

APOLLO

Photosynthesis

HL

Biology

First assessment 2025

10 questions | mark schemes

Mark-scheme answers

Biology HL | Paper 1A | May 2025 TZ1 | Q8 | 1 marks

8. D

Biology HL | Paper 1A | May 2025 TZ1 | Q14 | 1 marks

14. B

Biology HL | Paper 1A | May 2025 TZ2 | Q6 | 1 marks

6. C

Biology HL | Paper 1A | May 2025 TZ2 | Q7 | 1 marks

7. D

Biology HL | Paper 1A | May 2025 TZ2 | Q8 | 1 marks

8. B

Biology HL | Paper 1A | May 2025 TZ3 | Q7 | 1 marks

7. B

Biology HL | Paper 1A | May 2025 TZ3 | Q36 | 1 marks

36. D

10.	b	a. ATP produced by photosynthesis/in chloroplasts OR photosynthesis occurs in the chloroplast / photosynthesis produces glucose; b. ATP synthase/electron carriers/proton pumps/photosystems/pigments in the thylakoid membrane OR ATP synthase/electron carriers/proton pumps the inner mitochondrial membrane/cristae; c. chlorophyll/pigments absorb light; d. in photosystems/Photosystem I/Photosystem II/antenna complexes; e. electrons (in chlorophyll/pigments) raised to higher energy levels/become excited; f. (excited) electrons passed between carriers/along the electron transport chain; g. energy from electrons used (by carriers) to pump protons/H⁺ ions; h. from the stroma to the thylakoid space; i. proton gradient generated/high concentration of protons generated in the thylakoid space/lumen; j. protons flow back (to stroma) through ATP synthase; k. ADP phosphorylated / ADP and phosphate converted to ATP / ATP made by phosphorylating ADP; l. cyclic (photophosphorylation) only uses PS1 but non-cyclic uses both/PS1 and PS2; m. water is split (by photolysis) to replace electrons lost (by photosystem);		7 max
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Question	Answers	Notes	Total
10. c	<i>Similarities</i> a. (all heterotrophs) use foods/carbon compounds/other organisms as their energy source/to use for ATP production; b. (all heterotrophs) get energy/carbon compounds/organic compounds/glucose/carbohydrate/lipids/fats from other organisms; <i>Differences</i> c. saprotrophs/decomposers feed on dead organic matter; d. saprotrophs/decomposers secrete digestive enzymes into the food source / digest externally; e. consumers feed on living organisms/other organisms; f. primary consumers feed on plants/other example of feeding relationships in a food chain; g. detritivores ingest detritus/<i>OWTTE</i>; h. digestion of food so compounds can be absorbed; i. internal digestion in holozoic animals/detritivores; j. energy from carbon compounds used to produce ATP by cell respiration;		5 max

Mark-scheme answers

Biology HL | Paper 1A | Nov 2025 TZ1 | Q8 | 1 marks

8. D

Biology HL | Paper 1A | Nov 2025 TZ3 | Q7 | 1 marks

7. B