Unit Code J257/01
Qual Name GCSE Biology B (Twenty First Century Science)
Qual Title Breadth in biology (Foundation)
Tier Foundation

Question Set	Q. No	Total Marks	AO	Spec Ref.	Topic	Question Subject, If required	Additional Notes/Comments	Maths Skills	Practical Assessment Skills
1	1a	3	1	5.6.4a	Organs & Control Systems	This question is about how the structures of the eye are related to their functions.			
1	1bi	2	2	5.6.4	Organs & Control Systems	This question is about how the structures of the eye are related to their functions.		Y	Y
1	1bii	2	3	5.6.4	Organs & Control Systems	This question is about how the structures of the eye are related to their functions.			Y
1	1biii	1	3	5.6.4	Organs & Control Systems	This question is about how the structures of the eye are related to their functions.			Y
1	1biv	1	2	5.6.4	Organs & Control Systems	This question is about how the structures of the eye are related to their functions.			
1	1bv	1	1	5.2.3a	Nervous System	This question is about how the structures of the eye are related to their functions.			

1	1bvi	1	1	5.2.1	Nervous System	This question is about how the structures of the eye are related to their functions.			
1	1c	3	2	5.6.5	Organs & Control Systems	This question is about how the structures of the eye are related to their functions.			
2	1ai	1	1	1.1.7	The genome.	This question is about the structure of DNA			
2	1aii	1	1	1.1.7	The genome.	This question is about the structure of DNA			
2	1b	2	1	1.1.7	The genome.	This question is about the structure of DNA		Y	
3	1ai	1	2	1.2.1	Inheritance of genetic information	This question is about genotypes			
3	1aii	2	2	1.2.2, 1.2.3	Inheritance of genetic information	This question is about predicting the results of gene crosses.			

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3	1aiii	1	3	1.2.5	Inheritance of genetic information	This question is about predicting the results of gene crosses		Y	
3	1aiv	2	1	1.2.8	Inheritance of genetic information	This question is about sex determination.			
3	1av	2	1	5.5.3 2.3.1	Hormones in human reproduction	This question is about contraception.			
4	1a	4	1	2.1.2, 4.3.1a, 4.3.2	How organisms grow and develop.	This question is about cancer.	This question is synoptic.		
4	1b	2	2	4.3.2	How organisms grow and develop.	This question test maths skills: percentage calculation.		Y	
4	1c	1	2	4.3.2	How organisms grow and develop.	This question is about risk.			
4	1di	2	3	2.2.5	Protection against pathogens.	This question tests ability to describe data.			

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4	1dii	3	1	2.2.5	Protection against pathogens.	This question is about white blood cells.			
4	1diii	2	1	2.2.2, 5.1.6	Protection against pathogens.	This question is about the components of blood.			
4	1div	2	2	2.2.4, 3.1.3a	Protection against pathogens.	This question is about enzymes.			
4	1ei	2	3	2.6.4	How we treat disease.	This question is about drug trials.			
4	1eii	1	3	2.6.4	How we treat disease.	This question is about drug trials.			
4	1eiii	3	1	2.6.4	How we treat disease.	This question is about drug trials.			
5	1ai	2	1	4.5.1, 4.3.4	Stem cells.	This question is about stem cells and cell spcialisation.			

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5	1aii	1	1	2.4.2	Identifying the cause of infection.	This question is about aseptic techniques.			
5	1aiii	2	1	4.3.4	How organisms grow and develop.	This question is about stem cells.			
5	1aiv	2	1	4.5.1	Stem cells	This question is about peer review.			
5	1b	2	2	4.3.1a, 4.3.3	How organisms grow and develop.	This question is about cell division.			
6	1ai	2	2	6.1.6	Theory of evolution.	This question is about selective breeding.			
6	1aii	1	1	6.1.6	Theory of evolution.	This question is about selective breeding.			
6	1b	2	2	6.1.5, 6.1.6	Theory of evolution.	This question is about what defines a species.			

