

2017 HKDSE

Biology and Combined Science (Biology)

Exam Analysis



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1 Coverage

a Most topics in the curriculum are covered. More marks are allocated to the chapters (3rd edition) below:

Ch 2 The cell as the basic unit of life (8 marks; [CS 7 marks](#))

Ch 8 Transport in humans (12 marks; [CS 11 marks](#))

Ch 19 Ecosystems (15 marks; [CS 13 marks](#))*

~~**Ch 20**~~ Photosynthesis (10 marks)*

~~**Ch 24**~~ Body defence mechanisms (9 marks)

Ch 25 Basic genetics (14 marks; [CS 14 marks](#))*

[* Also hot topics in 2016 HKDSE papers]

b Relationship between Biology and Combined Science:

i In Combined Science Section A, all the multiple-choice questions are common with Biology Paper 1A.

ii In Combined Science Section B, Q1, 2, 4, 5 and 7 are common with Biology Paper 1B. Q3 and 6 are slightly different from Q4 and 6 in Biology Paper 1B respectively.

2 Level of difficulty

a The multiple-choice questions in 2017 HKDSE papers are in general easier than those in 2016 HKDSE papers. In Biology Paper 1A, Q4, 11, 12, 13, 14, 18 and 21 ([CS A Q4, 7 and 8](#)) are more challenging and may be set to differentiate students of different abilities.

b The conventional questions in 2017 HKDSE papers are in general easier than those in 2016 HKDSE papers. In Biology Paper 1B, Q4b, 5b, 6b, 8d, 10b and 10d ([CS B Q2b, 3b, 4d, 5b, 5d and 6b](#)) are more challenging and may be set to differentiate students of different abilities.

c In Biology Paper 2, Q2a, 2b, 4a and 4b are comparatively more difficult.

3 Skills or abilities assessed

The papers assess different types of skills and abilities. They are shown in the table below.

	Biology Paper 1A (CS Section A)	Biology Paper 1B (CS Section B)
a Skills related to SBA		
i Making observations	Q16, 21 and 23 (Q10 and 15)	Q4 (Q3)
ii Designing experiments <ul style="list-style-type: none"> • Designing fair tests • Setting up controls • Making assumptions • Ensuring reliability of results and validity of conclusions 	- Q4 (Q4) - Q14 (Q8)	Q7b and 10c i (Q5c i) - Q7a -
iii Interpreting data or graphs	Q12 and 24 (Q7)	Q8, 9b, 9c, 9d i, 10a ii, 10b and 10c (Q4, 5a ii, 5b and 5c)
iv Interpreting photomicrographs or electron micrographs	Q21 and 23 (Q15): Embryos in different stages of development	Q4 (Q3): Pancreatic cell
v Drawing conclusions	Q8 (Q6)	Q10a ii, 10b and 10c ii (Q5a ii, 5b and 5c ii)
b Understanding of the nature of science (NOS)	-	Q6b and 10d (Q5d and 6b): Total 7 marks
c Applying knowledge in unfamiliar situations	-	Q8 (Q4)
d Communication	-	Q3b, 4c, 5a, 7c, 9b and 11 (Q2a, 3c and 7)

4 Challenging questions

Some questions in the papers are challenging. The table below lists the difficulties students may encounter when answering these questions. Suggestions for developing the necessary skills and abilities to address similar questions are also listed below.

Question	Difficulty	Suggestion
Biology Paper 1A Q4 (CS A Q4) - An investigation of the action of a starch-digesting enzyme	Students may not know the purposes of setting up different test tubes. They may not be able to choose the correct answer.	Students should expose to a wider range of experiments and try to explain the purposes of different experimental and control set-ups.
Biology Paper 1B Q6b (CS B Q6b) - Contribution of technology advancements to the development of different classification systems Biology Paper 1B Q10d ii (CS B Q5d ii) - Development of knowledge about the inheritance of the tongue rolling trait	Students often find answering questions set on NOS difficult. They may not be able to apply what they have learnt to address the questions. They may also have difficulty in explaining how the historical events can demonstrate certain aspects of NOS.	Students can promote the understanding of NOS through reviewing the history of biology and discussing biological concepts.

Question	Difficulty	Suggestion
Biology Paper 1B Q8d (CS B Q4d) - Impact of global warming and foreign species on the native plant community	Students may not be able to integrate the information provided in different parts of the questions to make deduction.	Students should practise more to develop skills for answering this type of questions.
Biology Paper 2 Q2a iii - Comparison of the biomass at sites within and outside a marine protected area	Students may have difficulty in identifying the limitations of the study. They may not be able to suggest the measurements that should be taken to increase the validity of the study.	Students should expose to a wider range of experiments and discuss the reliability of the results and the validity of the conclusions with reference to the limitations of the experiments.
Biology Paper 2 Q2b iii - Effect of increased seawater temperature on the health of corals	Students are usually weak in comparing data presented in graphs. It may be difficult for them to relate the study to real-life problem.	Strengthen the training on how to compare data and the language used in comparison. Students should expose to more different experiments so that they are more familiar with comparing results.
Biology Paper 2 Q4b - Insertion of a gene of interest into a plasmid and selection of transformed bacteria	Students may have difficulty in applying what they have learnt to work out this method of selection of transformed bacteria.	Students should read questions carefully to understand the situation. They should also expose to a wider variety of questions set on unfamiliar situations may help them to develop the required skills.

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