



REGNUM BONAERIE MENTEM

## SASTRI COLLEGE

### GRADE 8 : NATURAL SCIENCES

### JUNE EXAM - 2018

TIME: 1.5 HOURS

MAX. MARKS: 100

EXAMINER: MISS S. GANGARAM

MODERATOR: MRS K. CHETTY

#### INSTRUCTIONS AND INFORMATION

**NB:** This paper consists of 2 sections typed on 8 pages.

1. Answer all the sections and all the questions.
2. **RULE OFF AFTER EACH QUESTION.**
3. Number the answers correctly according to the numbering system used in this question paper.
4. You are requested to follow the instructions of the questions or you will be penalized.
5. Write neatly and legibly.

#### SECTION A

##### QUESTION ONE

1.1. Various possible answers are provided for each question. Write only the letter corresponding to the correct answer next to the number.

1.1.1 Photosynthesis is the process in which plants produce...

- A] Sugar and Carbon dioxide
- B] Chlorophyll and Energy
- C] Starch and Carbon dioxide
- D] Glucose and Oxygen

1.1.2. The following is NOT a product of cellular respiration....

- A] Glucose
- B] Energy
- C] Carbon dioxide
- D] Water

1.1.3. An atom consists of the following components....

- A] Protons, Neutrons, Ions
- B] Protons, Neutrons, Electrons
- C] Protons, Nucleus, Ions
- D] Atoms, Elements, Nucleons

1.1.4. The process whereby a substance changes directly from a solid to a gas is known as...

- A] Melting
- B] Condensation
- C] Sublimation
- D] Freezing

1.1.5. The following is NOT an assumption of the Particle Model of Matter...

- A] Particles attract each other.
- B] Particles are in a constant motion.
- C] All matter is made up of tiny particles.
- D] Particles at a high temperature move slower than particles at a low temperature.

[5x2 = 10]

1.2. **Give the correct biological term for each of the following descriptions.**

**Write only the term next to the relevant question number.**

- 1.2.1. A chemical substance used to test for the presence of carbon dioxide gas.
- 1.2.2. Movement of particles from a place of high concentration to a place of low concentration.
- 1.2.3. Property of matter which explains why oil floats on water.
- 1.2.4. A name given to the protons and neutrons in the nucleus.
- 1.2.5. Negatively charged sub-atomic particles.

[5]

1.3 **Indicate whether each of the following statements in COLUMN A applies to A ONLY, B ONLY or BOTH A and B in COLUMN B. Write A only, B only or Both A and B next to the question number (1.3.1.– 1.3.5.) in the Answer Book**

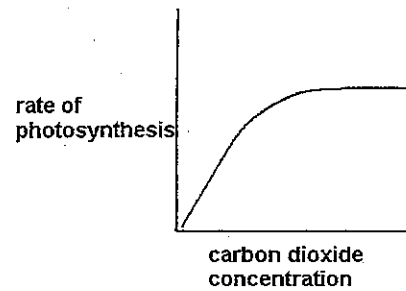
	<b><u>COLUMN A</u></b>	<b><u>COLUMN B</u></b>
1.3.1.	Plants that are adapted to high levels of water in the soil	A. hydrophytes B. xerophytes
1.3.2.	Consists of two or more different types of atoms	A. compound B. molecule
1.3.3.	Helium in a balloon is an example of an/a	A. gas B. element
1.3.4.	Area where water covers the soil.	A. hydrosphere B. wetland
1.3.5.	Micro-organisms from which antibiotics are obtained	A. bacteria B. fungi

[5]

**SUB-TOTAL QUESTION 1: [20]**

**QUESTION TWO****2.1. The rate of photosynthesis**

This graph shows what happens to the rate of photosynthesis when the concentration of carbon dioxide changes. A plant will undergo more rapid photosynthesis if there is more CO<sub>2</sub> available. Look carefully at the trend of the graph. The increase in rate reaches a certain point and then the graph flattens.



2.1.1. Supply a suitable hypothesis for the graph shown above. (2)

2.1.2. Name the following in the above graph:

- a) dependent variable (1)  
 b) independent variable (1)

2.1.3. Using the information in the table below, draw a line graph. (6)

CO <sub>2</sub> concentration (dm <sup>3</sup> )	Rate of Photosynthesis
20	40
30	60
40	80
50	100

