

APOLLO

Natural selection

SL

Biology

First assessment 2025

5 questions | mark schemes

Mark-scheme answers

Biology SL | Paper 1A | May 2025 TZ1 | Q29 | 1 marks

29. C

2.	b	a. change in environment may cause which characteristics are advantageous/disadvantageous OR selection pressures change; b. natural selection favours organisms that are best adapted to survive in the (changed) environment OR organisms that possess the favourable genes/are best adapted to the environment will survive to / reproduce/pass their traits on; c. an example of a trait and how it may become more advantageous/disadvantageous for a specific change in environment;	Accept vice versa	2 max
2.	c	a. keystone species have a disproportionate/significant/high/large effect on the structure of an ecosystem / <i>OWTTE</i>; b. loss of biodiversity/diversity of species will occur; c. change of population size/numbers of other species may occur; d. change/disruption in food webs/chains would occur; e. example of loss and its effect;		2 max

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2225 – 6012M

Question	Answers	Notes	Total
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Mark-scheme answers

Biology SL | Paper 1A | Nov 2025 TZ1 | Q29 | 1 marks

29. D

6.	a	a. soluble (in water/blood) SO it is easily transported; b. glucose is (easily) oxidised/used to produce ATP in (cell) respiration; c. has high energy bonds/energy rich / is a source of (chemical) energy; d. energy/ATP is used in muscle contraction/active transport/any correct biological answer; e. can be polymerized (by condensation) SO can be stored; f. can be converted into glycogen/starch/cellulose; g. polymers easily broken down so energy/glucose can be released;	<i>For b. do not accept Glucose "produces" energy alone</i> <i>For e. accept descriptions of polymerization</i>	5 max
6.	b	a. use of pesticides/insecticides (which may kill/harm pollinators); b. urbanization; c. loss of habitat/change of land use (monocultural/intensive farming practices); d. use of herbicide or removal of "weeds" reducing food sources; e. introduction of alien species;	<i>For a. or d. the mention of a specific pesticide or herbicide would be ok.</i>	3 max

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8825 – 6024M

Question		Answers	Notes	Total
6.	c	a. variation exists within a species / OWTTE; b. mutation generates variation/new alleles; c. meiosis/sexual reproduction generates variation (new combinations of alleles); d. example of flower's trait to be selected for in this context; e. (natural selection is caused by) selection pressures / changes in the environment / due to competition for pollinators / pollination; f. flowers that have an advantageous characteristic attract more insects; g. (plants with attractive flowers are) more likely to be pollinated/reproduce; h. pass on the new allele / combination of alleles/<u>heritable</u> trait; i. allele frequency increases over many generations; j. eventually different populations of this species can no longer produce fertile offspring/new species formed;	<i>For d. Award anywhere in response and allow examples including bright petals / enclosed anthers / enclosed stigma / sticky pollen. Also accept suggestions such as odour / colour that is particularly attractive to bees.</i> <i>For g. to j. Accept converse – i.e. individuals without the advantageous characteristic are less likely to reproduce and pass on their alleles, so alleles conferring a disadvantage are selected against.</i> <i>For g. do not accept survival.</i>	7 max

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8825 – 6024M

Question	Answers	Notes	Total
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Mark-scheme answers

Biology SL | Paper 1A | Specimen 2025 | Q30 | 1 marks

30. A