscle contraction, protein making and nerve impulses. 1

B16. Give two uses of transpiration to a plant. [2]

It creates a pull that helps absorb and move water and minerals up from the roots to the leaves. 1

It helps keep the plant cool (temperature regulation). 1

C

PART C · ANSWERS

Board Pattern Practice – Answers

Marking-scheme answers for every question in Part C of the chapter booklet.

Nutrition in plants

Q	Answer	Working / reason
C1	**(b)** water	Water is split into hydrogen and oxygen; the oxygen is released.
C2	**(b)** They take it in at night and store it as an intermediate for use in the day	Stomata open at night; the stored intermediate is used with light energy in the day.
C3	**(a)**	Both true, and R explains why no starch is left.

C4. How do plants obtain nitrogen, and for what do they use it? [2]

From the soil, as inorganic nitrates or nitrites, or as organic compounds made by bacteria from atmospheric nitrogen. 1

It is used to make proteins and other essential compounds. 1

C5. List the events of photosynthesis. How do desert plants manage photosynthesis while saving water? [3]

Absorption of light by chlorophyll; light energy changed to chemical energy and water split into hydrogen and oxygen; CO_2 reduced to carbohydrates. 2

Desert plants open stomata at night, take in CO_2 and store it as an intermediate; in the day, with stomata closed, they use it with light energy. 1

C6. Describe an activity to show that carbon dioxide is needed for photosynthesis. [3]

Take two destarched potted plants (kept 3 days in the dark). Place each under a bell jar on a glass plate, sealed with vaseline; put a watch glass of potassium hydroxide in one jar only. 1

Keep both in sunlight for a few hours; then test one leaf from each with iodine after boiling it in alcohol. 1

The leaf from the jar with KOH does not turn blue-black (KOH absorbed CO_2, no starch formed); the other does – so CO_2 is needed. 1

Human digestion

Q	Answer	Working / reason
C7	**(b)** Trypsin and lipase	Pancreatic juice has trypsin (proteins) and lipase (fats); pepsin is in gastric juice.
C8	**(b)** bile salts	Bile salts emulsify fats; lipase then digests them.
C9	**(b)** cellulose in grass takes longer to digest	Herbivores need a longer intestine to digest cellulose.
C10	**(a)**	Both true; R gives the reason for A.

C11. Our mouth waters when we see tasty food. Name the juice and its enzyme, and state why we must also chew food well. [2]

Saliva, from the salivary glands; it contains salivary amylase, which breaks starch into sugar. 1

Chewing breaks food into small pieces and mixes it with saliva, so the enzyme acts on a larger surface and food is easy to swallow. 1

C12. Name the three substances released by the gastric glands and state the role of each. [3]

Hydrochloric acid – makes the medium acidic for pepsin (and kills germs). 1

Pepsin – an enzyme that digests proteins. 1

Mucus – protects the inner lining of the stomach from the acid. 1

C13. Name the gland that makes each of the following, and state its function: (i) bile (ii) trypsin (iii) salivary amylase. [3]

(i) Bile – liver: emulsifies fats and makes the medium alkaline. 1

(ii) Trypsin – pancreas: digests proteins. 1

(iii) Salivary amylase – salivary glands: breaks starch into sugar. 1

C14. Trace what happens to the starch in a piece of chapati from the mouth until it reaches the blood. [3]

Mouth: salivary amylase starts breaking starch into sugar. 1

Small intestine: pancreatic amylase and intestinal juice complete the change of carbohydrates into glucose. 1

Glucose is absorbed by the villi of the small intestine into the blood. 1

Respiration and breathing

Q	Answer	Working / reason
C15	**(b)** yeast without oxygen	Yeast without oxygen gives ethanol + CO_2 + energy (fermentation).
C16	**(b)** ATP	Energy is stored and used as ATP.
C17	**(a)** P turns milky sooner, as breathed-out air has more CO_2	Exhaled air contains much more CO_2 produced in respiration.
C18	**(a)**	Both true; R explains A.
C19	**(c)**	A is true – it carries oxygen. R is false: CO_2 is carried mostly dissolved in blood.

