

**YEAR: 12**

**GENERAL BIOLOGY**

**Task 7 : Ecosystems**

**Please do not mark this paper.**

MULTIPLE CHOICE (12 marks)

1)

2)

3)

4)

5)

6)

7)

8)

9)

10)

11)

12)

**Year 12**

**General Biology**

|  |
| --- |
| Name: |
| Teacher: |

|  |  |  |  |
| --- | --- | --- | --- |
| **Task 7: Ecosystems Test** | | | Weighting 10% |
| Marks Received | Marks Available | Percentage | |
|  |  |  | |

Time Allocated:

Working time: 60 minutes

**Multiple Choice Short Answer Extended Answer Total**

**/28**

**/12**

**/13**

**/53**



**TEST: Ecosystems**

**ANSWER BOOKLET**

**NAME:**

**FORM:** **DATE:**

**SECTION ONE:** Multiple choice answers

Cross (X) through the correct answer.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1 | a | b | c | d |
| 2 | a | b | c | d |
| 3 | a | b | c | d |
| 4 | a | b | c | d |
| 5 | a | b | c | d |
| 6 | a | b | c | d |
| 7 | a | b | c | d |
| 8 | a | b | c | d |
| 9 | a | b | c | d |
| 10 | a | b | c | d |
| 11 | a | b | c | d |
| 12 | a | b | c | d |

**Short Answer Section (28 marks)**

1. 13) **Examine** the food chain shown below.

*water weed → tadpole → moorhen → swamp harrier* (3 marks)

For this food chain, **identify** the:

a producer : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

b herbivore : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

c third order consumer: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. 14) Consider the food chain shown below.

*leaves* →*caterpillar* → *honeyeater* →*brown hawk*

The total energy in the leaves is much greater than the energy received by the hawk. **Describe** the main reason why energy in the cells of the leaves may not reach the hawks. (3 marks)

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1. 15) Compare how matter and energy flow through an ecosystem (4 marks)

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16) From the following list of relationships choose which one best suits the associations A. B. C. and D? (4 marks)

Predator –prey

Parasitism

Competition

Mutualism

1. An osprey and the fish its caught and eaten \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. A dog and its fleas \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Dodder ( a plant that produces only a little food by photosynthesis living on a stringy bark tree) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. Flagellates living in the gut of a termite and digesting the cellulose eaten by the termite\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

17) Complete the following table providing examples of the different factors that can influence an organism within its environment. (4 marks)

|  |  |
| --- | --- |
| Abiotic factors | Biotic factors |
|  |  |
|  |  |

18) The following diagram shows a simplified food web occurring in a freshwater lake community in Southern Australia.

Herron

Sea Eagle Marron

Bream

Trout Snails

Catfish

Minnows

Copepods

Diatoms Submerged Aquatic Plants

Blue Green Algae Emergent

(growing out of the water)Aquatic plants

* 1. **Write** one food chain from this food web. (2 marks)
  2. For this food chain **explain** the way that energy became trapped and used in the food web, include equation (2 marks)

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* 1. Using the food web, **describe** impacts of an increase in heron (2 marks)

* 1. Each of the organisms in the food web is made of matter. Matter is said to cycle through the ecosystem. Using the water cycle as an example, **explain** how matter cycles.   
      (4 marks)

EXTENDED RESPONSE (13 marks)

19) After several visits to a fresh water stream community and a long practical study, a class of Year 12 Biology students identified and observed many organisms. They gathered together the following pieces of information:

Tadpoles feed on water fleas, protozoa and green algae.

Mosquito larvae and protozoa feed on green algae.

Fish feed on water fleas, tadpoles and mosquito larvae.

1. Construct a food web from the above information. (5 marks)
2. i) What is the term used to describe the diet of an animal which feeds on both plants and animals? (1 mark)

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ii) Give one example of such an organism from the food web constructed above (1 mark)

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1. What is the ultimate source of energy entering the food web? (1 mark)

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1. One important group of living organisms is missing from the community.
2. What is this group? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Why is it important? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(2 marks)

1. The grasses surrounding the freshwater stream community have been sprayed with the persistent insecticide DDT in an attempt to control an increase in mosquito population.

i) Explain why a low concentration of DDT sprayed results in a high concentration in the heron. (2 marks)

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1. Why may this insecticide become ineffective if used for several years in succession? (1 mark)

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