

2015 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 below:

Ch 3 Movement of substances across cell membrane

Ch 8 Transport in humans

Ch 10 Transpiration, transport and support in plants

~~**Ch 17**~~ Movement in humans

Ch 20 Ecosystems

Ch 26 Basic genetics

b Q6d in Biology Paper 1B (Q5d in Combined Science Section B) is set on nature of science (NOS). This question carries 2 marks.

c Q3b(iii) in Biology Paper 2 asked about pollution indicating organisms. This topic is deleted from the curriculum in EDB's Supplementary Document 2013 (which affects students taking the 2016 HKDSE examination).

d Relationship between Biology and Combined Science:

i In Combined Science Section A, Q22 appears only in this subject. Q4 is slightly different from Q5 in Biology Paper 1A and simplified. The other multiple-choice questions are common with Biology Paper 1A.

ii In Combined Science Section B, Q2b and Q4 are slightly different from those questions in Biology Paper 1B. The other conventional questions are common with Biology Paper 1B.

2 Level of difficulty

a The multiple-choice questions in 2015 HKDSE papers are easier than those in 2014 HKDSE papers. Q12, 15, 18, 22 and 32 in Biology Paper 1A (Q12, 14 and 15 in Combined Science Section A) are more challenging and may be set to differentiate students of different abilities.

b The conventional questions in 2015 and 2014 HKDSE papers are of similar level of difficulty. Q2c, 3d, 4c, 6d and 7c and 11 in Biology Paper 1B (Q2c, 3d, 5d and 6c in Combined Science Section B) are more challenging and may be set to differentiate students of different abilities.

c In Biology Paper 2, Q2a, Q2b, Q3b are comparatively more difficult.

3 Skills assessed

- a** The papers follow the trend of inclusion of questions related to school-based assessment (SBA) and a number of conventional questions in Section B require the skills for making scientific inquiries.

Making observations: Q2b, 9a and 9c in Biology; Q2b and 8a in Combined Science

Designing an experiment: Q7b and 7c in Biology; Q6b and 6c in Combined Science

Analysing data: Q6b in Biology; Q5b in Combined Science

- b** Photomicrographs of cells at different stages of the cell cycle and neuromuscular junctions (Q2 and 5 in Biology Paper 1B; Q2 in Combined Science Section B) are examined.
- c** Q3c, 4c, 5c and 11 in Biology Paper 1B (Q3c, 4c and 11 in Combined Science Section B) require good communication skills.

4 Exam trend

Compulsory part

= equivalent

~ similar to

Chapter	2012	2013	2014	2015
Ch 1 Introducing biology				
Ch 2 The cell as the basic unit of life		MC BIO IA Q3 = CS A Q3	MC BIO IA Q3 ~ CS A Q1 MC BIO IA Q5 ~ CS A Q2	MC BIO IA Q1 = CS A Q1
Ch 3 Movement of substances across cell membrane		MC BIO IA Q5 = CS A Q5 MC BIO IA Q23 = CS A Q9 MC BIO IA Q24 = CS A Q10 MC BIO IA Q25 = CS A Q11	BIO IB Q7 = CS B Q6	MC BIO IA Q2 = CS A Q2 BIO IB Q6 = CS B Q5
Ch 4 Enzymes and metabolism		MC BIO IA Q6 = CS A Q6 MC BIO IA Q7 = CS A Q7	MC BIO IA Q9 = CS A Q3	MC BIO IA Q3 = CS A Q3 BIO IB Q4 = CS B Q6
Ch 5 Food and humans				
Ch 6 Nutrition in humans	MC BIO IA Q1 = CS A Q1 MC BIO IA Q20 = CS A Q6 MC BIO IA Q34 = CS A Q7 BIO IB Q10	MC BIO IA Q26 = CS A Q18 BIO IB Q3 = CS B Q2	MC BIO IA Q1 MC BIO IA Q24 = CS A Q15 MC BIO IA Q25 = CS A Q16 MC BIO IA Q26 = CS A Q17 BIO IB Q11 = CS B Q8	MC BIO IA Q7 = CS A Q5 MC BIO IA Q8 = CS A Q6 MC BIO IA Q9 = CS A Q7 MC BIO IA Q10 = CS A Q8
Ch 7 Gas exchange in humans	MC BIO IA Q22 = CS A Q17	MC BIO IA Q1 = CS A Q1 MC BIO IA Q30 = CS A Q20	MC BIO IA Q27 = CS A Q18 BIO IB Q2 = CS B Q1	MC BIO IA Q13 = CS A Q10 MC BIO IA Q15 = CS A Q12

