Unit Code: H420/03
Qual Name: A level Biology A
Qual Title: Biological diversity

Question Set	Q. No	Total Marks	AO	Spec Ref.	Topic	**Question Subject**, If required	Additional Notes/Comments
1	1ai	1	2	2.1.2k	Biological molecules	Synoptic question on the structure of amino acids and chloroplast, including chromatography and electorophoresis, with data analysis and implementation.	Amino acid structure
1	1aii	1	3	2.1.2sii, 1.1.3a, 1.1.4a	Biological molecules	Synoptic question on the structure of amino acids and chloroplast, including chromatography and electorophoresis, with data analysis and implementation.	Drawing a conclusion from chromatography trace. Synoptic with Analysis and Evaluation.
1	1aiii	3	2	2.1.2si, 1.1.3b, 1.1.3di	Biological molecules	Synoptic question on the structure of amino acids and chloroplast, including chromatography and electorophoresis, with data analysis and implementation.	Calculation of Rf. Synoptic with Analysis .
1	1bi	1	1	5.2.1cii, 1.1.2a	Biological molecules	Synoptic question on the structure of amino acids and chloroplast, including chromatography and electorophoresis, with data analysis and implementation.	Detail of thin layer chromatography practical. Synoptic with Implementation.
1	1bii	2	1	5.2.1b, 5.2.1ci	Photosynthesis	Synoptic question on the structure of amino acids and chloroplast, including chromatography and electorophoresis, with data analysis and implementation.	Describing structure of chloroplast
1	1c	3	2	6.1.3a, 5.2.1cii, 1.1.2a	Manipulating genomes	Synoptic question on the structure of amino acids and chloroplast, including chromatography and electorophoresis, with data analysis and implementation.	Comparing chromatography and electrophoresis. Synoptic with Photosynthesis and Implementation
2	1ai	2	2	2.1.2m	Biological molecules	Synoptic question on the structure of proteins and antibodies, including practical investigation on the factors affecting respiration of yeast cells with planning and data analysis (ie. Serial dilutions and statistical tests).	Applying knowledge of protein structure to examples
2	1aii	2	3	4.1.1h	Communicable diseases, disease prevention and the immune system	Synoptic question on the structure of proteins and antibodies, including practical investigation on the factors affecting respiration of yeast cells with planning and data analysis (ie. Serial dilutions and statistical tests).	Drawing conclusion from textual information about antibody structure.

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2	1bi	3	3	6.2.1gii, 5.2.2d, 5.2.2e, 5.2.2i(ii)	Respiration	Synoptic question on the structure of proteins and antibodies, including practical investigation on the factors affecting respiration of yeast cells with planning and data analysis (ie. Serial dilutions and statistical tests).	Drawing conclusions from graph of yeast respiration investigation. Synoptic with Cloning and biotechnology.
2	1bii	2	1	5.2.2i(ii), 6.2.1gi, 1.1.3b	Cloning and biotechnology	Synoptic question on the structure of proteins and antibodies, including practical investigation on the factors affecting respiration of yeast cells with planning and data analysis (ie. Serial dilutions and statistical tests).	Describing practical invetigation involving living yeast cells. Synoptic with Respiration.
2	1biii	2	2	6.2.1gi, 1.1.3b, 1.1.3c	Cloning and biotechnology	Synoptic question on the structure of proteins and antibodies, including practical investigation on the factors affecting respiration of yeast cells with planning and data analysis (ie. Serial dilutions and statistical tests).	Calculation involving serial dilution. Synoptic with Analysis and Respiration.
2	1biv	3	3	5.2.2i(ii), 1.1.1b, 1.1.1c, 1.1.4c, 1.1.4e	Evaluation	Synoptic question on the structure of proteins and antibodies, including practical investigation on the factors affecting respiration of yeast cells with planning and data analysis (ie. Serial dilutions and statistical tests).	Evaluation of method to investigate effect of temperature on yeast respiration. Synoptic with Planning and Respiration.
