YEAR 7 SCIENCE: BIOLOGICAL SCIENCE TEST

Name: **Marking Key** _____ Class: _____

Multiple Choice: _____ /15 Short Answer: _____ /30 Mark: _____ /45

Achievement Standards Tested:

- *Classification helps organise the diverse group of organisms (ACSSU111).*
- *Interactions between organisms can be described in terms of food chains and food webs; human activity can affect these interactions (ACSSU112).*

MULTIPLE CHOICE: Write the answer to each multiple-choice question in the appropriate box below.

QUESTION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
ANSWER	A	A	A	B	A	C	B	D	B	C	D	C	C	C	D

1. A habitat is:
   a) a place where an organism lives.
   b) an ecosystem.
   c) a group of competitors.
   d) the way an organism behaves.

2. Which of the following is NOT an abiotic factor?
   a) Tree
   b) Water
   c) Light
   d) Temperature

3. Which of these human activities would have a negative impact on a natural environment? (i.e., Cause the number of plants or animals to decrease).
   a) Clearing forests and replacing them with exotic trees.
   b) Removing grazing cattle from a natural woodland.
   c) Replanting eucalyptus trees.
   d) Reintroducing koalas into eucalyptus forests.

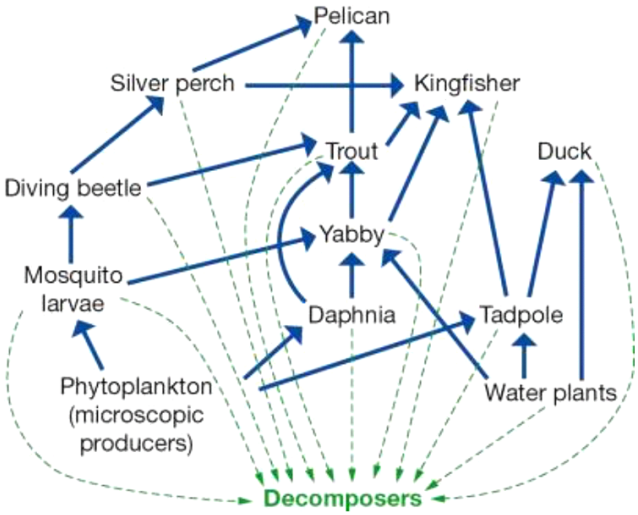
4. Which of these human activities has a positive effect on food webs? (i.e., Cause the number of plants or animals to increase).
   a) Opening up an area of bushland for recreational activities
   b) Removing introduced predators from an area.
   c) Overfishing particular fish species causing a decline in numbers.
   d) Introducing exotic species, such as rabbits and foxes.

5. Plants are examples of:
    a) producers.
    b) consumers.
    c) carnivores.
    d) decomposers.

6. Describe a decomposer organism.
    a) An animal that eats another animal
    b) A plant that loses its leaves in winter
    c) An organism that breaks down organic matter, so it is recycled
    d) An animal that uses sound as its main method of communication

7. What ecosystem group do bacteria and fungi belong to?
    a) carnivores.
    b) decomposers.
    c) plants.
    d) herbivores.

8. Identify the correct food chain that is part of this food web.



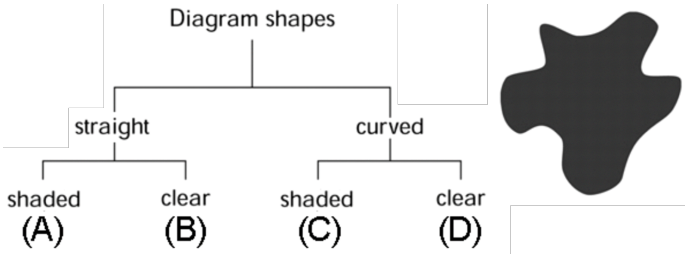
    a) Phytoplankton → daphnia → trout → duck → decomposers
    b) Water plant → tadpole → trout → kingfisher → decomposers
    c) Phytoplankton → mosquito larvae → yabby → silver perch → pelican → decomposers
    d) Water plant → yabby → trout → kingfisher → decomposers

9. What is the correct order of the taxonomic rank?
    a) Kingdom, Phylum, Family, Class, Order, Genus, Species
    b) Kingdom, Phylum, Class, Order, Family, Genus, Species
    c) Family, Genus, Species, Kingdom, Phylum, Class, Order
    d) Kingdom, Phylum, Class, Order, Species, Genus, Family

10. Which of the following is the correct way of writing the scientific name of the plains zebra?
    a) EQUUA QUAGGA
    b) *equus quagga*
    c) *Equus quagga*
    d) Equus Quagga

11. The source of energy for all the organisms in a food web is:
    a) soil for providing essential minerals.
    b) water to prevent dehydration.
    c) green plants for photosynthesis.
    d) the sun for providing light.