C20. Why do we sometimes get muscle cramps after running fast? [2]

During fast running the muscle cells do not get enough oxygen, so pyruvate is broken down anaerobically into lactic acid. 1

Lactic acid builds up in the muscles and causes cramps. 1

C21. Where is the diaphragm found? What happens to it and to the ribs when we breathe in? [2]

The diaphragm is a dome-shaped muscular sheet below the lungs, separating the chest cavity from the abdomen. 1

When we breathe in, it contracts and flattens and the ribs are lifted; the chest cavity gets larger and air is sucked into the lungs. 1

C22. Trace the path of air from the nostrils to the alveoli. Why are there rings of cartilage in the throat? [3]

Nostrils → nasal passage → pharynx → larynx → trachea → bronchi → bronchioles → alveoli. 2

Rings of cartilage keep the air passage open, so it does not collapse when there is little air in it. 1

C23. Show by a flow chart the breakdown of glucose (i) in yeast (ii) in our muscle cells short of oxygen (iii) in the presence of oxygen. Name where the first step takes place. [3]

Glucose → pyruvate + energy, in the cytoplasm. ½

(i) Pyruvate → ethanol + CO_2 + energy (no oxygen, yeast). 1

(ii) Pyruvate → lactic acid + energy (lack of oxygen, muscle cells). 1

(iii) Pyruvate → CO_2 + water + energy (oxygen, in mitochondria). ½

Heart, blood and circulation

Q	Answer	Working / reason
C24	**(d)** Left ventricle	The left ventricle pumps blood to the whole body.
C25	**(c)** It has more protein than blood plasma	Lymph has less protein than plasma.
C26	**(b)** 120/80 mm Hg	Systolic about 120 mm Hg, diastolic about 80 mm Hg.
C27	**(a)**	Both true; separation gives the efficient oxygen supply needed for this high energy use.

C28. Name: (i) the vessel bringing deoxygenated blood from the body to the heart (ii) the vessel taking it to the lungs (iii) the chamber that receives blood from the lungs (iv) the vessel carrying oxygenated blood to the body. Why are valves present in the heart? [3]

(i) Vena cava (ii) pulmonary artery 1

(iii) left atrium (iv) aorta 1

Valves prevent blood from flowing backward when the chambers contract. 1

C29. Compare the hearts of a fish, a frog and a bird. Why is a bird's heart best suited to its needs? [3]

Fish – 2 chambers; blood passes through the heart only once in a round (heart → gills → body). 1

Frog – 3 chambers; some mixing of oxygenated and deoxygenated blood. ½

Bird – 4 chambers; complete separation of oxygenated and deoxygenated blood (double circulation). ½

A bird uses much energy to keep its body temperature constant (and to fly), so it needs the most efficient oxygen supply. 1

C30. What is blood pressure? Name the instrument used to measure it. What is hypertension caused by? [2]

The force that blood exerts on the walls of a blood vessel. ½

It is measured with a sphygmomanometer. ½

Hypertension (high blood pressure) is caused by narrowing (constriction) of arterioles; it can burst an artery and cause internal bleeding. 1

Transport in plants

Q	Answer	Working / reason
C31	**(b)** phloem sieve tubes	Translocation takes place in phloem.
C32	**(a)**	Both true; R explains A.

C33. Give two differences between the transport of water and the transport of food in plants. [2]

Water and minerals move in xylem; food moves in phloem. 1

Water moves only upward, without using energy (root pressure, transpiration pull); food moves up and down, using energy from ATP. 1

Excretion

Q	Answer	Working / reason
C34	**(c)** Glucose	All the glucose is reabsorbed in the tubules.
C35	**(b)** stores urine	The bladder is a muscular bag that stores urine.
C36	**(a)**	Both true; R explains A.

C37. Name the structural and functional unit of (i) the kidney (ii) the nervous system. [1]

(i) Nephron ½

(ii) Neuron ½

C38. Give one difference in structure and one difference in function between alveoli and nephrons. Give one feature they share. [3]

Structure: alveoli are thin-walled air sacs; a nephron is a tubule with a glomerulus in Bowman's capsule. 1

Function: alveoli exchange gases; nephrons filter blood to make urine. 1

Both have a large surface area and a rich supply of blood capillaries. 1

C39. What is dialysis? When is it needed, and how is it different from the working of a kidney? [3]

Dialysis is the removal of nitrogenous wastes from the blood by an artificial kidney. 1

It is needed when the kidneys fail (because of infection, injury or poor blood supply) and poisonous wastes build up. 1

Blood passes through tubes with a semi-permeable lining in a dialysing fluid; unlike the kidney, there is no reabsorption. 1

Long answer

C40. (a) Describe how blood flows through the four chambers of the human heart and the blood vessels joined to it. (b) What is double circulation? (c) Why do ventricles have thicker walls than atria? [5]