2	1bv	1	3	5.2.2l, 1.1.3a	Analysis	Synoptic question on the structure of proteins and antibodies, including practical investigation on the factors affecting respiration of yeast cells with planning and data analysis (ie. Serial dilutions and statistical tests).	Interpreting statistical test. Synoptic with Respiration.
3	1ai	1	2	4.2.2g	Classification and evolution	This question is about the 3 types of adaptation, evolution by natural selection and the use of Hardy-Weinberg equation.	Identifying types of adaptation
3	1aii	6	2	4.2.2h, 6.1.1a, 6.1.1b, 6.1.2d, 2.1.3f, 2.1.3g	Classification and evolution	This question is about the 3 types of adaptation, evolution by natural selection and the use of Hardy-Weinberg equation.	LoR applying knowledge of natural selection to example of tiger stripes. Synoptic with Patterns of inheritance, Cellular control and Nucleotides and nucleic acids.
3	1b	3	2	6.1.2f	Patterns of inheritance	This question is about the 3 types of adaptation, evolution by natural selection and the use of Hardy-Weinberg equation.	Calculation using Hardy-Weinberg principle

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4	1a	4	1	6.3.1c	Ecosystems	Synoptic question on the haemoglobin and ecosystems, including nitrogen cycle, action of the enzymes in an unkown context and calculation of the efficiency of energy transfer between trophic levels.	Role of microorganisms in the nitrogen cycle
4	1bi	4	3	2.1.4c, 2.1.4di, 2.1.4e, 2.1.4f	Enzymes	Synoptic question on the haemoglobin and ecosystems, including nitrogen cycle, action of the enzymes in an unkown context and calculation of the efficiency of energy transfer between trophic levels.	Drawing conclusions from information about the action of an enzyme
4	1bii	2	3	6.3.1c, 3.1.2i	Transport in animals	Synoptic question on the haemoglobin and ecosystems, including nitrogen cycle, action of the enzymes in an unkown context and calculation of the efficiency of energy transfer between trophic levels.	Applying knowledge of haemoglobin to unfamilar example. Synoptic with Ecosystems.
4	1ci	2	2	6.3.1b	Ecosystems	Synoptic question on the haemoglobin and ecosystems, including nitrogen cycle, action of the enzymes in an unkown context and calculation of the efficiency of energy transfer between trophic levels.	Calculation of energy in a trophic level
4	1cii	1	2	6.3.1b	Ecosystems	Synoptic question on the haemoglobin and ecosystems, including nitrogen cycle, action of the enzymes in an unkown context and calculation of the efficiency of energy transfer between trophic levels.	Calculation of efficiency of energy transfer. Needs the answer to part (i) to be able to answer part (ii).
5	1ai	2	2	4.1.1h, 4.1.1k	Communicable diseases, disease prevention and the immune system	This question is about automimmune diseases, saltatory conduction and synaptic transmission of impulses.	Applying knowledge of autoimmune disease
5	1aii	2	3	5.1.3b, 5.1.3c	Neuronal communication	This question is about automimmune diseases, saltatory conduction and synaptic transmission of impulses.	Drawing a conclusion from images of neurone damage.
5	1bi	2	2	5.1.5g, 5.1.5 h	Plant and animal responses	This question is about automimmune diseases, saltatory conduction and synaptic transmission of impulses.	Applying knowledge of nervous system organization
5	1bii	2	2	5.1.5li	Plant and animal responses	This question is about automimmune diseases, saltatory conduction and synaptic transmission of impulses.	Applying knowledge of synaptic trasnsmission
6	1	6	3	5.1.5k, 1.1.1b, 1.1.1c, 1.1.3c, 1.1.4c, 1.1.4e	Evaluation	Level of response question suggesting and explaining improvements to experimental method and presentation of results on animal responses, including analysis and planning.	LoR suggesting and explaining improvements to experimental method and presentation of results. Synoptic with Planning, Analysis and Plant and animal responses

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7	1ai	2	1	3.1.1b, 3.1.1f	Exchange surfaces	This question is about the gas exchange system of different organisms and ventilation in mammals.	Describing adaptations of insect and fish breathing systems
7	1aii	1	2	3.1.1a	Exchange surfaces	This question is about the gas exchange system of different organisms and ventilation in mammals.	Applying knowledge of gas exchange surfaces to given example.