Question Set	Q.	Total Marks	AO	Spec Ref.	Topic	Question Subject, If required	Additional Notes/Comments	Maths Skills	Practical Assessment Skills
7	1ai	3	3	6.4.5	Threats to biodiversity.	This question tests the ability to describe and explain data.	This question relies on the graph to generate an answer.		
7	1aii	1	3	6.4.5	Threats to biodiversity.	This question tests the ability to draw a conclusion from data.	This question relies on the graph to generate an answer.		
7	1aiii	2	1	6.4.4	Threats to biodiversity.	This question is about the importance of biodiversity.			
7	1aiv	1	1	6.2.1	Sexual and asexual reproduction.	This question is about genetic variation.			
7	1bi	2	1 and 2	3.3.1b	Interdependence in ecosystems.	This question is about biochemical tests.			Y
7	1bii	1	1	3.3.1b	Interdependence in ecosystems.	This question is about biochemical tests.			Y
8	1ai	2	1	6.1.7, 6.18, 6.1.9, 1.2.7	Development fo the theory of evolution.	This question is about natural selection.	This is an overlap question.		

Question Set	Q.	Total Marks	AO	Spec Ref.	Topic	Question Subject, If required	Additional Notes/Comments	Maths Skills	Practical Assessment Skills
8	1aii	1	1	6.1.5	Development fo the theory of evolution.	This question is about natural selection.	This is an overlap question.		
8	1bi	1	1	3.1.2	What happens during photosynthesis?	This question is about plant organelles.	This is an overlap question.		
8	1bii	1	1	3.1.4a	What happens during photosynthesis?	This question is about photosynthesis.	This is an overlap question.		
8	1ci	2	2	3.3.5	Interdependence in ecosystems.	This question is about interdependence.	This is an overlap question.		
8	1cii	2	2	3.4.1	How conditions affect populations.	This question tests maths skills: using a scale bar.	The scale on this item may have changed which may alter the answer. This is an overlap question.	Y	
8	1ciii	1	2	3.4.1	How conditions affect populations.	This question tests maths skills: using percentages.	The scale on this item may have changed which may alter the answer. This is an overlap question.	Y	
8	1civ	2	3	3.4.1	How conditions affect populations.	This questions tests the ability to draw conclusions from data.	This is an overlap question.	Y	

Question Set	Q.	Total Marks	AO	Spec Ref.	Topic	Question Subject, If required	Additional Notes/Comments	Maths Skills	Practical Assessment Skills
9	1a	4	2	3.4.2	How conditions affect populations.	This question is about sampling techniques.	This is an overlap question.		Y
9	1b	2	2	5.4.4	Maintaining a constant internal environment.	This question is about water loss.	This is an overlap question.		
10	1a	1	1	B1.1.1b	What is the genome.	This question is about how to use a microscope.			Y
10	1b	1	1	B1.1.1b	What is the genome.	This question is about how to use a microscope.			Y
10	1c	1	1	B1.1.1b	What is the genome.	This question is about how to use a microscope.			Y
10	1d	1	1	B1.1.1a	What is the genome.	This question is about the parts of the cell.			
11	1a	2	1	B4.1.3, B4.1.1	Cellular respiration.	This question is about cellualar respiration.			

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11	1b	1	1	B 4.1.2, B4.1.4	Cellular respiration.	This question is about cellualar respiration.			
11	1c	3	1	B4.1.1	Cellular respiration.	This question is about aerobic respiration.			
11	1d	1	1	B4.2.1	Cellular respiration.	This question is about electron microscopes.			
12	1ai	1	2	B6.2.1	Asexual and sexual reproduction.	This question is about asexual reproduction.			
12	1aii	1	2	B6.2.1	Asexual and sexual reproduction.	This question is about asexual reproduction.			
12	1aiii	1	2	B6.2.1, B1.2.1, B1.2.2	Asexual and sexual reproduction.	This question is about sexual reproduction.			
12	1aiv	1	2	B6.2.1	Asexual and sexual reproduction.	This question is about asexual reproduction.			

