

Motheo District

GRADE 8

NATURAL SCIENCES

MARCH 2019

TIME: 1 HOUR

TOTAL: 50

This question paper consists of 9 pages.

INSTRUCTIONS

1. The paper consists of TWO SECTIONS:
SECTION A – One question (Question 1)
SECTION B – Three questions (Questions 2 to 4)
2. Answer ALL the questions.
3. Number all the answers in your answer book exactly as the questions are numbered in the question paper.
4. Write neatly and legibly.

SECTION A

QUESTION 1

1.1 Various options are provided as possible answers to the following questions. Choose the correct answer and write only the letter (A – D) next to the question number (1.1.1 – 1.1.5) in the ANSWER BOOK, e.g. 1.1.6 D

1.1.1 Energy is changed / transformed from during photosynthesis.

- A chemical energy to light energy.
- B light energy to radiant energy.
- C light energy to chemical energy.
- D light energy to heat energy.

(1)

1.1.2 A group of individuals from the same species living in the same ecosystem at the same time.

- A Community
- B Species
- C Population
- D Ecosystem

(1)

1.1.3 During a scientific investigation, data was collected on biotic and a-biotic factors that had an influence on the ecosystem of a nearby pond.

The factors identified for which data was collected included:

- | | |
|-----------------------|------------------|
| (i) oxygen content | (ii) minerals |
| (iii) species of fish | (iv) temperature |

Which one of the following statements is correct?

- A only (iii) is a biotic factor
- B (i) and (iv) are biotic factors
- C (i), (ii) and (iv) are biotic factors
- D (ii) and (iii) are biotic factors

(1)

1.1.4 Organisms hunted and eaten by other animals:

- A Consumers
- B Hunters
- C Predators
- D Prey

(1)

1.1.5 Organisms that break down dead organic matter are known as:

- A Consumers
- B Hunters
- C Decomposers
- D Herbivores

(1)

[5]

1.2 Choose an item from COLUMN B that matches a statement in COLUMN A. Write only the letter (A – H) next to the question number (1.2.1 – 1.2.5) in the 'ANSWER BOOK, for example: 1.2.6 H

COLUMN A	COLUMN B
1.2.1 A type of food sugar, produced by plants during photosynthesis.	A Mimicry
1.2.2 The process of managing ecosystems, which include the control of alien vegetation and preservation of wetlands	B Camouflage
1.2.3 Animals that eat dead animals rather than hunting live prey.	C Glucose
1.2.4 Herbivores, carnivores, omnivores and parasites in food chains	D Conservation
1.2.5 An adaptation which allow animals to hide by blending in with its surroundings.	E Scavengers
	F Consumers
	G Sustainable use
	H Carnivores