7	1b	4	1	3.1.1c, 3.1.1d, 5.1.5j	Exchange surfaces	This question is about the gas exchange system of different organisms and ventilation in mammals.	Gap fill about mammalian ventilation. Synoptic with Plant and animal responses.
8	1a	2		2.1.1g, 2.1.1k	Cell structure	This question is on the plant cells and tissues, dihybrid genetic cross and epistasis.	Tick box to describe structure of onion cells
8	1b	2	1	3.1.3bi, 3.1.3bii, 1.1.3a	Transport in plants	This question is on the plant cells and tissues, dihybrid genetic cross and epistasis.	Identifying plant tissues from photomicrograph. Synoptic with Analysis.
8	1ci	3	2	6.1.2bi	Patterns of inheritance	This question is on the plant cells and tissues, dihybrid genetic cross and epistasis.	Applying knowledge of the terms genotype and phenotype. Synoptic with Evaluation and Biodiversity.
8	1cii	1	2	6.1.2bii	Patterns of inheritance	This question is on the plant cells and tissues, dihybrid genetic cross and epistasis.	Applying knowledge of epistasis
8	1ciii	2	2	6.1.1b	Cellular control	This question is on the plant cells and tissues, dihybrid genetic cross and epistasis.	Applying knowledge of epistasis
9	1a	4	1	5.2.2c, 5.2.2e	Respiration	This question is about the stages of respiration (ie. Krebs cycle, substrate level phosphorylation, link reaction) and biochemical tests with reference to phloem and liver tissue.	Describing substrate level phosphorylation
9	1b	3	3	1.1.3a, 1.1.4a, 2.1.2q, 3.1.3f, 5.1.2bi	Biological molecules	This question is about the stages of respiration (ie. Krebs cycle, substrate level phosphorylation, link reaction) and biochemical tests with reference to phloem and liver tissue.	Drawing conclusions from biochemical test results . Synoptic with Analysis, Evaluation, Transport in plants and Excretion as an example of homeostatic control
9	1ci	1	2	1.1.3b, 5.2.2d	Respiration	This question is about the stages of respiration (ie. Krebs cycle, substrate level phosphorylation, link reaction) and biochemical tests with reference to phloem and liver tissue.	Calculation based on molecular structure. Synoptic with Analysis.
9	1cii	1	2	1.1.3b, 5.2.2d	Respiration	This question is about the stages of respiration (ie. Krebs cycle, substrate level phosphorylation, link reaction) and biochemical tests with reference to phloem and liver tissue.	Application of calculation to biochemical pathway. Synoptic with Analysis.

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9	1ciii	1	2	5.2.2f	Respiration	This question is about the stages of respiration (ie. Krebs cycle, substrate level phosphorylation, link reaction) and biochemical tests with reference to phloem and liver tissue.	Application of knowledge of role of coenzymes in respiration
10	1ai	2	3	5.2.1gii, 1.1.4b	Evaluation	This question is about cloning plants by tissue culture, photosynthesis and the factors affecting the rate of photosynthesis using experimental evaluation and implementation.	Treatment of anomalous result in photosynthesis investigation. Synoptic with Photosynthesis
10	1aii	6	3	1.1.2c, 1.1.4c, 1.1.4e, 5.2.1gii	Evaluation	This question is about cloning plants by tissue culture, photosynthesis and the factors affecting the rate of photosynthesis using experimental evaluation and implementation.	Level of response describing improvements to expermental method and presentation of data in photosynthesis investigation. Synoptic with Photosynthesis
10	1b	2	2	5.2.1d, 5.2.1e	Photosynthesis	This question is about cloning plants by tissue culture, photosynthesis and the factors affecting the rate of photosynthesis using experimental evaluation and implementation.	Applying knowledge of stages of photosynthesis. Synoptic with Evaluation and Implementation
10	1c	4	1	1.1.2a, 6.2.1aii, 6.2.1bi	Cloning and biotechnology	This question is about cloning plants by tissue culture, photosynthesis and the factors affecting the rate of photosynthesis using experimental evaluation and implementation.	Gap fill about cloning plants by tissue culture. Synoptic with Implementation.