Chapter	2012	2013	2014	2015
Ch 8 Transport in humans	MC BIO IA Q21 = CS A Q16 MC BIO IA Q31 = CS A Q23 MC BIO IA Q32 = CS A Q24 MC BIO IA Q33 = CS A Q5 BIO IB Q1 ~ CS B Q1	MC BIO IA Q31		MC BIO IA Q14 = CS A Q11 BIO IB Q11 = CS B Q9
Ch 9 Nutrition and gas exchange in plants	BIO IB Q5 = CS B Q5		MC BIO IA Q6 MC BIO IA Q7 MC BIO IA Q8	
Ch 10 Transpiration, transport and support in plants	MC BIO IA Q3 = CS A Q2 MC BIO IA Q10 = CS A Q11 MC BIO IA Q11 = CS A Q12 MC BIO IA Q12 = CS A Q10 BIO IB Q3 = CS B Q3	BIO IB Q6 ~ CS B Q4	MC BIO IA Q20 = CS A Q11 MC BIO IA Q21 = CS A Q12 MC BIO IA Q22 = CS A Q13 MC BIO IA Q23 = CS A Q14 BIO IB Q4 = CS B Q3	MC BIO IA Q17 = CS A Q13 MC BIO IA Q18 = CS A Q14 BIO IB Q9 ~ CS B Q8
Ch 11 Cell cycle and division	BIO IB Q11 = CS B Q8	MC BIO IA Q14 = CS A Q13 MC BIO IA Q18 = CS A Q17	BIO IB Q3 ~ CS B Q2	BIO IB Q2 ~ CS B Q2
✂ Ch 12 Reproduction in flowering plants	MC BIO IA Q24		MC BIO IA Q4 BIO IB Q8	MC BIO IA Q19 MC BIO IA Q24 MC BIO IA Q25
Ch 13 Reproduction in humans	MC BIO IA Q25 = CS A Q18 MC BIO IA Q26 = CS A Q19 MC BIO IA Q27 = CS A Q20 MC BIO IA Q28 MC BIO IA Q29 = CS A Q21	MC BIO IA Q35 = CS A Q23 MC BIO IA Q36 = CS A Q24	MC BIO IA Q28 = CS A Q19 MC BIO IA Q29 = CS A Q20	MC CS A Q22

Chapter	2012	2013	2014	2015
✂ Ch 14 Growth and development				MC BIO IA Q28
Ch 15 Detecting the environment	MC BIO IA Q8 = CS A Q8 MC BIO IA Q9 = CS A Q9 MC BIO IA Q30 = CS A Q22	MC BIO IA Q27 MC BIO IA Q28 MC BIO IA Q29 = CS A Q19 BIO IB Q7 = CS B Q5	MC BIO IA Q36 = CS A Q24	MC BIO IA Q27 = CS A Q17 MC BIO IA Q29 = CS A Q18 BIO IB Q1 = CS B Q1
Ch 16 Coordination in humans	MC BIO IA Q4 = CS A Q3 MC BIO IA Q6 = CS A Q4	BIO IB Q1 = CS B Q1	MC BIO IA Q2 BIO IB Q10 ~ CS B Q5	MC BIO IA Q22 = CS A Q15 MC BIO IA Q23 = CS A Q16
✂ Ch 17 Movement in humans	MC BIO IA Q5 MC BIO IA Q7	BIO IB Q2	MC BIO IA Q34 MC BIO IA Q35	MC BIO IA Q20 MC BIO IA Q21 BIO IB Q5
Ch 18 Homeostasis		MC BIO IA Q2 = CS A Q2 MC BIO IA Q33 = CS A Q21 MC BIO IA Q34 = CS A Q22		
Ch 19 Biodiversity	BIO IB Q4 = CS B Q4	MC BIO IA Q21	MC BIO IA Q15	MC BIO IA Q5 ~ CS A Q4
Ch 20 Ecosystems	MC BIO IA Q13 MC BIO IA Q14 MC BIO IA Q16 = CS A Q14 MC BIO IA Q17 = CS A Q15 BIO IB Q6 = CS B Q7	BIO IB Q5 BIO IB Q8 = CS B Q6	MC BIO IA Q30 = CS A Q21 MC BIO IA Q31 = CS A Q22 MC BIO IA Q33 = CS A Q23 BIO IB Q5	MC BIO IA Q30 = CS A Q23 MC BIO IA Q31 = CS A Q24 BIO IB Q3 = CS B Q3
✂ Ch 21 Photosynthesis	MC BIO IA Q2 MC BIO IA Q23	MC BIO IA Q8 MC BIO IA Q9 (deleted)		MC BIO IA Q4 MC BIO IA Q11 MC BIO IA Q12