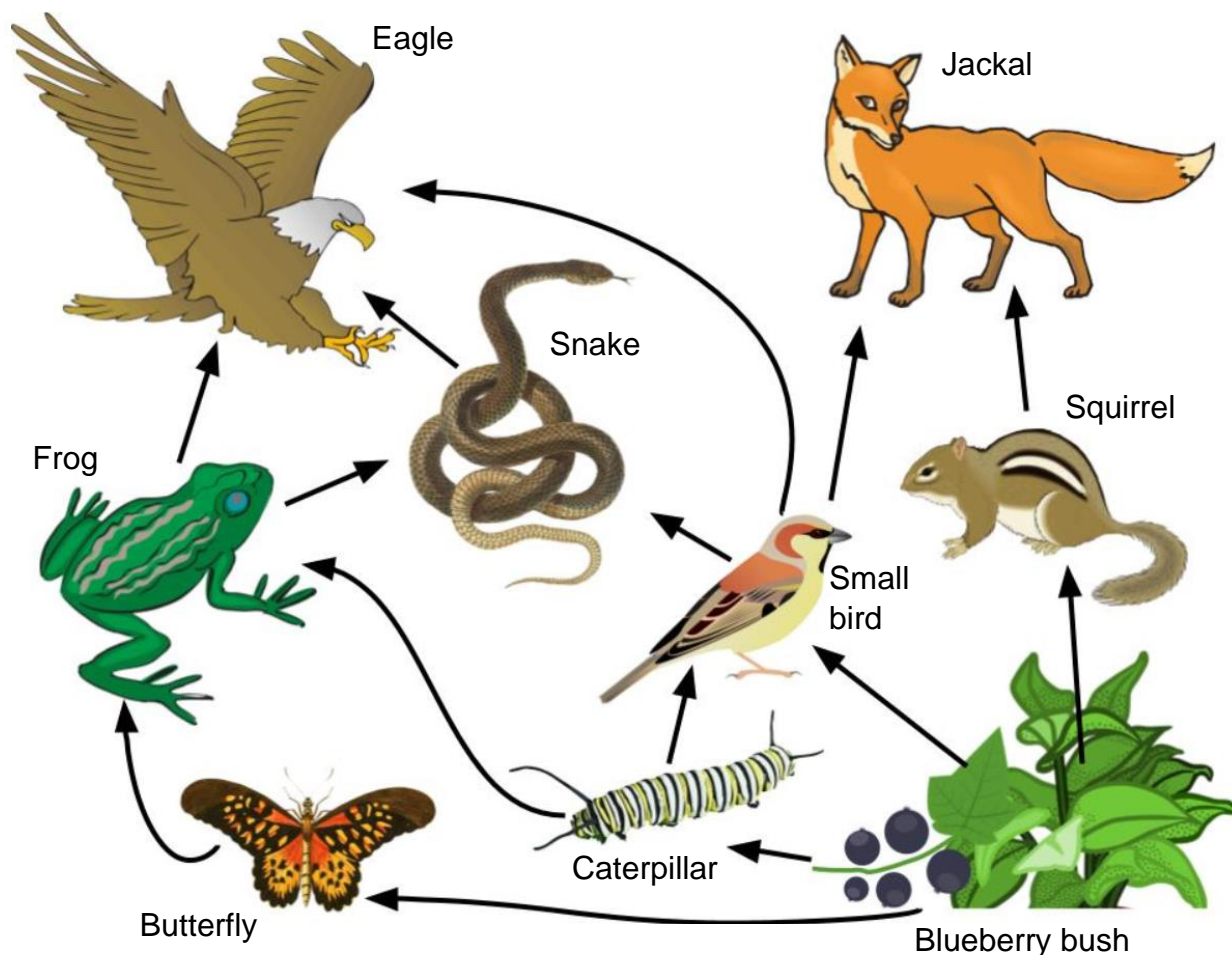
[5]

TOTAL SECTION A:[10]