11	1ai	2	2	4.1.1f	Communicable diseases, disease prevention and the immune system	This question refers to the function of B - lymphocytes, interpretation of pedigree diagrams, monohybrid crosses, PCR process and gel electrophoresis, including implementation and data analysis (ie. log and ratio calculations)	Application of knowledge about white blood cells
11	1aii	4	3	6.1.2bi, 6.1.2bii	Patterns of inheritance	This question refers to the function of B - lymphocytes, interpretation of pedigree diagrams, monohybrid crosses, PCR process and gel electrophoresis, including implementation and data analysis (ie. log and ratio calculations)	Drawing conclusions from inheritance diagram
11	1bi	1	2	1.1.3b, 6.1.2bi	Patterns of inheritance	This question refers to the function of B - lymphocytes, interpretation of pedigree diagrams, monohybrid crosses, PCR process and gel electrophoresis, including implementation and data analysis (ie. log and ratio calculations)	Calculating ratios from monohybrid cross. Synpotic with Analysis

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11	1bii	1	2	1.1.3b, 6.1.2bi	Patterns of inheritance	This question refers to the function of B - lymphocytes, interpretation of pedigree diagrams, monohybrid crosses, PCR process and gel electrophoresis, including implementation and data analysis (ie. log and ratio calculations)	Calculating ratios from monohybrid cross. Synoptic with Analysis.
11	1ci	1	2	1.1.2a, 2.1.3dii	Nucleotides and nucleic acids	This question refers to the function of B - lymphocytes, interpretation of pedigree diagrams, monohybrid crosses, PCR process and gel electrophoresis, including implementation and data analysis (ie. log and ratio calculations)	Role of enzymes in DNA extraction. Synoptic with Implementation
11	1cii	2	2	6.1.3d	Manipulating genomes	This question refers to the function of B - lymphocytes, interpretation of pedigree diagrams, monohybrid crosses, PCR process and gel electrophoresis, including implementation and data analysis (ie. log and ratio calculations)	Calcuation based on knowledge of PCR
11	1ciii	1	2	6.1.3d	Manipulating genomes	This question refers to the function of B - lymphocytes, interpretation of pedigree diagrams, monohybrid crosses, PCR process and gel electrophoresis, including implementation and data analysis (ie. log and ratio calculations)	Process of PCR.
11	1civ	1	1	6.1.3d	Manipulating genomes	This question refers to the function of B - lymphocytes, interpretation of pedigree diagrams, monohybrid crosses, PCR process and gel electrophoresis, including implementation and data analysis (ie. log and ratio calculations)	Process of PCR. Synoptic with Classification and evolution
11	1cv	2	3	1.1.1c, 1.1.4c, 1.1.4e, 6.1.3c, 6.1.3e	Manipulating genomes	This question refers to the function of B - lymphocytes, interpretation of pedigree diagrams, monohybrid crosses, PCR process and gel electrophoresis, including implementation and data analysis (ie. log and ratio calculations)	Suggesting improvements to electrophoresis method. Synoptic with Planning and Evaluation.
12	1ai	1	2	4.2.2b	Classification and evolution	This question is about classification, use of Simpson's Index of Diversity, ecological succession and primary production, including planning, analysis and implementation.	Linking binomial to classification

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12	1aii	2	2	4.2.2ci, 4.2.2cii	Classification and evolution	This question is about classification, use of Simpson's Index of Diversity, ecological succession and primary production, including planning, analysis and implementation.	Applying knowledge of classificatoin to given example. Synoptic with Manipulating genomes.