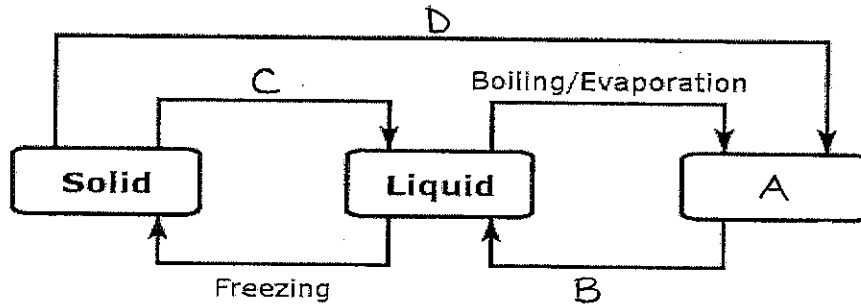
**SUB-TOTAL QUESTION 2: [10]**

**TOTAL SECTION A: [ 30 ]**

SECTION B

QUESTION THREE

3.1. Study the flow chart below and answer the questions based on it.



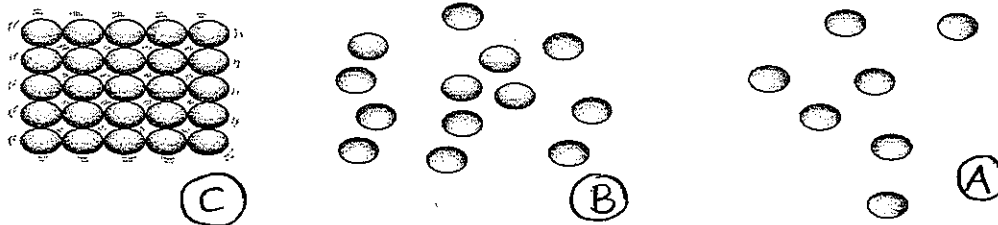
3.1.1. Name the process/phase represented by each of A, B, C and D. (4)

3.1.2. State if the following processes are examples of melting, freezing, evaporation, condensation or sublimation:

- (a) Iodine crystals turn into a purple gas when heated. (1)
- (b) Drops of water on the outside of a glass of cooldrink. (1)
- (c) Hot candle wax. (1)

[7]

3.2. Refer to the diagrams below and answer the questions that follow.



3.2.1. Identify each of the following as either a liquid, gas or a solid and give a reason for each.

- a) A (2)
- b) B (2)

3.2.2. Is it possible to turn a substance from substance C to A without becoming state B first? If so, name the process. (2)

[6]

- 3.3. The table below shows the densities of some substances found in everyday life. Study the table below and then answer the questions that follow:

SUBSTANCES	DENSITY (g/cm <sup>3</sup> )
Marble	2.00
Quartz	3.00
Diamond	4.00
Copper	9.00
Gold	19.00
Platinum	21.00
Cooking oil	0.93
Water	1.00

- 3.3.1. If Quartz is placed in cooking oil, will it float? (say Yes or No).  
Give a reason for your answer. (2)
- 3.3.2. Oil and water do not mix. What term is used to describe this effect? (1)
- 3.3.3. If 20 cm<sup>3</sup> of oil was placed into a measuring cylinder, calculate the mass of oil used. (4)

[7]

SUB-TOTAL QUESTION 3: [20]

## QUESTION FOUR

- 4.1. Complete the following table. Write down the question number (4.1.1.- 4.1.5.) and next to each write down the answer ONLY:

ELEMENT	SYMBOL	ATOMIC NUMBER	ELECTRONS	NEUTRONS
4.1.1.	Cl	17	4.1.2.	4.1.3.
potassium	4.1.4.	19	4.1.5.	20

[5]

- 4.2. Refer to the following formula below and answer the questions that follow:



- 4.2.1. Does the above formula represent a compound or element? Based on the above formula, give a valid reason for your answer. (2)
- 4.2.2. How many molecules are represented in the above formula? (1)
- 4.2.3. NAME the elements in the above formula. (3)

[6]

4.3.1 State if each of the following represents a synthesis or decomposition reaction:





4.3.2. Write down the ratio in which the elements combine to form the following compounds:





[5]