12. Using the key, the shape shown could be identified as:
    a) shape A
    b) shape B
    c) shape C
    d) shape D



13. Which of the following is an introduced species?
    a) Wallaby
    b) Kangaroo
    c) Cane toad
    d) Koala

14. Which describes the possible flow of energy in an ecosystem?
    a) snakes to frogs to caterpillars to trees
    b) trees to frogs to snakes to caterpillars
    c) trees to caterpillars to frogs to snakes
    d) caterpillars to trees to frogs to snakes

15. In which ecosystem would you expect to find frogs?
    a) Desert
    b) Arctic
    c) Grassland
    d) Wetlands

SHORT ANSWER: Write the answer to the questions in the spaces provided.

1. Use the food chain below to answer the following questions.

grass → *grasshopper* → *frog* → *snake* → *kookaburra*

a) Classify the organisms below in this food chain as **producers** or **consumers**. If they are consumers then state what **order** of consumer they are. [2] Half mark for every correct answer.

Grass = Producer

Grasshopper = 1st order consumer

Frog = 2nd order consumer

Snake = 3rd order consumer

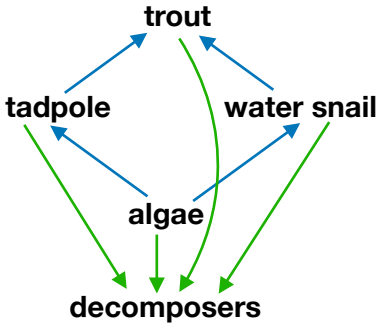
b) Explain why **producers** and **consumers** are named this way. [2]

Producers make or produce their own food [1]. Consumers cannot do this they have to take in other food sources by consuming them [1].

2. Is it possible that a prey animal can **also** be a predator? Explain with an example. [2]

Yes it is possible [1]. Appropriate example + describes an organism that could eat something and be eaten by something [1].

3. The diagram represents a food web in a freshwater lake.



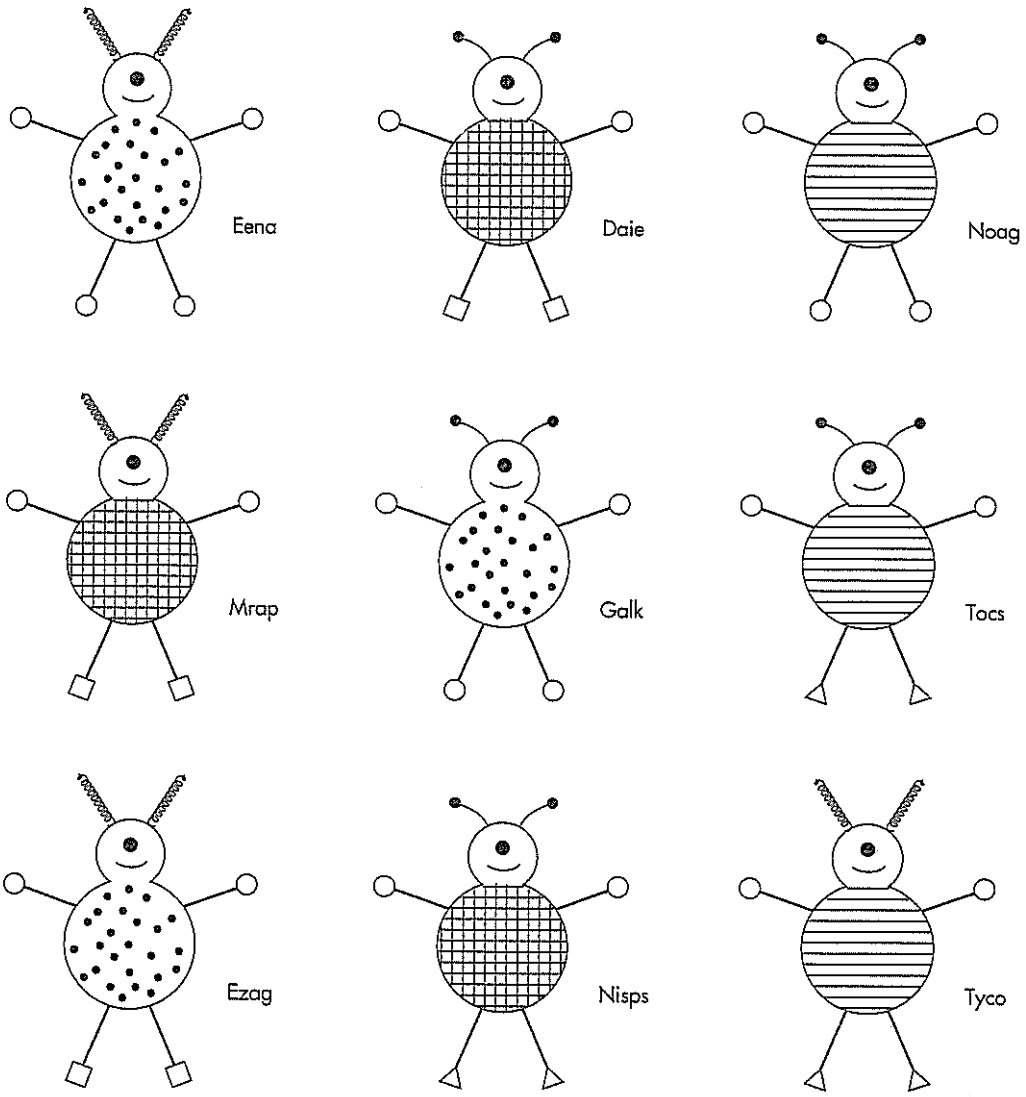
a) What would be the **effect on the number of water snails** if fishermen fished all of the trout out of the lake and they died out? [1]