12	1b	2	2	1.1.3a, 1.1.3b, 4.2.1d	Biodiversity	This question is about classification, use of Simpson's Index of Diversity, ecological succession and primary production, including planning, analysis and implementation.	Calculating and interpreting Simpson's Index of Diversity. Synoptic with Analysis.
12	1ci	1	1	6.3.1d	Ecosystems	This question is about classification, use of Simpson's Index of Diversity, ecological succession and primary production, including planning, analysis and implementation.	Using correct ecology key term
12	1cii	3	3	1.1.1a, 1.1.2a, 4.2.1bi, 4.2.1bii, 6.3.1ei, 6.3.1eii	Biodiversity	This question is about classification, use of Simpson's Index of Diversity, ecological succession and primary production, including planning, analysis and implementation.	Designing a practical sampling method. Synoptic with Planning, Implementation and Ecosystems.
12	1ciii	1	2	6.3.1b, 1.1.2b	Ecosystems	This question is about classification, use of Simpson's Index of Diversity, ecological succession and primary production, including planning, analysis and implementation.	Suggesting appropriate units for primary productivity. Synoptic with Implementation.
13	1a	6	2	3.1.2d, 5.1.2ci	Excretion as an example of homeostatic control	This question is about ultrafiltration in the kidneys compared with the formation of the tissue fluid and kidney failure.	Level of response comparing ultrafiltration with tissue fluid formation. Synoptic with Transport in animals.
13	1bi	4	3	5.1.2e, 1.1.1b	Excretion as an example of homeostatic control	This question is about ultrafiltration in the kidneys compared with the formation of the tissue fluid and kidney failure.	Identifying variable that affect kidney function. Synoptic with Planning
13	1bii	1	2	5.1.2ci, 5.1.2e, 5.1.2f	Excretion as an example of homeostatic control	This question is about ultrafiltration in the kidneys compared with the formation of the tissue fluid and kidney failure.	Applying knowledge of kidney function to example
14	1ai	2	1	2.1.1g, 2.1.1h, 1.1.3a	Cell structure	This is a synoptic question on eukaryotic cells, preparation of slides, scientific drawing skills, calculation for magnification and plant adaptations, including planning and implementation.	Identifying cellular components from photomicrograph

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14	1aii	2	2	2.1.1e, 1.1.3b, 1.1.3c	Cell structure	This is a synoptic question on eukaryotic cells, preparation of slides, scientific drawing skills, calculation for magnification and plant adaptations, including planning and implementation.	Scaling calculation. Synoptic with Analysis. C-D line on Fig 1.1 needs to be 20mm long or mark scheme will need adjusting.
14	1aiii	2	3	2.1.1d, 1.1.2c	Implementation	This is a synoptic question on eukaryotic cells, preparation of slides, scientific drawing skills, calculation for magnification and plant adaptations, including planning and implementation.	Suggesting improvements to practical drawing technique. Synoptic with Cell structure
14	1aiv	2	3	2.1.1c, 1.1.1c, 1.1.2a	Cell structure	This is a synoptic question on eukaryotic cells, preparation of slides, scientific drawing skills, calculation for magnification and plant adaptations, including planning and implementation.	Suggesting improvements to practical procedure. Synoptic with Planning and Implementation
14	1b	3	2	3.1.3e, 4.2.2g	Plant transport	This is a synoptic question on eukaryotic cells, preparation of slides, scientific drawing skills, calculation for magnification and plant adaptations, including planning and implementation.	Explaining named plant adaptations. Synoptic with Classification and evolution.
