GAUTENG PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

GAUTENG DEPARTMENT OF EDUCATION

PROVINCIAL EXAMINATION

JUNE 2017

GRADE 6

NATURAL SCIENCES AND TECHNOLOGY

DISTRICT	
SCHOOL NAME	
EMIS NUMBER	
CLASS (e.g. 6A)	
SURNAME	
NAME	

GENDER:	BOY		GIRL	

TIME: 1 hour 30 minutes

MARKS: 50

11 pages

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MARKS: 50

INSTRUCTIONS

1. Answer ALL the questions.
2. Write neatly and legibly.
3. Read the instructions of each question before answering.
4. All questions must be answered on the question paper.

CONTENTS OF THE QUESTION PAPER

STRANDS

NATURAL SCIENCES	LIFE & LIVING, MATTER & MATERIALS
TECHNOLOGY	PROCESSING

- The question paper consists of SECTION A, SECTION B and SECTION C.

SECTION A: LOW ORDER QUESTIONS / COGNITIVE LEVEL 1	**SECTION B:** MIDDLE ORDER QUESTIONS / COGNITIVE LEVELS 2 & 3	**SECTION C:** HIGH ORDER QUESTIONS / COGNITIVE LEVELS 4,5 & 6
Q 1 Photosynthesis, Nutrition, Nutrients in food, Food processing, Mixtures, Solutions as special mixtures	Q 6 Ecosystems and food webs, Process to purify water	Food processing, Nutrients
Q 2 Nutrients in food, Ecosystems and food webs, Solutions as special mixtures	Q 7 Solids, liquids and gases	
Q 3 Solids, liquids and gases, Nutrition, Ecosystems and food webs		
Q 4 Nutrition, Wetlands, Solutions as special mixtures		
Q 5 Solutions as special mixtures		
Total=25	**Total=18**	**Total=7**

SECTION A

QUESTION 1

MULTIPLE-CHOICE QUESTIONS

Draw a **circle** around the letter of the correct answer.

1.1 What do we call the process that plants use to make glucose sugar?

A Food chain
B Photosynthesis
C Sunlight energy
D Producers (1)

1.2 Which food source provides us with good sight and healthy skin?

A Liver
B Eggs
C Oranges and lemons
D Carrots (1)

1.3 Which mineral makes red blood cells?

A Calcium
B Zinc
C Iron
D Sodium (1)

1.4 Which method can be used to separate a mixture of peanuts and raisins?

A Hand sorting
B Sieving
C Filtering
D Decanting (1)

1.5 Which method uses bacteria or yeast to change or process food?

A Drying
B Salting
C Fermenting
D Pickling (1)

(5)

QUESTION 2

TRUE OR FALSE QUESTIONS

Write whether the statements are True or False.

	STATEMENTS	TRUE OR FALSE
2.1	A hypothesis is a statement that is a possible answer to a question.	
2.2	Carbohydrates are food for energy.	
2.3	Plants are consumers and they can make their own food.	
2.4	Water is a living organism in the river ecosystem.	
2.5	Crystallisation is a method used to separate a solution, where the solvent evaporates leaving crystals of the solute behind.	

(5)

QUESTION 3

MATCHING ITEMS

Match the statements in Column A with the correct word in Column B. Write the correct **LETTER** next to the number in Column C.

Example: 3.6 Food used for growth and repairing parts of the body. **3.6 = g (protein)**

	Column A		Column B	Column C
3.1	Anything that takes up space and has mass	A	Decomposers	**3.1 =**
3.2	Difficulty in passing solid waste out of the body	B	Solution	**3.2 =**
3.3	Many food chains that are linked together	C	Constipation	**3.3 =**
3.4	Organisms that break down dead plants and animals	D	Matter	**3.4 =**
3.5	A solution in which no more of the solute will dissolve in solvent	E	Food web	**3.5 =**
		F	Saturated	

(5)

QUESTION 4

FILLING IN QUESTIONS

Read the statements below and give one word to explain it.

