

**Unit Code:** H420/01

**Qual Name:** A level Biology A

**Qual Title:** Biological processes

Question Set	Q. No	Total Marks	AO	Spec Ref.	Topic	Question Subject, If required	Additional Notes/Comments
1	ai	1	2	5.1.1d	Communication and homeostasis	Synoptic question on thermoregulation and exchange surfaces on animals and insects, including biological drawing skills.	Application of thermoregulation knowledge to unfamiliar organism
1	aii	2	2	5.1.1d, 3.1.1a	Communication and homeostasis	Synoptic question on thermoregulation and exchange surfaces on animals and insects, including biological drawing skills.	Synoptic with Exchange surfaces. Application of thermoregulation knowledge to unfamiliar organism
1	bi	1	1	3.1.1f	Exchange surfaces	Synoptic question on thermoregulation and exchange surfaces on animals and insects, including biological drawing skills.	Identifying parts of insect breathing system from photograph.
1	bii	1	1	3.1.1f	Exchange surfaces	Synoptic question on thermoregulation and exchange surfaces on animals and insects, including biological drawing skills.	Identifying parts of insect breathing system from photograph.
1	c	3	1	3.1.2a	Transport in animals	Synoptic question on thermoregulation and exchange surfaces on animals and insects, including biological drawing skills.	The need for transport systems in animals
1	d	2	3	3.1.1g, 1.1.2c	Exchange surfaces	Synoptic question on thermoregulation and exchange surfaces on animals and insects, including biological drawing skills.	Synoptic with Implementing. Practical skill of biological drawing.
2	ai	2	2	1.1.3a, 1.1.3b, 5.1.2b(i)	Analysis	Synoptic question on excretion as an example of homeostasis and different types of microscopes, including calculation of magnification and data analysis.	Synoptic with Excretion as an example of homeostasis. Calculation from bar chart

Question Set	Q.	Total Marks	AO	Spec Ref.	Topic	Question Subject, If required	Additional Notes/Comments
2	aii	2	2	5.1.2b(i)	Excretion as an example of homeostatic control	Synoptic question on excretion as an example of homeostasis and different types of microscopes, including calculation of magnification and data analysis.	Suggesting an explanation of data
2	bi	3	2	2.1.1e, 1.1.3b	Cell structure	Synoptic question on excretion as an example of homeostasis and different types of microscopes, including calculation of magnification and data analysis.	Magnification scaling and calculation of volume. Synoptic with Analysis. NB: scale of image reproduced may alter mark scheme
2	bii	2	2	2.1.1a	Cell structure	Synoptic question on excretion as an example of homeostasis and different types of microscopes, including calculation of magnification and data analysis.	Identifying which microscope has produced an image
3	a	2	1	5.2.1g(i)	Photosynthesis	Synoptic question on photosynthesis, description of organs, aerobic & anaerobic respiration in plant roots, transport in plants in terms of osmosis and properties of water, including data analysis.	Explaining the key term 'limiting factor'.
3	bi	3	3	1.1.4a, 1.1.3a	Evaluation	Synoptic question on photosynthesis, description of organs, aerobic & anaerobic respiration in plant roots, transport in plants in terms of osmosis and properties of water, including data analysis.	Synoptic with analysis. Concluding from data in a table.
3	bii	6	2	5.2.2a, 5.2.2c, 5.2.2d, 5.2.2e, 5.2.2f, 5.2.2i(i)	Respiration	Synoptic question on photosynthesis, description of organs, aerobic & anaerobic respiration in plant roots, transport in plants in terms of osmosis and properties of water, including data analysis.	Level of Response about the consequences of anaerobic respiration in plant roots.