15	1ai	2	2	5.1.1d	Communication and homeostasis	Synoptic question about thermoregulation in unfamiliar context, sensory receptors, function of the brain and respiration (ie. glycolysis), including evaluation and data analysis (ie. interpret graphs)	Applying thermoregulatino knowledge to unfamiliar example
15	1aii	4	2	5.1.1c, 5.1.1d	Communication and homeostasis	Synoptic question about thermoregulation in unfamiliar context, sensory receptors, function of the brain and respiration (ie. glycolysis), including evaluation and data analysis (ie. interpret graphs)	Applying thermoregulatino knowledge to unfamiliar example
15	1aiii	2	1	5.1.3a, 5.1.1d, 5.1.5h	Communication and homeostasis	Synoptic question about thermoregulation in unfamiliar context, sensory receptors, function of the brain and respiration (ie. glycolysis), including evaluation and data analysis (ie. interpret graphs)	Control of body temperature. Synoptic with neuronal communication and Plant and animal responses
15	1bi	2	3	5.1.3a	Neuronal communication	Synoptic question about thermoregulation in unfamiliar context, sensory receptors, function of the brain and respiration (ie. glycolysis), including evaluation and data analysis (ie. interpret graphs)	Drawing conclusions about sensory receptor mechanism from information

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15	1bii	1	2	5.1.3a	Neuronal communication	Synoptic question about thermoregulation in unfamiliar context, sensory receptors, function of the brain and respiration (ie. glycolysis), including evaluation and data analysis (ie. interpret graphs)	Applying knowledge of receptors to example
15	1ci	1	2	1.1.3a, 1.1.4a	Analysis	Synoptic question about thermoregulation in unfamiliar context, sensory receptors, function of the brain and respiration (ie. glycolysis), including evaluation and data analysis (ie. interpret graphs)	Describing a graph. Synoptic with Evaluation
15	1cii	1	3	1.1.3a, 1.1.4a	Evaluation	Synoptic question about thermoregulation in unfamiliar context, sensory receptors, function of the brain and respiration (ie. glycolysis), including evaluation and data analysis (ie. interpret graphs)	Drawing a conclusion from a graph. Synoptic with Analysis
15	1di	2	2	5.2.2c, 5.2.2i(i)	Respiration	Synoptic question about thermoregulation in unfamiliar context, sensory receptors, function of the brain and respiration (ie. glycolysis), including evaluation and data analysis (ie. interpret graphs)	Applying knowledge of respiration to example
15	1dii	1	2	5.1.1d, 5.2.2a	Communication and homeostasis	Synoptic question about thermoregulation in unfamiliar context, sensory receptors, function of the brain and respiration (ie. glycolysis), including evaluation and data analysis (ie. interpret graphs)	Applying knowledge of thermoregulation to example. Synoptic with Respiration
16	1a	1	2	4.2.2g	Classification and evolution	This question is about the 3 types of adaptation and enzymes, including planning, evaluation and data analysis (ie. statistical test)	Identifying type of adaptation
16	1b	2	3	2.1.4a, 2.1.4e	Enzymes	This question is about the 3 types of adaptation and enzymes, including planning, evaluation and data analysis (ie. statistical test)	Drawing conclusions about enzyme action from information
16	1ci	4	3	2.1.4d(ii), 1.1.1b, 1.1.1c, 1.1.4e	Evaluation	This question is about the 3 types of adaptation and enzymes, including planning, evaluation and data analysis (ie. statistical test)	Suggesting improvements to enzyme investigation. Synoptic with Planning and Enzymes
16	1cii	1	2	1.1.2b, 2.1.4d(ii)	Implementation	This question is about the 3 types of adaptation and enzymes, including planning, evaluation and data analysis (ie. statistical test)	Suggest appropriate usints for measurement of enzyme activity. Synoptic with Enzymes

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16	1ciii	2	3	2.1.4dii, 1.1.3a, 1.1.3b, 1.1.4a	Analysis	This question is about the 3 types of adaptation and enzymes, including planning, evaluation and data analysis (ie. statistical test)	Evaluating use of mean. Synoptic with Evaluation and Enzymes
