

APOLLO

Climate change SL

Biology

First assessment 2025

4 questions | mark schemes

Mark-scheme answers

Biology SL | Paper 1A | May 2025 TZ2 | Q30 | 1 marks

30. D

7.	a	a. carbon can form 4 bonds; b. carbon forms <u>covalent</u> bonds; c. carbon can form single or double/triple bonds; d. carbon can form bonds with other carbon atoms / with other (non-metallic) elements; e. carbon can form branched / unbranched chains; f. carbon can form single / multiple rings;		4 max
7.	b	a. (short term) storage of carbon/CO₂ in the atmosphere/aquatic environments as CO₂; b. photosynthesis/carbon fixation: carbon/CO₂ is absorbed; c. feeding: carbon is passed through food chains in organic molecules; d. (cellular) respiration returns carbon/CO₂ to the environment; e. (long term) storage of carbon in fossil fuels/ limestone/ forests; f. decomposition returns carbon/CO₂ to the atmosphere OR - decomposers/saprotrophs return carbon to the soil; g. carbon dioxide is put into the environment by burning/combustion OR - carbon dioxide is put into atmosphere by volcanic activity; h. used by coral/mollusca/specific organism as calcium carbonate to build shells;	Accept answers shown as an annotated carbon cycle.	4 max

Question	Answers	Notes	Total
7. c	a. greenhouse effect describes that greenhouse gases trap long-wave radiation from the Earth's surface and absorbs it keeping the Earth warm OR - increase in greenhouse gases trapped in atmosphere increases Earth's temperature; b. burning of fossil fuels/peat/coal/natural gas by humans has released more CO₂ into the atmosphere causing temperature rise on Earth; c. raising livestock for feed has added methane/greenhouse gas to the atmosphere causing more heat to be trapped on Earth; d. industrial processes / fertilizer production has increased the concentration of nitrous oxides/greenhouse gases in the atmosphere; e. deforestation has increased the amount of CO₂ in the atmosphere/reduced an important sink for CO₂; f. increased temperatures have caused melting of land ice leading to changes to polar habitats/decreasing species ability to survive OR - melting of ice/snow causes reduction in albedo, so there is more insolation absorbed at Earth's surface; g. warmer surface water prevents upwelling of nutrients/decreases ocean productivity; h. coral reef habitat destruction due to changes in water pH / temperature; i. warmer temperatures/decreased snowfall has led to droughts and loss of life/habitats; j. rates of decomposition of peat/organic matter increases greenhouse gases; k. ocean/sea level rise from melting ice/thermal expansion of oceans has impacted coastal regions/loss of land; l. changing weather patterns due to global warming has caused loss of life and infrastructure; m. poleward migrations/migrations to more suitable places due to climate changes at lower latitudes;		7 max

Mark-scheme answers

Biology SL | Paper 1A | Nov 2025 TZ1 | Q30 | 1 marks

30. A

Biology SL | Paper 1A | Nov 2025 TZ3 | Q29 | 1 marks

29. A