Question Set	Q.	Total Marks	AO	Spec Ref.	Topic	Question Subject, If required	Additional Notes/Comments
3	ci	2	1	2.1.2a	Biological molecules	Synoptic question on photosynthesis, description of organs, aerobic & anaerobic respiration in plant roots, transport in plants in terms of osmosis and properties of water, including data analysis.	Application of knowledge about properties of water
3	cii	2	2	2.1.5d(i) , 3.1.3b(i) . 3.1.3d	Biological membranes	Synoptic question on photosynthesis, description of organs, aerobic & anaerobic respiration in plant roots, transport in plants in terms of osmosis and properties of water, including data analysis.	Synoptic with Transport in plants. Application of osmosis knowledge to plant transport example.
3	d	4	1	2.1.6h, 2.1.6i	Cell division, cell diversity and cellular organisation	Synoptic question on photosynthesis, description of organs, aerobic & anaerobic respiration in plant roots, transport in plants in terms of osmosis and properties of water, including data analysis.	Applying knowledge of the term organ to the example of a leaf
4	a	3	2	2.1.6f, 2.1.6g	Cell division, cell diversity and cellular organisation	Synoptic question on the stages of meiosis, DNA structure, structure of mitochondria and data analysis on respiration pathways.	Interpreting diagrams of stages of meiosis
4	b	4	1	2.1.3a, 2.1.3b, 2.1.3d(i)	Nucleotides and nucleic acids	Synoptic question on the stages of meiosis, DNA structure, structure of mitochondria and data analysis on respiration pathways.	Gap fill about DNA structure
4	ci	3	1	5.2.2b	Respiration	Synoptic question on the stages of meiosis, DNA structure, structure of mitochondria and data analysis on respiration pathways.	Interpreting unfamiliar mitochondria diagram

Question Set	Q.	Total Marks	AO	Spec Ref.	Topic	Question Subject, If required	Additional Notes/Comments
4	cii	1	3	5.2.2a, 5.2.2c, 5.2.2e	Respiration	Synoptic question on the stages of meiosis, DNA structure, structure of mitochondria and data analysis on respiration pathways.	Concluding from data about products of respiration pathways
5	a	3	2	1.1.3a, 1.1.3b, 1.1.3c, 5.2.2i, 5.2.2l	Analysis	Synoptic question on respiration and biological molecules, including data analysis (i.e.. standard deviation, error bars, percentage change)	Synoptic with Respiration and Standard deviation calculation.
5	b	2	2	1.1.3d, 5.5.2i, 5.2.2l	Analysis	Synoptic question on respiration and biological molecules, including data analysis (i.e.. standard deviation, error bars, percentage change)	Synoptic with Respiration. Plotting error bars on a bar chart.
5	c	3	2	1.1.3a, 1.1.3b, 1.1.3c, 5.2.2i, 5.2.2l	Analysis	Synoptic question on respiration and biological molecules, including data analysis (i.e.. standard deviation, error bars, percentage change)	Synoptic with Respiration. Reading from graph and calculating percentage change.
5	di	2	3	1.1.4a, 1.1.4d, 1.1.3a, 5.2.2i, 5.2.2l	Evaluation	Synoptic question on respiration and biological molecules, including data analysis (i.e.. standard deviation, error bars, percentage change)	Synoptic with Analysis and Respiration. Evaluating conclusions drawn from a graph and a table.
5	dii	1	3	1.1.4a, 1.1.4d, 1.1.3a, 5.2.2i, 5.2.2l	Evaluation	Synoptic question on respiration and biological molecules, including data analysis (i.e.. standard deviation, error bars, percentage change)	Synoptic with Analysis and Respiration. Identifying types of experimental error
5	e	1	1	2.1.1i, 2.1.2n	Cell structure	Synoptic question on respiration and biological molecules, including data analysis (i.e.. standard deviation, error bars, percentage change)	Synoptic with Biological molecules. Identifying the site of protein synthesis.

