



GRADE 8
TIME: 45 MIN

NATURAL SCIENCES
CONTROLLED TEST

MARCH 2013
MARKS: 50

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INSTRUCTIONS TO LEARNERS

- Answer **ALL** the questions.
- The diagrams in this question paper may not be drawn to scale.
- Write neatly and legibly.
- This question paper consists of **3** pages

QUESTION ONE

1.1 Various options are given as possible answers to the following questions.

Choose the correct answer and write only the letter (**A to D**) next to the question number (**1.1.1 to 1.1.5**) in the **ANSWER BOOK**, for example **1.1.6 D**.

- 1.1.1 During photosynthesis the change in energy type is ...
- A. chemical energy to light energy
 - B. light energy to radiant energy
 - C. light energy to chemical energy
 - D. light energy to heat energy
- 1.1.2 What is the name of the green pigment found in plants?
- A. Chloroplast
 - B. Chloroquine
 - C. Chlorine
 - D. Chlorophyll
- 1.1.3 The reactants of photosynthesis are ...
- A. carbon dioxide and water
 - B. glucose and oxygen
 - C. carbon dioxide and glucose
 - D. glucose and water
- 1.1.4 Which of the following terms describes an animal that eats another animal in a food chain?
- A. Primary consumer
 - B. Secondary consumer
 - C. Decomposer
 - D. Herbivore

- 1.1.5 In the diagram of a food chain what do the arrows indicate?
- A. Which organism eats the next organism
 - B. The flow of energy
 - C. The flow of biomass
 - D. The amount of energy in the biological system

(5x2)[10]

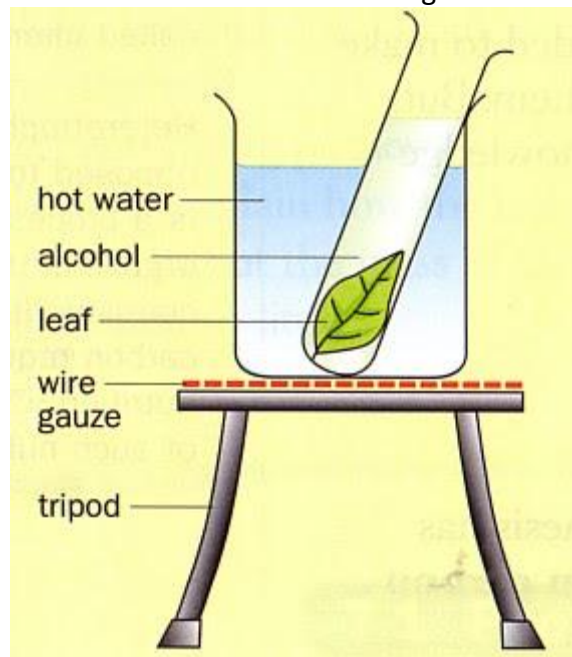
- 1.2 Choose an item from **COLUMN A** that matches a description in **COLUMN B**.
Write only the letter (**A – F**) next to the question number (1.2.1 – 1.2.5), for example 1.3.6 J.

COLUMN A	COLUMN B
1.2.1 Mitochondria	A. Can only be seen with a hand lens or microscope.
1.2.2 Secondary consumer	B. Decomposes dead organic matter
1.2.3 Micro-organism	C. Feeding level
1.2.4 Trophic	D. Converts glucose into energy
1.2.5 Bacteria	E. Eats herbivores
	F. Eats both plants and animals.

(5x1)[5]

QUESTION TWO

- 2.1 Study the diagram below which tests for starch in a green leaf.



- 2.1.1 Provide a hypothesis for the investigation. (2)
- 2.1.2 Identify the ... (1)
- (a) independent variable (1)
- (b) dependent variable (2)
- (c) fixed variables (1)
- 2.1.3 Why is it important to make sure that one of the leaves being tested has no starch in it? (1)
- 2.1.4 How would you de-starch a leaf? (1)
- 2.1.5 Why do you need to boil the leaf before testing it for starch? (2)
- 2.1.6 Why do you need to boil the leaf in ethanol? (1)
- 2.1.7 Write a balanced equation for the process of photosynthesis. (4)

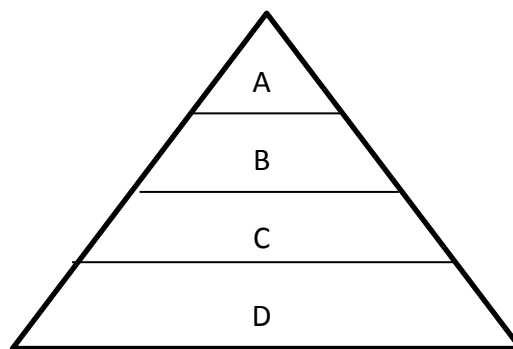
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QUESTION THREE

3.1 In a dam, **snails** are eaten by **carp** that are eaten by **bass**. There are **bulrushes** and **water lilies** growing in the dam, on which **snails** and **worms** feed. The **worms** are eaten by the **carp** and there are **leeches** that eat the **snails**.

- 3.1.1 Using the information, draw up a food web to include all seven organisms. (4)
- 3.1.2 Underline the producer/s. (2)
- 3.1.3 Which type of consumer will gain most of the energy? (1)
- 3.1.4 What does the arrow in the food web indicate? (2)

3.2 The accompanying diagram represents an ecological pyramid of a certain food chain in nature.



- 3.2.1 Which letter represents the producers? (1)
- 3.2.2 What are the functions of the producers in the food chain? (2)
- 3.2.3 What type of consumer is represented by C? (1)
- 3.2.4 Which two letters represent carnivores? (2)
- 3.2.5 If B represents snakes, which one will represent secretary birds? (1)
- 3.2.6 What would happen in a food chain to ... (1)
- (a) A, and (1)
- (b) C if all the members of B were removed? (1)
- 3.2.7 Which organism is not represented in the diagram? (2)

[20]