SECTION B

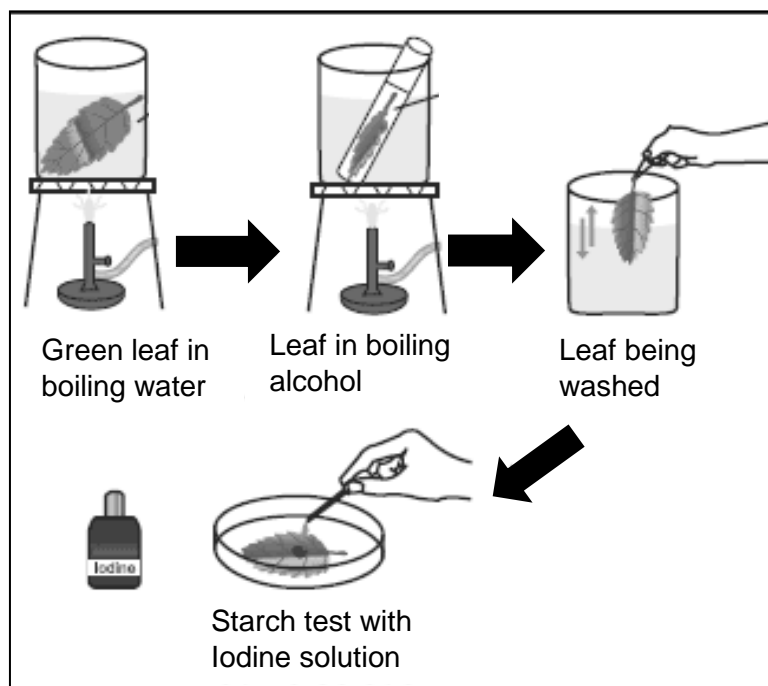
QUESTION 2

2. Study the food web in the diagram below and answer the questions that follow.



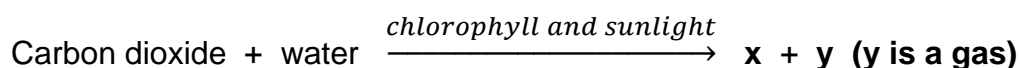
- 2.1. Make use the food web above and write down a food chain with a minimum of four(4) trophic levels. (4)
- 2.2. Is the snake in the diagram an example of a herbivore, a carnivore or an omnivore? Give a reason for your answer. (2)
- 2.3 Use the diagram of the food web and identify;
- 2.3.1. one example of a producer. (1)
- 2.3.2 one example of a herbivore. (1)

- 2.4 The following experiment on photosynthesis was conducted in a science laboratory. The green leaf in the diagram was picked at lunchtime on a sunny day.



(Obtained from www.indiastudychannel.com)

- 2.4.1 Write down an investigative question for this investigation. (2)
- 2.4.2 Why should we boil the leaf in water before the starch test can be performed? (1)
- 2.4.3 What is the colour of the leaf after it has been boiled in alcohol? (1)
- 2.4.4 Explain the colour change of the leaf in question 2.4.3. (2)
- 2.4.5 What is the colour of the leaf after a few drops of iodine solution were dropped onto the leaf? (1)
- 2.4.6 What does this result in question 2.4.5 indicates? (1)
- 2.5. Consider the following word equation:



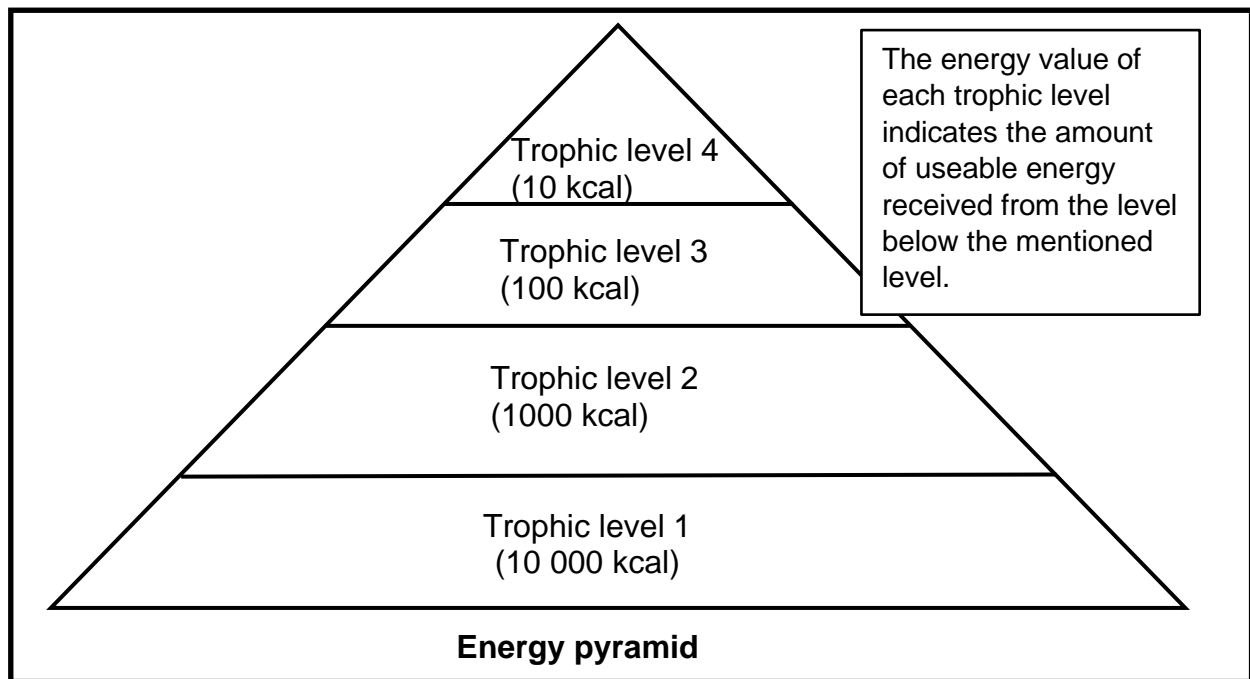
- 2.5.1 Complete the word equation by providing the missing words for **x** and **y**. (Take note that substance **y** is a gas) (2)
- 2.5.2 What is the name of the chemical process illustrated by the equation in question 2.5? (1)