Question Set	Q.	Total Marks	AO	Spec Ref.	Topic	Question Subject, If required	Additional Notes/Comments
6	a	6	3	1.1.3a, 1.1.4a, 1.1.4e, 5.1.5a(i), 5.1.5b, 5.1.5e	Evaluation	Plant and animal responses including analysis and evaluation of results and experimental procedures.	Synoptic with Analysis and Plant and animal responses. Level of response evaluating a conclusion drawn from weak and poorly presented experimental data.
6	b	6	3	1.1.1a, 1.1.1b, 1.1.1c, 1.1.2a, 1.1.4a, 1.1.4c, 1.1.4e, 5.1.5e	Planning	Plant and animal responses including analysis and evaluation of results and experimental procedures.	Synoptic with Evaluation and Plant and animal responses. Identifying and explaining limitations of experimental method and suggesting improvements.
7	ai	1	1	5.1.2c(i), 5.1.2c(ii)	Excretion as an example of homeostatic control	Synoptic question on kidney structure and function, including mitosis and stem cells.	Identifying parts of a kidney from a photomicrograph.
7	aii	1	1	5.1.2c(i), 5.1.2c(ii)	Excretion as an example of homeostatic control	Synoptic question on kidney structure and function, including mitosis and stem cells.	Identifying parts of a kidney from a photomicrograph.
7	bi	3	2	5.1.2c(i)	Excretion as an example of homeostatic control	Synoptic question on kidney structure and function, including mitosis and stem cells.	Applying knowledge of kidney function to new information.
7	bii	2	2	5.1.2d	Excretion as an example of homeostatic control	Synoptic question on kidney structure and function, including mitosis and stem cells.	Applying knowledge of kidney function to new information.
7	ci	3	2	2.1.6a, 2.1.6c	Cell division, cell diversity and cellular organisation	Synoptic question on kidney structure and function, including mitosis and stem cells.	Command word amended from original for accessibility. Applying mitosis knowledge to unfamiliar example.

Question Set	Q.	Total Marks	AO	Spec Ref.	Topic	Question Subject, If required	Additional Notes/Comments
7	cii	2	1	2.1.6j	Cell division, cell diversity and cellular organisation	Synoptic question on kidney structure and function, including mitosis and stem cells.	Command word added to original for accessibility. Recognising properties of stem cells.
8	ai	2	2	5.1.4e	Hormonal communication	Synoptic question on respiration and muscle contraction including diabetes and spirometer, with analysis and evaluation of data.	Applying knowledge of types of diabetes
8	aii	2	2	5.1.4f	Hormonal communication	Synoptic question on respiration and muscle contraction including diabetes and spirometer, with analysis and evaluation of data.	Applying knowledge of diabetes treatment
8	bi	1	1	5.1.4d	Hormonal communication	Synoptic question on respiration and muscle contraction including diabetes and spirometer, with analysis and evaluation of data.	Naming a target tissue for insulin
8	bii	3	1	5.1.5(i)	Plant and animal responses	Synoptic question on respiration and muscle contraction including diabetes and spirometer, with analysis and evaluation of data.	Explaining the role of glucose in muscle contraction
8	c	3	3	1.1.3(a), 1.1.3(b), 1.1.4(a), 3.1.1(e)	Exchange surfaces	Synoptic question on respiration and muscle contraction including diabetes and spirometer, with analysis and evaluation of data.	Evaluating a claim based on data from a spirometer. Synoptic with Analysis and Evaluation.
9	ai	4	1	5.2.1c(i)	Photosynthesis	Synoptic question on the structure of chloroplasts, function of photosynthetic pigment, including the structure and function of plasma membranes.	The importance of photosynthetic pigments
9	aii	1	2	5.2.1c(i)	Photosynthesis	Synoptic question on the structure of chloroplasts, function of photosynthetic pigment, including the structure and function of plasma membranes.	The importance of photosynthetic pigments