Question Set	Q.	Total Marks	AO	Spec Ref.	Topic	Question Subject, If required	Additional Notes/Comments	Maths Skills	Practical Assessment Skills
12	1b	1	2	B4.3.5	Growth and development.	This question is about unspecialised cells.			
12	1c	2	1	B6.3.1	How is biodiversity threatened and how can we protect it?.	This question is about evidence used in classification.			
13	1ai	1	1	B3.3.1b	Independence in ecosystems.	This question is about biochemical tests.			Y
13	1aii	1	2	B6.1.6	How was the theory of evolution developed?	This question is about selective breeding.			
13	1b	1	3	B5.5.1	Hormones in human reproduction.	This question is about hormones involved in a cows oestous (menstrual) cycle.			
13	1ci	1	1	B5.5.1	Hormones in human reproduction.	This question tests maths skills: determination of range.	This question relies on the data in the table to generate an answer.	Y	
13	1cii	2	1	B5.5.1	Hormones in human reproduction.	This question tests maths skills: calculation of a mean.	This question relies on the data in the table to generate an answer.	Y	

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13	1d	1	1	B5.5.1	Hormones in human reproduction.	This question is about the menstrual cycle.			
14	1a	2	3	B3.3.5	Independence in ecosystems.	This question is about interdependence and population size.	This question relies on the food web to generate an answer.		
14	1bi	1	1	B3.4.1	Populations in ecosystems.	This question is about bioaccumulation.			
14	1bii	2	1	B3.3.9 B3.3.11	Independence in ecosystems.	This question is about decomposition.			
14	1biii	2	1	B3.3.13	Independence in ecosystems.	This question is about enzymes and decomposition.			
15	1a	2	1	B3.2.1, B3.2.2a, B5.1.2	How do producers get substances they need?	This question is about transport of substances into and out of cells.			
15	1bi	1	3	B3.1.4a B3.1.7a, b and d	Photosynthesis.	This question is about photosynthesis.	This question relies on the graph to generate an answer.		

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15	1bii	1	3	B3.1.4a B3.1.7a, b and d	Photosynthesis	This question is about photosynthesis and respiration.	This question relies on the graph to generate an answer.		
15	1biii	1	3	B3.1.4a B3.1.7a, b and d	Photosynthesis	This question is about photosynthesis and respiration.	This question relies on the graph to generate an answer.		
15	1c	3	2	B3.1.2	Photosynthesis	This question is about photosynthesis.			
16	1a	1	2	B4.3.3	How organisms grow and develop.	This question is about chromosome numbers in body cells.	This question relies on the figure to generate an answer.		
16	1b	1	2	B4.3.3	How organisms grow and develop.	This question is about meiosis.	This question relies on the figure to generate an answer.		
16	1c	4	2	B4.3.3	How organisms grow and develop.	This question is about chromosome numbers in cells produced by meiosis and as a result of fertilisation.	This question relies on the figure to generate an answer.		
16	1di	3	2	B3.1.3a	Photosynthesis.	This question is about enzymes.			

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16	1dii	2	2	B3.1.3a	Photosynthesis.	This question is about enzymes.			
17	1a	4	1	B3.3.10, B3.2.6a	Interdependence in ecosystems.	This question is about the water cycle.			
17	1b	2	2	B3.3.10, B3.2.6a	Interdependence in ecosystems.	This question is about the effect of deforestation on the water cycle.			
17	1ci	1	1	B6.4.1	How is biodiversity threatened?	This question is about biodiversity.			
17	1cii	1	1	B6.4.4	How is biodiversity threatened?	This question is about the importance of biodiversity.			
17	1d	2	3	B6.4.5	How is biodiversity threatened?	This question tests the ability to make a conclusion from data.		Y	
17	1ei	3	2	B3.4.3b	Populations in ecosystems.	This question tests maths skills: calculating a percentage.	This question relies on the data in the table to generate an answer.	Y	

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17	1eii	1	3	B3.4.2	Populations in ecosystems.	This question is about determining population numbers through sampling.			
18	1a	2	1	B1.3.2	Gene technology.	This question is about genetic engineering.			
18	1b	2	2	B5.6.3	Control systems.	This question is about the use of insulin to treat diabetes.			
18	1c	2	3	B1.3.4	Gene technology.	This questions is about using genetically engineered insulint to treat diabetics.			
18	1d	1	1	B1.1.6	The genome.	This question is about protein monomers.			
19	1a	3	1	B5.2.1, B5.2.3a	Nervous system and response to change.	This question is about reflex arcs.			
19	1b	1	1	B5.2.3.a	Nervous system and response to change	This question is about reflex arcs.			