(a) Body → vena cava → right atrium → right ventricle → pulmonary artery → lungs. 1

Lungs → pulmonary vein → left atrium → left ventricle → aorta → body. 1

Valves between atria and ventricles prevent backflow. 1

(b) Blood passes through the heart twice in one round of the body – once for the lungs, once for the body. 1

(c) Ventricles pump blood to the lungs and the whole body, so they need strong, thick muscles; atria only receive blood. 1

C41. (a) Describe the digestion of food in the stomach and small intestine, naming the juices and their enzymes. (b) How is digested food absorbed? (c) What happens in the large intestine? [5]

(a) Stomach: gastric juice – HCl (acidic medium), pepsin (proteins), mucus (protects lining). 1

Small intestine: bile (liver) emulsifies fats and makes the medium alkaline; pancreatic juice – trypsin (proteins), lipase (fats). 1

Intestinal juice completes digestion: proteins → amino acids, carbohydrates → glucose, fats → fatty acids + glycerol. 1

(b) Villi give a large surface area and have a rich blood supply; digested food passes into the blood and reaches every cell. 1

(c) Extra water is absorbed; undigested waste is removed through the anus, controlled by the anal sphincter. 1

C42. (a) Name the organs of the human excretory system and state the function of each. (b) How is urine formed in a nephron? (c) How do plants get rid of excess water? [5]

(a) Kidneys – filter blood and form urine; ureters – carry urine to the bladder; urinary bladder – stores urine; urethra – passes urine out. 2

(b) Filtration in the glomerulus into Bowman's capsule (glucose, amino acids, salts, water, urea). 1

Selective reabsorption of useful substances and water in the tubule; the remaining fluid (urine) goes to the collecting duct. 1

(c) By transpiration – loss of water vapour mainly through the stomata of leaves. 1

PART D · ANSWERS

D Case-Based Questions – Answers

Marking-scheme answers for every question in Part D of the chapter booklet.

D1. Case Study · The Sprint and the Dough [4]

(i) Name the substance that built up in Riya's muscles and caused the cramp. [1]

Lactic acid. 1

(ii) Which gas made the dough rise? Name the process. [1]

Carbon dioxide; fermentation (anaerobic respiration in yeast). 1

(iii) Show the breakdown of glucose in yeast by a flow chart, and name the part of the cell where the first step happens. [2]

Glucose → pyruvate + energy (in the cytoplasm). 1

Pyruvate → ethanol + carbon dioxide + energy (without oxygen). 1

OR

(iii) Why does aerobic respiration release more energy than anaerobic respiration? Where in the cell is it completed? [2]

In aerobic respiration glucose is broken down completely to CO_2 and water, so much more energy is released; in anaerobic respiration the breakdown is incomplete. 1

It is completed in the mitochondria. 1

D2. Case Study · The Dialysis Ward [4]

(i) Name the unit of the kidney that filters blood. [1]

Nephron. 1

(ii) The filtrate has glucose, but urine does not. Why? [1]

Glucose is selectively reabsorbed into the blood as the filtrate passes along the tubule. 1

(iii) Explain how the dialysis machine cleans the blood and how its working differs from a nephron. [2]

Blood flows through long tubes with a semi-permeable lining placed in a dialysing fluid; nitrogenous wastes pass out of the blood into the fluid. 1

Unlike a nephron, there is no reabsorption of useful substances and water. 1

OR

(iii) Trace the path of urine from the kidney to the outside, and state what decides how much water is reabsorbed. **[2]**

Kidney → ureter → urinary bladder → urethra → outside. 1

The amount of excess water and dissolved waste in the body decides how much water is reabsorbed. 1

D3. Case Study · The Starch Test [4]

(i) In which tube was the starch digested? **[1]**

Tube A. 1

(ii) Why did tube B turn blue-black? **[1]**

Boiling destroyed the enzyme in saliva, so the starch was not digested. 1

(iii) Name the enzyme in saliva and the product it forms. Where in the canal is the digestion of starch completed? **[2]**

Salivary amylase; it breaks starch into sugar. 1

Digestion of carbohydrates is completed in the small intestine (to glucose). 1

OR

(iii) Why must food be broken into small soluble molecules, and which structures absorb them? **[2]**

Large molecules cannot pass through the wall of the intestine into the blood; only small, soluble molecules can be absorbed. 1

The villi of the small intestine absorb them. 1