Question Set	Q.	Total Marks	AO	Spec Ref.	Topic	Question Subject, If required	Additional Notes/Comments
9	b	3	2	5.2.1b	Photosynthesis	Synoptic question on the structure of chloroplasts, function of photosynthetic pigment, including the structure and function of plasma membranes.	Comparing the structure of different chloroplasts
9	ci	2	1	2.1.5(a), 2.1.5(b)	Biological membranes	Synoptic question on the structure of chloroplasts, function of photosynthetic pigment, including the structure and function of plasma membranes.	Role of cholesterol in membranes
9	cii	2	1	2.1.5(a)	Biological membranes	Synoptic question on the structure of chloroplasts, function of photosynthetic pigment, including the structure and function of plasma membranes.	Role of membranes in cells.
10	a	6	3	1.1.1a, 1.1.1b, 1.1.2a, 3.1.3(c)( ii)	Planning	Synoptic question on transpiration, properties of cellulose and intracellular/extracellular enzymes.	Level of response planning a valid potometer investigation. Synoptic with Transport in plants.
10	b	3	1	2.1.2g	Biological molecules	Synoptic question on transpiration, properties of cellulose and intracellular/extracellular enzymes.	Properties of cellulose
10	c	1	2	2.14b	Enzymes	Synoptic question on transpiration, properties of cellulose and intracellular/extracellular enzymes.	Distinguishing between intracellular and extracellular enzymes.
11	a	3	2	5.2.2(j), 5.2.2(k)	Respiration	Structure of carbohydrates, respiratory substrates and respiration, including analysis of RQ data.	Analysing RQ data to suggest respiratory substrate
11	b	4	2	2.1.2(d), 2.1.2(e), 2.1.2(f)	Biological molecules	Structure of carbohydrates, respiratory substrates and respiration, including analysis of RQ data.	Comparing carbohydrate structures

Question Set	Q.	Total Marks	AO	Spec Ref.	Topic	Question Subject, If required	Additional Notes/Comments
11	c	6	1	5.2.2(g), 5.2.2(h)	Respiration	Structure of carbohydrates, respiratory substrates and respiration, including analysis of RQ data.	The process of chemiosmosis
12	ai	3	3	1.1.1a, 2.1.5(c)(i), 2.1.5(c)(ii)	Biological membranes	Biological membranes including experimental planning, implementing and evaluating of data.	Understanding why certain steps are important in an investigation about membranes. Synoptic with Planning
12	aii	2	3	1.1.1(b), 2.1.5(c)(i), 2.1.5(c)(ii)	Planning	Biological membranes including experimental planning, implementing and evaluating of data.	Identifying control variables in a membrane investigation. Synoptic with Biological membranes
12	bi	3	3	1.1.2(c), 1.1.3(d)(i), 2.1.5(c)(ii)	Implementing	Biological membranes including experimental planning, implementing and evaluating of data.	Identifying errors in a student's graph. Synoptic with Analysis and Biological membranes
12	bii	2	3	1.1.4(b), 1.1.4(e)	Evaluating	Biological membranes including experimental planning, implementing and evaluating of data.	The importance of replicates
13	ai	4	2	5.1.3c	Neuronal communication	Synoptic question on the transmission of action potential, ventilation and heart rate in response to toxin.	Applying knowledge of nervous transmission to the action of a toxin.
13	aii	2	2	3.1.1d	Exchange surfaces	Synoptic question on the transmission of action potential, ventilation and heart rate in response to toxin.	Applying knowledge of importance of ventilation in mammals.
13	aiii	3	2	3.1.2g	Transport in animals	Synoptic question on the transmission of action potential, ventilation and heart rate in response to toxin.	Applying knowledge of control of heart