Chapter	2012	2013	2014	2015
✂ Ch 22 Respiration	BIO IB Q9	MC BIO IA Q10	MC BIO IA Q14 BIO IB Q1	MC BIO IA Q6
Ch 23 Infectious diseases	BIO IB Q2 = CS B Q2			MC BIO IA Q33 = CS A Q21
✂ Ch 24 Non-infectious diseases and disease prevention	BIO IB Q7		BIO IB Q9 = CS B Q7	MC BIO IA Q34 = CS A Q19 MC BIO IA Q35 = CS A Q20 BIO IB Q8
✂ Ch 25 Body defence mechanisms	MC BIO IA Q35 MC BIO IA Q36	MC BIO IA Q32 BIO IB Q9	MC BIO IA Q32	MC BIO IA Q32 MC BIO IA Q36
Ch 26 Basic genetics	MC BIO IA Q15 = CS A Q13 BIO IB Q8 = CS B Q6	MC BIO IA Q4 = CS A Q4 MC BIO IA Q12 = CS A Q8 MC BIO IA Q13 = CS A Q12 MC BIO IA Q15 = CS A Q14 MC BIO IA Q16 = CS A Q15 MC BIO IA Q17 = CS A Q16 BIO IB Q4 ~ CS B Q3 BIO IB Q10 = CS B Q7	MC BIO IA Q10 = CS A Q4 MC BIO IA Q11 = CS A Q5 MC BIO IA Q12 = CS A Q6 MC BIO IA Q13 = CS A Q7 CS B Q4	MC BIO IA Q16 = CS A Q9 MC BIO IA Q26 BIO IB Q4 ~ CS B Q4
✂ Ch 27 Molecular genetics	MC BIO IA Q18 MC BIO IA Q19	MC BIO IA Q11	MC BIO IA Q16	
Ch 28 Biotechnology			MC BIO IA Q19 = CS A Q10	
Ch 29 Evolution I		MC BIO IA Q19 MC BIO IA Q20	MC BIO IA Q17 = CS A Q8 MC BIO IA Q18 = CS A Q9	BIO IB Q10 ~ CS B Q7
✂ Ch 30 Evolution II		MC BIO IA Q22	BIO IB Q6	

Elective part

Chapter	2012	2013	2014	2015
✂ E1 Human Physiology: Regulation and Control				
Ch 1 Regulation of water content	BIO II Q1a, b(i)		BIO II Q1a	
Ch 2 Regulation of body temperature	BIO II Q1b(ii)			BIO II Q1b(iii)
Ch 3 Regulation of gas content in blood	BIO II Q1b(iii)	BIO II Q1a	BIO II Q1b	BIO II Q1b(i), (ii)
Ch 4 Hormonal control of reproductive cycle		BIO II Q1b		BIO II Q1a
✂ E2 Applied Ecology				
Ch 1 Human impact on the environment	BIO II Q2a	BIO II Q2a, b	BIO II Q2a, b(ii)	BIO II Q2a, b
Ch 2 Human responsibilities for the environment	BIO II Q2b		BIO II Q2b(i), (iii)	
✂ E3 Microorganisms and Humans				
Ch 1 Basic microbiology	BIO II Q3a(i)-(iv), b	BIO II Q3b(i)	BIO II Q3a	BIO II Q3a, b
Ch 2 Use of microorganisms		BIO II Q3a, b(ii)	BIO II Q3b(i), (ii)(2)	
Ch 3 Harmful effects of microorganisms	BIO II Q3a(v)	BIO II Q3b(iii)	BIO II Q3b(ii)(1)	
✂ E4 Biotechnology				
Ch 1 Techniques in modern biotechnology	BIO II Q4a	BIO II Q4a(i)-(iii), b	BIO II Q4a(i), (ii)(1), b	BIO II Q4b
Ch 2 Applications in biotechnology	BIO II Q4b(i), (iii)(1), (2)			BIO II Q4a
Ch 3 Bioethics	BIO II Q4b(ii), (iii)(3)	BIO II Q4a(iv)	BIO II Q4a, b(ii)(2)	

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