16	1civ	2	3	1.1.3b	Analysis	This question is about the 3 types of adaptation and enzymes, including planning, evaluation and data analysis (ie. statistical test)	Selecting appropriate statistical test. Synoptic with Analysis
17	1a	1	2	4.2.2g	Classification and evolution	This question is about the 3 types of adaptation and enzymes, including planning, evaluation and data analysis (ie. statistical test)	Identifying type of adaptation
17	1b	2	3	2.1.4a, 2.1.4e	Enzymes	This question is about the 3 types of adaptation and enzymes, including planning, evaluation and data analysis (ie. statistical test)	Drawing conclusions about enzyme action from information
17	1ci	4	3	2.1.4d(ii), 1.1.1b, 1.1.1c, 1.1.4e	Evaluation	This question is about the 3 types of adaptation and enzymes, including planning, evaluation and data analysis (ie. statistical test)	Suggesting improvements to enzyme investigation. Synoptic with Planning and Enzymes
17	1cii	1	2	1.1.2b, 2.1.4d(ii)	Implementation	This question is about the 3 types of adaptation and enzymes, including planning, evaluation and data analysis (ie. statistical test)	Suggest appropriate usints for measurement of enzyme activity. Synoptic with Enzymes
17	1ciii	2	3	2.1.4dii, 1.1.3a, 1.1.3b, 1.1.4a	Analysis	This question is about the 3 types of adaptation and enzymes, including planning, evaluation and data analysis (ie. statistical test)	Evaluating use of mean. Synoptic with Evaluation and Enzymes
17	1civ	2	3	1.1.3b	Analysis	This question is about the 3 types of adaptation and enzymes, including planning, evaluation and data analysis (ie. statistical test)	Selecting appropriate statistical test. Synoptic with Analysis
18	1a	2	3	1.1.3d, 4.1.1g	Communicable diseases, disease prevention and the immune system	Synoptic question on the effects of genes and environment on immune response, antibodies and data analysis.	Explaining data about immune response
18	1b	6	2	2.1.3f, 6.1.2a(i), 4.1.1h	Communicable diseases, disease prevention and the immune system	Synoptic question on the effects of genes and environment on immune response, antibodies and data analysis.	Level of response about effects of genes and environment on immune response. Synoptic with Patterns if Inheritance and Nucleotides and nucleic acids
18	1c	2	3	4.1.1h	Communicable diseases, disease prevention and the immune system	Synoptic question on the effects of genes and environment on immune response, antibodies and data analysis.	Drawing conclusions about role of antibodies from evidence

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19	1a	2	2	1.1.3a, 3.1.2a	Analysis	Synoptic question on calculation of diffusion distance with planning, evaluation and analysing experimental data in an unknown context (ie. use of pesticides and cannibalism of beet armyworm larvae)	Calculation of diffusion distance from volume of organism. Synoptic with Transport in animals
19	1bi	2	3	5.1.5ai, 1.1.1a, 1.1.1c, 1.1.3d, 1.1.4c	Evaluation	Synoptic question on calculation of diffusion distance with planning, evaluation and analysing experimental data in an unknown context (ie. use of pesticides and cannibalism of beet armyworm larvae)	Suggesting evidence to support a conclusion. Synoptic with Planning, Analysis and Plant and animal responses
19	1bii	1	3	5.1.1a, 5.1.5b, 1.1.3a, 1.1.4a	Evaluation	Synoptic question on calculation of diffusion distance with planning, evaluation and analysing experimental data in an unknown context (ie. use of pesticides and cannibalism of beet armyworm larvae)	Concluding from data in bar chart. Synoptic with Planning, Analysis, Communicatoin and homeostasis and Plant and animal responses
19	1biii	1	3	5.1.1a, 5.1.5b, 1.1.3a, 1.1.4a	Evaluation	Synoptic question on calculation of diffusion distance with planning, evaluation and analysing experimental data in an unknown context (ie. use of pesticides and cannibalism of beet armyworm larvae)	Concluding from data in bar chart. Synoptic with Planning, Analysis, Communicatoin and homeostasis and Plant and animal responses