Question Set	Q.	Total Marks	AO	Spec Ref.	Topic	Question Subject, If required	Additional Notes/Comments
13	b	1	2	5.1.3b	Neuronal communication	Synoptic question on the transmission of action potential, ventilation and heart rate in response to toxin.	Applying knowledge of saltatory conduction.
14	ai	3	2	1.1.3(b), 1.1.3(c), 5.2.1(a)	Analysis	Synoptic question on rate of respiration and photosynthesis, including experimental planning, evaluating and analysis (ie. rate, volume of cylinder, percentage change)	Calculation of rate using volume of a cylinder. Synoptic with Photosynthesis
14	a ii	2	2	1.1.3(b), 1.1.3(c), 5.2.1(a)	Analysis	Synoptic question on rate of respiration and photosynthesis, including experimental planning, evaluating and analysis (ie. rate, volume of cylinder, percentage change)	Calculation of percentage change. Synoptic with Photosynthesis
14	a iii	1	3	1.1.1(a), 5.2.1(a)	Photosynthesis	Synoptic question on rate of respiration and photosynthesis, including experimental planning, evaluating and analysis (ie. rate, volume of cylinder, percentage change)	Rationale for design of experiment. Synoptic with planning
14	b	2	3	1.1.4(a), 5.2.1(a)	Evaluation	Synoptic question on rate of respiration and photosynthesis, including experimental planning, evaluating and analysis (ie. rate, volume of cylinder, percentage change)	Evaluating a conclusion drawn from data in a table. Synoptic with Photosynthesis.
15	a	3	1	5.1.2(b)(ii), 5.1.4(c)(ii), 5.1.5(l)(ii)	Excretion as an example of homeostatic control	Synoptic question on hormonal communication of the heart, reflex action and identifying tissues from photomicrograph.	Identifying tissues from photomicrograph. Synoptic with Hormonal communication and Plant and animal responses

Question Set	Q.	Total Marks	AO	Spec Ref.	Topic	Question Subject, If required	Additional Notes/Comments
15	b	4	1	3.1.2(g), 3.1.2(i), 5.1.5(k)	Plant and animal responses	Synoptic question on hormonal communication of the heart, reflex action and identifying tissues from photomicrograph.	Correcting student errors about control of heart rate. Synoptic with Transport in animals.
15	ci	2	2	5.1.5(i)	Plant and animal responses	Synoptic question on hormonal communication of the heart, reflex action and identifying tissues from photomicrograph.	Suggesting the advantage of an unfamiliar reflex
15	cii	3	1	5.1.5(i)	Plant and animal responses	Synoptic question on hormonal communication of the heart, reflex action and identifying tissues from photomicrograph.	Explaining the advantage of the blinking reflex
16	ai	4	2	3.1.2f	Transport in animals	Synoptic question on the cardiac cycle using a cardiac output graph and the site of respiration, including experimental planning, evaluating and data analysis (ie. rate and percentage change).	Describing a cardiac output graph.
16	aii	1	1	1.1.3b, 1.1.3c, 3.1.2f	Transport in animals	Synoptic question on the cardiac cycle using a cardiac output graph and the site of respiration, including experimental planning, evaluating and data analysis (ie. rate and percentage change).	Calculating heart rate from cardiac output graph. Synoptic with Analysis
16	aiii	2	2	1.1.3b, 1.1.3c, 3.1.2f	Transport in animals	Synoptic question on the cardiac cycle using a cardiac output graph and the site of respiration, including experimental planning, evaluating and data analysis (ie. rate and percentage change).	Calculating percentage change from cardiac output graph. Synoptic with Analysis
16	aiv	1	1	3.1.2f	Transport in animals	Synoptic question on the cardiac cycle using a cardiac output graph and the site of respiration, including experimental planning, evaluating and data analysis (ie. rate and percentage change).	Interpreting cardiac output graph.

Question Set	Q.	Total Marks	AO	Spec Ref.	Topic	Question Subject, If required	Additional Notes/Comments
16	b	3	3	1.1.1b, 1.1.1c, 1.1.4c, 1.1.4e, 5.2.2a	Evaluation	Synoptic question on the cardiac cycle using a cardiac output graph and the site of respiration, including experimental planning, evaluating and data analysis (ie. rate and percentage change).	Identifying control variables. Synoptic with Planning and Respiration
16	c	1	1	2.1.1g, 5.2.2g	Respiration	Synoptic question on the cardiac cycle using a cardiac output graph and the site of respiration, including experimental planning, evaluating and data analysis (ie. rate and percentage change).	Applying knowledge of site of respiration. Synoptic with cell structure.
17	a	3	1	5.1.5b, 5.1.5d	Plant and animal responses	Plant hormones and biochemical tests, including planning, evaluating and analysis of data (ie. plotting a line graph).	Explaining why named substance is regarded as a hormone.
17	bi	4	3	1.1.2c, 1.1.3a, 1.1.3b, 1.1.3di, 5.1.5d	Analysis	Plant hormones and biochemical tests, including planning, evaluating and analysis of data (ie. plotting a line graph).	Drawing a line graph from given data. Synoptic with Implementation and Plant and animal responses
17	bii	1	1	5.1.5d	Plant and animal responses	Plant hormones and biochemical tests, including planning, evaluating and analysis of data (ie. plotting a line graph).	State role of a named plant hormone.
17	ci	1	3	1.1.1c, 2.1.2q	Biological molecules	Plant hormones and biochemical tests, including planning, evaluating and analysis of data (ie. plotting a line graph).	Applying knowledge of biochemical tests. Synoptic with Planning
17	cii	2	3	1.1.3a, 2.1.2q	Biological molecules	Plant hormones and biochemical tests, including planning, evaluating and analysis of data (ie. plotting a line graph).	Drawing conclusions from biochemical test results. Synoptic with Analysis