2.5.3 Explain why this chemical process is necessary for the survival of mankind?

(1)
[20]

QUESTION 3

3.1 The energy pyramid in the diagram shows the amount of energy that moves from one feeding level to another in a food web. Make use of the energy pyramid and answer the questions that follow.



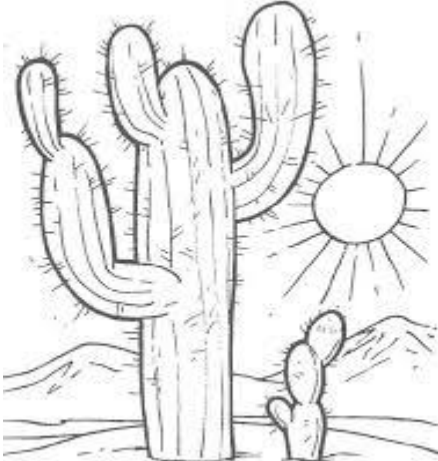
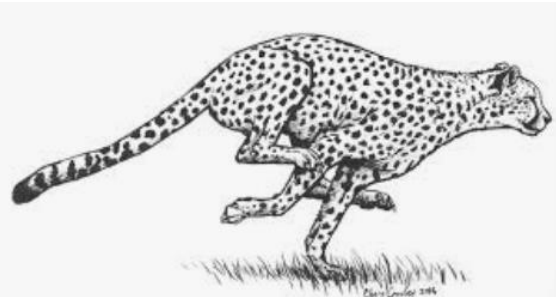
3.1.1 Which trophic level in the above pyramid has the most energy available? (1)

3.1.2 What PERCENTAGE of useable energy is transferred from one trophic level to the next (1)

3.1.3 For what purpose is the energy that is NOT transferred to the next level, used for? (1)

3.1.4 Name TWO examples of decomposers. (2)

3.2 Study the following diagram carefully. Complete the table by writing down the question numbers and the correct answers.

Organism	How the organism is adapted to
	<p>3.2.1 survive in dry conditions? (2)</p>
	<p>3.2.2 hunt its prey? (2)</p>

[9]

QUESTION 4

Read the following article and answer the questions that follow:

ARTICLE: Can you imagine a world without bees?

I can't imagine a world without bees. These fantastic little insects are not only a vital part of our natural ecosystems; they also play a crucial role in food production.

Worldwide, three out of four of our food crops depend on pollinators like bees, butterflies and other small creatures. In Europe, insects – primarily bees, pollinate 84% of all cultivated plants.

However, large scale agriculture activities threatens bees by depriving them of valuable food sources and exposing them to toxic chemicals. As a result, the existence of bees and other pollinators is seriously threatened. This fact puts our food supply and ecological balance at risk.

(Source: adapted from article on www.greenpeace.org)



- 4.1.1 Explain why bees are heading towards extinction. (2)
- 4.1.2 Is a honey bee an example of a herbivore, a carnivore or an omnivore? Give a reason for your answer. (2)
- 4.1.3 Explain why bees are important to agriculture. (1)
- 4.1.4 What percentage of plants is pollinated by bees in Europe? (1)
- 4.2 Use the definition of an ecosystem and explain why an urban city can be considered to be an ecosystem. (3)
- 4.3 Name any two examples of natural disasters that can disrupt ecosystems. (2)

[11]

TOTAL SECTION B:40
GRAND TOTAL:50