**Interactions between organisms (answers)**

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| Instructions to students  • You have 50 minutes to complete the test.  • Please answer all questions in the spaces provided.  • There is to be no talking during the test. | Marks  Section I: Multiple-choice questions: 5 marks  Section II: Short-answer questions: 11 marks  Section III: Extended-response questions: 9 marks  Total: 25 marks |

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| Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Class: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Score: /25  Grade: % |
| Comments: | |

Section I: Multiple-choice questions

For each question, circle or highlight the correct answer.

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| 1 Which of the following best describes the term ‘ecosystem’? | |  |
| A | A community and its environment. |
| B | The producers and consumers together. |
| C | A food web. |
| D | The flow of matter and energy through a community. |
| 2 Which one of the following groups of organisms contains only producers? | | |
| A | Cats, green frogs, mice | |
| B | Gum trees, worms, beetles | |
| C | Cacti, grass, pond weed | |
| D | Mushrooms, bacteria, wheat | |
| 3 In a food chain, organisms that feed on a producer are called: | | |
| A | omnivores. | |
| B | predators. | |
| C | primary consumers. | |
| D | predators. | |

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| 4 Which of the following is NOT true of firestick farming? | |
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| A | It creates space and allows plenty of sunlight to reach the forest floor for new shoots to grow. |
| B | It prevents the build-up of dense eucalypts and scrub. |
| C | It encourages herbivores to live in these areas. |
| D | It should be carried out in both woodland and rainforest areas. |
| 5 An organism that recycles nutrients by breaking down dead organic matter is called a: | |
| A | producer. |
| B | decomposer. |
| C | secondary consumer. |
| D | primary consumer. |

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|  | Section I  Total marks:  /5 marks |

Section II: Short-answer questions

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| The information below is to be used to answer questions 6–9.  In the pond are various water plants, algae and reeds. Around the pond are grasses and small shrubs. |

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| Organisms feeding in and around the pond ecosystem |

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| Organism | Feeding requirements | | |
| Pelican | Small and large fish, frogs and yabbies | | |
| Brown trout (a fish) | Insect larvae and insects | | |
| Kingfisher | Small fish, yabbies and tadpoles | | |
| Tadpoles and small fish | Algae and water plants | | |
| Water insects | Water plants | | |
| Feral cat | Frogs, ducks, yabbies and kingfishers | | |
| Frogs | Insects, worms and grubs | | |
| Ducks | Water plants, small yabbies and worms | | |
| Platypus | Insects, worms, small crabs and yabbies | | |
| Yabbies and small crabs | Algae, water plants, small insects and beetles | | |
| Mosquito larvae | Algae | | |
| Water snake | Small fish, frogs and ducklings | | |
| 6 Identify one herbivore and one omnivore in the pond. | | | |
| Students’ answers will vary.  Tadpoles / insect larvae / small fish / insects / grubs are herbivores (1 mark).  Small crabs / yabbies are omnivores (1 mark). | | | |
|  | | | /2 marks |
| 7 If humans caught all the fish in this pond, what do you think would happen to the amount of algae? | | | |
| The amount of algae would increase (1 mark).  Idea of other organisms in the food web being affected (1 mark). For example, large fish eat the insects that feed on algae too, so if there were no longer any large fish in the pond the number of insects around the pond may increase. This could increase the numbers of insect larvae in the pond and they may, in turn, reduce the amount of algae present. | | | |
|  | | | /2 marks |
| 8 Why is the presence of a feral cat in this ecosystem a cause for concern? | | | |
| Feral cats are predators of the kingfisher, frogs, yabbies, fish and platypus (1 mark). There are no natural predators for the feral cat (1 mark) and so if it breeds, the population could increase without control (1 mark). | | | |
|  | | | /3 marks |
| 9 Using the information in the table on page 3 on organisms feeding in and around a pond ecosystem, construct a food chain involving five organisms. Separate each organism with arrow symbols. | | | | |
| Arrows point in the correct direction (1 mark).  Food chain begins with a producer (1 mark).  Includes five appropriate organisms (1 mark).  Five organisms selected are in the correct order (1 mark).  For example: Algae 🡪 Tadpoles 🡪 Yabbies 🡪 Kingfisher 🡪 Feral cat | | | /4 marks | |
|  | | | Section II  Total marks:  /11 marks | |

Section III: Extended-response questions

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| 10 Select a human activity such as deforestation, land degradation, and urban sprawl and explain how it can impact the biodiversity of an ecosystem. | | |
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| Describe biodiversity (1 mark).  Describe a human activity (1 mark).  How the human activity affects biodiversity (3 marks).  For example: Biodiversity is the variety of different organisms within an ecosystem (1 mark). Deforestation is the clearing of land, reducing the number of producers (1 mark). It reduces biodiversity (1 mark) as there is less food/nest sites/habitats for other organisms, resulting in fewer organisms (1 mark). Food webs are altered as new predators such as feral cats move in (1 mark). | | |
|  | /5 marks | |
| 11 Decomposers are not shown in food webs; however, they play an important role in all ecosystems. Discuss the importance of having decomposers in an ecosystem and the consequence to the environment if they were not present. | | |
| Strawberries decomposing | | |
| Students’ answers will vary:  An example (1 mark), their role (1 mark), their importance (1 mark), one consequence (1 mark).  For example: Decomposers like bacteria / fungi / worms / slugs (1 mark) break down dead organic matter in an ecosystem (1 mark). Decomposers recycle nutrients back into food chains (1 mark) when organisms eat decomposers, or back into the soil to be taken up by producers. If decomposers were not present, the dead organisms would remain and build up in our environment / these nutrients would not be available again for other organisms (1 mark). | | |
|  | | /4 marks |
|  | | Section III  Total marks:  /9 marks |