Question Set	Q.	Total Marks	AO	Spec Ref.	Topic	Question Subject, If required	Additional Notes/Comments
17	ciii	1	3	1.1.4a, 1.1.4c, 1.1.4d, 2.1.2q, 2.1.2r	Evaluation	Plant hormones and biochemical tests, including planning, evaluating and analysis of data (ie. plotting a line graph).	Justifying selection of equipment to generate quantitative data. Synoptic with Biological molecules
18	a	6	1	3.1.2b	Transport in animals	Applying knowledge of hormones and Bohr shift in unfamiliar context and comparison of circulatory systems in mammals and fish.	Level of response comparing different circulatory systems
18	b	2	2	5.1.4a	Hormonal communication	Applying knowledge of hormones and Bohr shift in unfamiliar context and comparison of circulatory systems in mammals and fish.	Applying knowledge of hormones to unfamiliar example
18	c	2	2	3.1.2i	Transport in animals	Applying knowledge of hormones and Bohr shift in unfamiliar context and comparison of circulatory systems in mammals and fish.	Applying knowledge of Bohr shift to unfamiliar example
19	a	3	2	3.1.2c	Transport in animals	Synoptic question on blood vessels, biological molecules and membranes, including data evaluation and analysis.	Applying knowledge of blood vessel structure to unfamiliar example
19	b	2	2	5.1.4a, 2.1.2j, 2.1.5d(i)	Hormonal communication	Synoptic question on blood vessels, biological molecules and membranes, including data evaluation and analysis.	Applying knowledge of lipids and membranes to unfamiliar hormone example. Synoptic with Biological molecules and Biological membranes
19	ci	3	2	1.1.3b, 1.1.3c, 1.1.3d(ii)	Analysis	Synoptic question on blood vessels, biological molecules and membranes, including data evaluation and analysis.	Reading from graph and complex calculation.
19	cii	6	3	1.1.1c, 1.1.3a, 1.1.3d, 1.1.4a, 1.1.4c, 5.1.4a	Evaluation	Synoptic question on blood vessels, biological molecules and membranes, including data evaluation and analysis.	Level of response evaluating a conclusion drawn from data. Synoptic with Analysis and Hormonal communication