The water snail population would increase.

b) Explain your answer. [1]

As trout are the only predator of the snail, if they are removed the water snails would not be eaten and their population would increase.

4. Nine aliens landed in the schoolyard this morning and introduced themselves as Eena, Daie, Noag, Mrap, Galk, Tocs, Ezag, Nisps and Tyco. Mr Collins has asked you to make a key so he can know their names without having to ask.



Use the pictures above to make a **dichotomous key** to help Mr Collins. [5]

Keys will vary. Award marks for recognising different patterns [1], different antenna [1] and different feet shapes [1], appropriate/clear presentation [1] and correct organisation of all nine names [1].

5. The following information is to be used to answer the next five questions.

ORGANISMS FEEDING IN AND AROUND THE POND ECOSYSTEM			
Organism	**Feeding Requirements**	**Organism**	**Feeding Requirements**
Brown trout (a fish)	Insects	Frogs	Insects, worms and grubs
Pelican	Small and large fish, frogs, yabbies	Ducks	Water plants, small yabbies and worms
Kingfisher	Small fish, yabbies and small tadpoles	Platypus	Insects, worms, small crabs and yabbies
Tadpoles	Algae and water plants	Yabbies and small crabs	Algae, water plants, small insects and beetles
Water insects	Water plants and algae	Small fish	Algae and water plants
Feral cat	Frogs, ducks, yabbies, kingfishers	Water snake	Small fish, frogs, ducklings
In the pond are various water plants, algae and reeds. Around the pond are grasses and small shrubs.			

a) What are the **producers** in this ecosystem? [1]

Water plants, algae, reeds, grasses, small shrubs.

b) Which organisms in this environment are **herbivores**? [1]

Water insects, small fish, tadpoles.

c) If humans caught all the fish, what do you think would happen to the population of **algae**? [1]

The population of algae would increase.

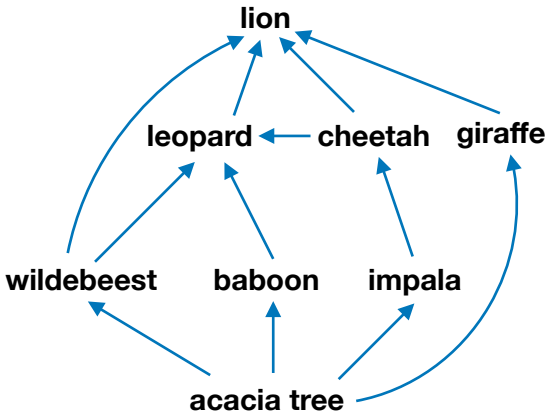
d) What impact would introducing a **new species** that ate yabbies and small crabs have on the ecosystem? [2]

The new species would compete with native animals for food or other resources [1] . It would also predate on native yabbies and small crabs therefore reducing the population of those organisms in the ecosystem [1].

e) Using the information in the table, construct a food chain involving **five** organisms. Separate each organism with **arrows** pointing in the **correct direction**. [6]

Identifies 5 organisms in a chain [5] and includes arrows pointing in the correct direction [1].

6. Use the food web of an African Savannah below to answer the following questions.



a) Explain what the arrow between two organisms means. [1]

It represents the flow of energy from what is being eaten to what is doing the eating.

b) Identify the very important **group** of organisms that has **not** been included in this food web. [1]

Decomposers

c) Explain the **role** of this group of organisms. [1]

They break down dead and decaying animals and plants and their wastes to form small molecules that can be used by plants.

d) Draw **two** different food chains that include the **leopard**. [2]

(i) Any two of the following:
Acacia → wildebeest → leopard → lion
Acacia → baboon → leopard → lion
Acacia → impala → cheetah → leopard → lion

(ii)

e) Explain why this community **could not survive** without acacia trees. [1]

It is the only producer in the food web so it provides all the organisms with food.