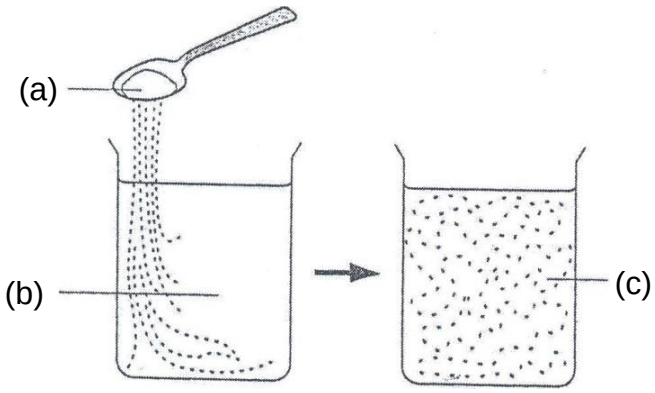
	STATEMENTS	ANSWERS
4.1	Disease that is caused by a diet that lacks vitamin C	
4.2	A place where a plant or animal lives	
4.3	An area covered by shallow water for most of the year	
4.4	A dissolved substance changing into solid crystals again	
4.5	When a substance cannot dissolve in water to form a solution	

(5)

QUESTION 5

LABELLING STRUCTURES

Study the mixture of sugar and water below.



5.1 Label parts A to C.

5.1.1 A – _____

5.1.2 B – _____

5.1.3 C – _____ (3)

5.2 Which substance is the **solvent** in the mixture?

_____ (1)

5.3 Which substance is the **solute** in the mixture?

_____ (1)

(5)

TOTAL SECTION A: 25

SECTION B

UNDERSTANDING AND APPLYING SCIENCE AND TECHNOLOGY

QUESTION 6

DRAWING AND ARRANGING QUESTIONS

6.1 Use arrows to draw and arrange living and non-living things to show how they depend on each other.

Use the following living and non-living things provided in brackets.

(Mouse, Grasshopper, Owl, Sun, Grass)

Energy → Producer → Primary consumer → Secondary consumer → Tertiary consumer

(5)

6.2 Explain what could happen to the consumers if there are no producers.

_____ (2)

6.3 Which animal from the food chain is a carnivore?

_____ (1)

(8)

6.4 Arrange the steps on how municipal water is cleaned before it is used.

Steps not in the right order	Steps in the right order (USE LETTERS ONLY)
A. In the **settlement tank**, solid matter like soil and **small** stones in the water settles down.	STEP 1:
B. In the **chlorination** tank, the **chlorine** kills any germs left in the water.	STEP 2:
C. Water is pumped from the dam.	STEP 3:
D. **Supply**: The water is pumped to a storage tank, piped to houses, schools, hospitals, and other users.	STEP 4:
E. **Filtration**: The filter bed removes very **tiny** particles from the water.	STEP 5:
F. **Sieving**: The grid sieves the water and removes **large** objects such as leaves.	STEP 6:

(6)

QUESTION 7

7.1 COMPARING PARTICLES IN SOLIDS, LIQUIDS AND GASES

CHARACTERISTICS OF PARTICLES	ARRANGEMENT OF PARTICLES	MOVEMENT
SOLID	7.1	7.3
LIQUID	Particles are closely packed together but further apart than in solids	7.4
GAS	7.2	Particles can move in all directions

(4)

TOTAL SECTION B: 18

SECTION C

QUESTION 8

EVALUATING AND ANALYSING

8.1 Name ONE (1) reason why we process food?

_____ (1)

8.2 **ANALYSING QUESTIONS**

Your friend would like to lose weight. He compares the labels on two cans of food.

Butter beans	
Food groups in each 100 g	
Energy	348 KJ
Proteins	6 g
Fats	0.6 g
Carbohydrates	14 g
Fibre	5.8 g

Tomatoes	
Food groups in each 100 g	
Energy	70 KJ
Protein	1 g
Fat	0.1 g
Carbohydrates	3 g
Fibre	0.5 g

8.2.1 Which food would be better for him to eat?

_____ (1)

8.2.2 Give ONE (1) reason for the answer that you provided to Question 8.2.1

_____ (1)

8.2.3 Which of these foods is better to eat, for someone with constipation?

_____ (1)

8.2.4 Give ONE (1) reason for the answer that you provided to Question 8.2.3.

_____ (1)

8.2.5 For an active teenager, which food would be best to eat?

_____ (1)

8.2.6 Give ONE (1) reason for the answer that you provided to Question 8.2.5.

_____ (1)
(7)

TOTAL SECTION C: 7

TOTAL: 50

END