Question Set	Q.	Total Marks	AO	Spec Ref.	Topic	Question Subject, If required	Additional Notes/Comments
20	ai	3	2	2.1.2m, 2.1.2n	Biological molecules	Describe and compare structures of conjugated proteins , including hydrophilic/hydrophobic interaction and calculation of the volume of sphere.	Explaining why an image shows a conjugated protein
20	aii	2	2	2.1.2n	Biological molecules	Describe and compare structures of conjugated proteins , including hydrophilic/hydrophobic interaction and calculation of the volume of sphere.	Comparing the structure of different protein molecules
20	aiii	2	2	2.1.2n	Biological molecules	Describe and compare structures of conjugated proteins , including hydrophilic/hydrophobic interaction and calculation of the volume of sphere.	Comparing the structure of different protein molecules
20	bi	3	2	1.1.3b, 2.1.2n	Analysis	Describe and compare structures of conjugated proteins , including hydrophilic/hydrophobic interaction and calculation of the volume of sphere.	Calculation. Synoptic with Biological molecules
20	bii	1	2	2.1.2m, 2.1.2n	Biological molecules	Describe and compare structures of conjugated proteins , including hydrophilic/hydrophobic interaction and calculation of the volume of sphere.	Applying globular protein knowledge to given example.
21	ai	2	2	5.1.4b	Hormonal communication	Synoptic question on adrenal gland, the function of its hormones, ECG traces and heart rate as an example of someone who is aerobically fit.	Structure and functions of adrenal gland
21	aii	1	1	5.1.4b	Hormonal communication	Synoptic question on adrenal gland, the function of its hormones, ECG traces and heart rate as an example of someone who is aerobically fit.	Structure and functions of adrenal gland

Question Set	Q.	Total Marks	AO	Spec Ref.	Topic	Question Subject, If required	Additional Notes/Comments
21	bi	2	2	3.1.2h, 5.1.4b	Transport in animals	Synoptic question on adrenal gland, the function of its hormones, ECG traces and heart rate as an example of someone who is aerobically fit.	Matching ECG trace to disease. Synoptic with hormonal communication.
21	bii	2	2	3.1.2h	Transport in animals	Synoptic question on adrenal gland, the function of its hormones, ECG traces and heart rate as an example of someone who is aerobically fit.	Sketching an ECG trace
21	biii	2	2	3.1.2f, 3.1.2g, 3.1.2h	Transport in animals	Synoptic question on adrenal gland, the function of its hormones, ECG traces and heart rate as an example of someone who is aerobically fit.	Applying knowledge of heart function to example of someone who is aerobically fit.
22	a	4	1	2.1.2i, 2.1.2l, 5.2.1e 5.2.1f	Photosynthesis	Synoptic question on photosynthesis and plant hormones, including experimental implementation, evaluation and data analysis.	Identifying molecules involved in photosynthesis reactions. Synoptic with Biological molecules
22	bi	3	3	1.1.1a, 1.1.1b, 1.1.2a, 5.2.1g	Planning	Synoptic question on photosynthesis and plant hormones, including experimental implementation, evaluation and data analysis.	Identifying variables for a practical method. Synoptic with Implementation and Photosynthesis
22	bii	1	3	1.1.1b, 1.1.2a, 5.2.1g(i), 5.2.1g(ii)	Planning	Synoptic question on photosynthesis and plant hormones, including experimental implementation, evaluation and data analysis.	Identifying variables for a practical method. Synoptic with Implementation and Photosynthesis
22	c	3	2	1.1.3a, 1.1.4a, 5.2.1g	Photosynthesis	Synoptic question on photosynthesis and plant hormones, including experimental implementation, evaluation and data analysis.	Analysing a graph of photosynthesis results. Synoptic with Analysis and Evaluation
22	di	2	2	5.2.1e	Photosynthesis	Synoptic question on photosynthesis and plant hormones, including experimental implementation, evaluation and data analysis.	Applying knowledge of light independent stage of photosynthesis.
22	dii	1	1	5.2.1e	Photosynthesis	Synoptic question on photosynthesis and plant hormones, including experimental implementation, evaluation and data analysis.	Naming an enzyme involved in photosynthesis