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19	1ci	1	3	B5.2.3b	Nervous system and response to change	This question is about reflex actions.			Y
19	1cii	2	3	B5.2.3b	Nervous system and response to change	This question is about reflex actions.			Y
19	1ciii	1	3	B5.2.3b	Nervous system and response to change	This question is about reflex actions.			Y
19	1di	1	1	B5.2.2	Nervous system and response to change	This question tests maths skills: standard form.		Y	
19	1dii	1	1	B5.2.2	Nervous system and response to change	This question is about the structure of a neuron.			
20	1a	1	1	B2.1.3	Causes of disease.	This question tests an understanding of the symbol >.		Y	
20	1b	2	3	B2.1.3	Causes of disease.	This question tests the ability to mae conclusions from data.			

Question Set	Q.	Total Marks	AO	Spec Ref.	Topic	Question Subject, If required	Additional Notes/Comments	Maths Skills	Practical Assessment Skills
20	1c	1	2	B2.1.3	Causes of disease.	This question tests maths skills: percentage increase.		Y	
20	1di	2	2	B2.1.3	Causes of disease.	This question is about reducing disease transmission.			
20	1dii	1	2	B2.6.1	Treating disease.	This question is about assessing risk in relation to side effects of drugs.			
20	1diii	1	1	B2.1.4	Causes of disease.	This question is about diseases caused by bacteria.			
21	1a	2	1	5.2.1, 2.2.5, 5.1.6	Transport and communication around the body.	This question is about different specialised cells.	This question is synoptic, it requires knowledge of specialised cells taught in different units (white blood cells, red blood cells and nerve cells).		
21	1b	1	1	4.3.5	How organisms grow and develop.	This question is about stem cells and cell specialisation.			
21	1c	2	1	3.1.2, 4.1.3	Photosynthesis	This question is about photosynthesis and respiration and where they take place in the cell.	This question is synoptic.		

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22	1ai	2	2	1.2.1	Inheritance of genetic information.	This question is about genotypes.			
22	1aii	1	2	1.1.5	The genome.	This question is about genotypes.			
22	1aiii	3	2	1.2.5, 1.2.2, 1.2.3	Inheritance of genetic information.	This question is about predicting inheritance and calculating probability.		Y	
22	1b	1	1	1.1.5	The genome.	This question is about phenotypes.			
22	1ci	1	1	1.1.2	The genome.	This question is about the genome.			
22	1cii	1	1	1.1.1a	The genome.	This question is about where DNA is stored in animal cells.			
23	1a	1	3	2.4.3 , 2.6.2	Identifying the cause of infection.	This question is about determining the effectiveness of antibiotics.	This question relies on Fig 3.1 to answer the question.		Y

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23	1b	2	3	6.1.9	Theory of evolution.	This question is about antibiotic resistance.	This question relies on Fig 3.1 to answer the question.		
23	1c	3	2	6.1.2/3/5	Theory of evolution.	This question is about the process of natural selection.			
23	1d	1	1	6.1.8	Theory of evolution.	This question is about the development of the theory of natural selection.			
23	1e	3	2	6.1.7	Theory of evolution.	This question is about describing how fossils provide evidence for evolution.	This question relies on Fig 3.2 to answer the question.		
24	1ai	1	1	4.4.1a	Controlling plant growth	This question is about plant growth responses.	Requires stem of 1a		
24	1aii	1	1	4.4.1a	Controlling plant growth	This question is about plant growth responses.	Requires stem of 1a		
24	1aiii	1	1	4.4.1a	Controlling plant growth	This question is about plant growth responses.	Requires stem of 1a		

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24	1b	2	1	2.2.3, 2.2.6	Protecting against pathogens	This question is about plant defences against pathogens.			
24	1ci	1	1	4.1.1	Cellular respiration	This question is about anaerobic respiration.	The answer to this question leads candidates to the question that follows.		
24	1cii	2	1	3.2.1 3.2.4 , 4.1.1	How plants obtain substances	This question is on anaerobic respiration and how it reduces mineral uptake by plants.	This question has synoptic links. The answer to (c) (i) will help when anwering this question.		
25	1a	1	2	4.3.3	How organisms grow and develop.	This question is about the formation of gametes by meiosis.		Y	
25	1b	1	1	4.3.1a	How organisms grow and develop.	This question is about the role of mitosis in growth.			
25	1c	1	1	6.2.1	Sexual and asexual reproduction.	This question is about sexual reproduction.			
25	1d	2	2	1.2.8	Inheritance of genetic information.	This question is about sex determination.			

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26	1a	3	1	5.6.1	Organs and control systems.	This question is about how insulin controls blood sugar levels.			
26	1b	2	1	5.3.1	Hormones	This question is about the features of the endocrine system.			
26	1c	2	2	4.3.4	Growth and development of organisms.	This question is about the properties of stem cells.			
27	1ai	1	2	B2.5.3a	Factors affecting health.	This question tests ability to determine values from a graph.	This question relies on Fig 7.1 to generate an answer.	Y	
27	1aii	1	3	B2.5.3b	Factors affecting health.	This questions tests ability to draw a conclusion from data.	This question relies on Fig 7.1 to generate an answer.	Y	
27	1b	2	3	B2.5.1a	Factors affecting health.	This question is about lifestyle risks that increases the risk of cancer.	This question relies on table7.1.		
27	1c	2	1	4.3.2 2.1.2	Causes of disease.	This question is about the difference between communicable and non communicable diseases.	This question is synoptic, comparing the cause of cancer to causes of communicable diseases.		

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28	1ai	2	2	2.5.3b	Factors affecting health.	This question tests the skills required to complete a graph.	This question relies on Table 8.1.	Y	
28	1aii	2	3	2.5.3a	Factors affecting health.	This question tests ability to draw conclusions from data.	This question relies on Table 8.1 and the graph.	Y	
28	1aiii	1	3	2.3.2	Preventing the spread of infection.	This question tests ability to draw conclusions from data.	This question relies on Table 8.1 and the graph.	Y	
28	1b	1	1	2.3.2	Preventing the spread of infection.	This question is about how vaccines work.			
28	1c	3	2	2.3.1	Preventing the spread of infection.	This question is about the prevention of spread of communicable diseases.			
29	1a	5	1	3.2.4 3.1.2	How producers get substances they need.	This question is about the role of the root hair cell, xylem and phloem.			
29	1b	3	1	3.2.6b, 3.2.5b, 1.1.1b	How producers get substances they need.	This question is about using a microscope.	This question is synoptic.		Y

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29	1ci	1	2	3.2.6b	How producers get substances they need.	This question tests skills needed to collect data.			Y
29	1cii	1	2	3.2.6b	How producers get substances they need.	This question test maths skills, how to produce an estimation.	This questions relies on the answer to c (i) to generate an answer.		Y
29	1ciii	2	3	3.2.6b	How producers get substances they need.	This question is about representative samples.			Y
29	1civ	1	2	3.2.6b	How producers get substances they need.	This question is about the importance of representative samples.			Y
30	1a	2	2	5.1.3	Moving substances into, out of and around our bodies.	This question is about the human circulatory system	This question is an overlap question. This questions relies on Fig 10.1 to generate an answer.		
30	1b	4	1	5.1.4	Moving substances into, out of and around our bodies.	This question is about the structure of the heart.	This question is an overlap question.		
30	1c	1	2	5.1.4	Moving substances into, out of and around our bodies.	This question is about the structure of the heart.	This question is an overlap question. This question relies on Fig 10.2 and 10.3 to generate an answer.		

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30	1d	3	1	5.1.5	Moving substances into, out of and around our bodies.	This question is about the structure and function of arteries veins and capillaries	This question is an overlap question.		
31	1a	1	2	3.4.3d 3.4.2	Populations in ecosystems	This question is about estimating population size.	This question is an overlap question.		
31	1b	1	3	3.4.3d 6.4.5	Populations in ecosystems	This question is about factors that affect population size.	This question is an overlap question. This question is synoptic and relies on an understanding of interdependence to explain why biodiversity is threatened		
31	1c	2	3	3.3.5	Interdependence in ecosystems	This question is about factors that affect population size.	This question is an overlap question.		
31	1d	1	3	3.4.3d, 6.4.1	Populations in ecosystems	This question is about estimating population size.	This question is an overlap question. This question is synoptic and relies on an understanding of interdependence to explain why biodiversity is threatened		
31	1e	3	1 and 2	3.4.3d	Populations in ecosystems	This is a calculation to determine time taken using the speed equation.	This question is an overlap question	Y	