Question Set	Q.	Total Marks	AO	Spec Ref.	Topic	Question Subject, If required	Additional Notes/Comments
22	ei	1	1	1.1.4a, 5.1.5c	Plant and animal responses	Synoptic question on photosynthesis and plant hormones, including experimental implementation, evaluation and data analysis.	Explaining evidence about plant growth. Synoptic with Evaluation
22	eii	2	1	5.1.5f	Plant and animal responses	Synoptic question on photosynthesis and plant hormones, including experimental implementation, evaluation and data analysis.	Stating commercial uses of auxin.
23	1	1	1	2.1.1g	Cell structure		
23	2	1	1	2.1.6c, 2.1.6g	Cell division, cell diversity and cellular organisation		
23	3	1	1	2.1.2b, 2.1.2e, 2.1.3b	Biological molecules		Synoptic with Nucleotides and nucleic acids
23	4	1	1	2.1.2c, 2.1.2d, 2.1.2e, 2.1.2h, 2.1.2k, 2.1.2l, 2.1.3a, 2.1.3b	Biological molecules		Synoptic with Nucleotides and nucleic acids
23	5	1	1	2.1.3e	Nucleotides and nucleic acids		
23	6	1	2	2.1.4f, 1.1.3d(i)	Enzymes		Synoptic with Analysis
23	7	1	2	2.1.6m	Cell division, cell diversity and cellular organisation		
23	8	1	1	2.1.6h	Cell division, cell diversity and cellular organisation		
23	9	1	1	2.1.6k, 2.1.6j	Cell division, cell diversity and cellular organisation		
23	10	1	1	2.1.6l	Cell division, cell diversity and cellular organisation		
23	11	1	1	2.1.2o	Biological molecules		

Question Set	Q.	Total Marks	AO	Spec Ref.	Topic	Question Subject, If required	Additional Notes/Comments
24	1	1	2	3.1.3d, 1.1.3a, 1.1.3b	Transport in plants		Synoptic with Analysis. NB the scale of image may have changed when reproduced.
24	2	1	1	3.1.1f	Exchange surfaces		
24	3	1	1	3.1.3d	Transport in plants		
24	4	1	2	3.1.1a	Exchange surfaces		
24	5	1	2	3.1.3b(i), 3.1.3f	Transport in plants		
24	6	1	1	3.1.1b	Exchange surfaces		
24	7	1	1	3.1.3c(i)	Transport in plants		
24	8	1	1	3.1.2f	Transport in animals		
24	9	1	2	3.1.1c	Exchange surfaces		
24	10	1	2	3.1.2j	Transport in animals		
25	1	1	1	5.1.1d	Communication and homeostasis		
25	2	1	1	5.2.1d, 5.2.1e	Photosynthesis		
25	3	1	1	5.1.2e	Excretion as an example of homeostatic control		
25	4	1	2	5.2.1e	Photosynthesis		
25	5	1	1	5.1.2c(i), 5.1.2f	Excretion as an example of homeostatic control		
25	6	1	2	5.1.1b, 2.1.2a, 3.1.2b	Communication and homeostasis		Synoptic with Biological molecules
25	7	1	2	5.1.2a, 5.1.2b(i)	Excretion as an example of homeostatic control		
25	8	1	2	5.1.5a(i)	Plant and animal responses		
25	9	1	2	5.1.4c(i), 5.1.4d	Hormonal communication		
25	10	1	2	5.1.2a, 5.1.2c(i)	Excretion as an example of homeostatic control		
25	11	1	2	5.2.2g, 5.2.2h, 5.2.1d	Respiration		Synoptic with Photosynthesis



Question Set	Q.	Total Marks	AO	Spec Ref.	Topic	Question Subject, If required	Additional Notes/Comments
25	12	1	2	5.1.5h	Plant and animal responses		
25	13	1	1	5.1.3b	Neuronal communication		
25	14	1	2	5.1.3d	Neuronal communication		
25	15	1	2	5.1.5g, 5.1.5k	Plant and animal responses		
25	16	1	1	5.1.1b	Communication and homeostasis		
25	17	1	1	5.1.5a, 5.1.5c	Plant and animal responses		
25	18	1	1	5.1.5b	Plant and animal responses		
25	19	1	2	5.1.5a(i)	Plant and animal responses		
25	20	1	1	5.1.5f	Plant and animal responses		
25	21	1	1	5.1.3d	Neuronal communication		
25	22	1	1	5.1.2d	Excretion as an example of homeostatic control		
25	23	1	2	5.2.1g	Photosynthesis		
25	24	1	2	5.1.4b, 5.1.2d	Excretion as an example of homeostatic control		Synoptic with Hormonal communication