4.4. Refer to the key of various elements given below and answer the questions.

KEY: Hydrogen - 

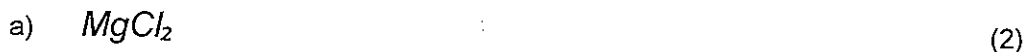
Oxygen - 

Chlorine - 

Magnesium - 

Lead - 

4.4.1. Using the key above, draw the following molecules:



4.4.2. Identify the following molecules and write down the formula using the key above.

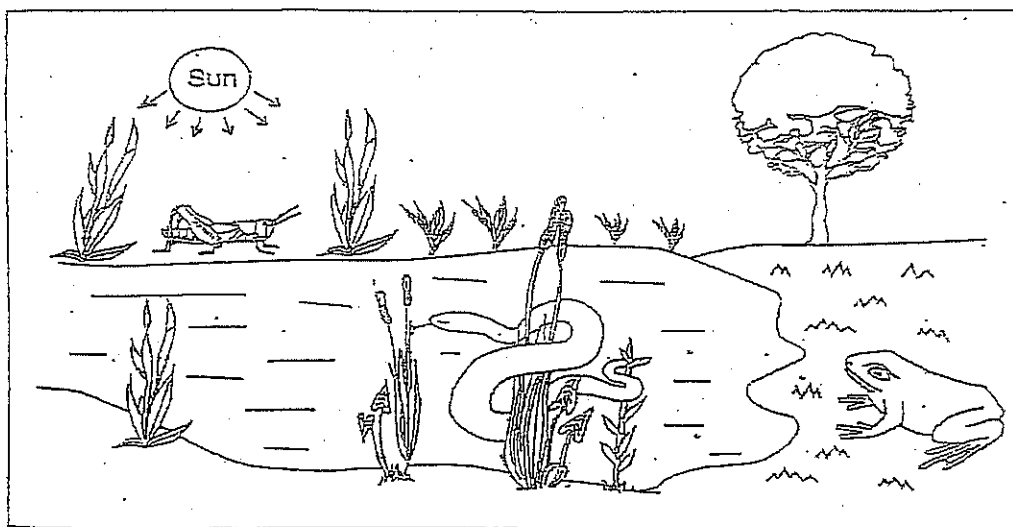


[9]

SUB-TOTAL QUESTION 4: [25]

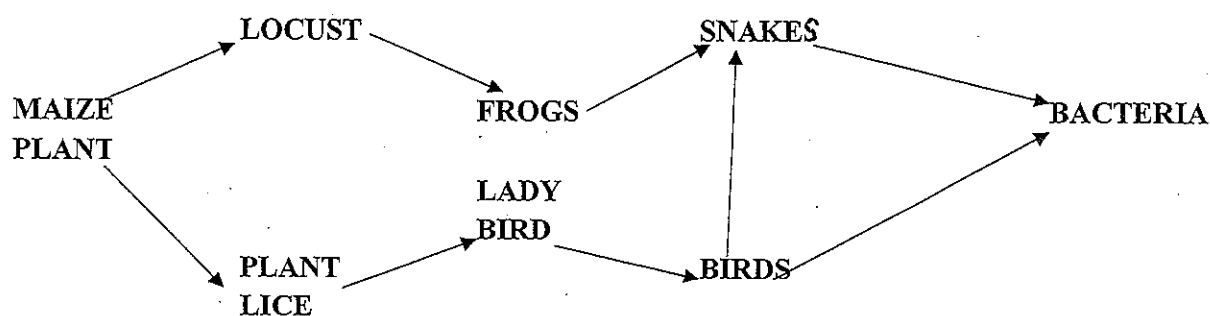
**QUESTION FIVE**

5.1. Study the following diagram and answer the questions that follow:



- 5.1.1. Define the term abiotic. (1)
- 5.1.2. Identify the following as shown in the picture above. (2)
- a) TWO abiotic factors (2)
- b) TWO biotic factors (2)
- 5.1.3. Write out the word equation for photosynthesis. (2)
- [7]**

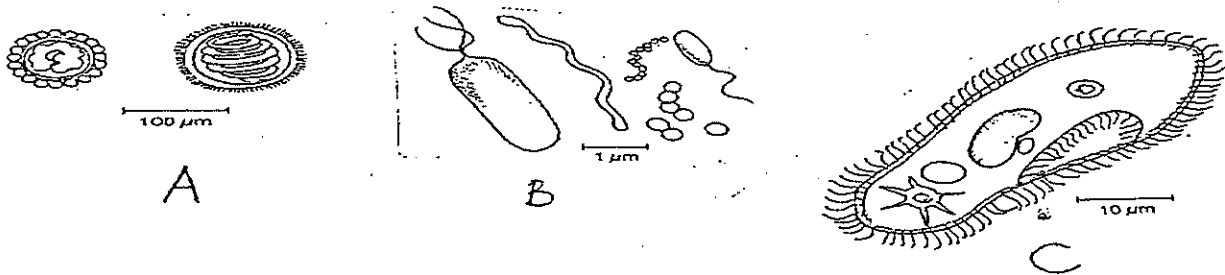
5.2. Study the food chain below and answer the questions based on it that follow:



- 5.2.1. Name the producer in this food chain and state its function in the food chain. (2)
- 5.2.2. What does a food chain represent? (1)
- 5.2.3. Name TWO insectivores in this food chain. (2)
- 5.2.4. What do the bacteria in this food chain represent and what is their function? (2)
- 5.2.5. How would the above food chain be affected if ALL the Frogs were killed? (2)

**[9]**

5.3. The pictures below represent various types of micro-organisms.



- 5.3.1. State ONE use of organism B that is NOT harmful to humans. (1)
- 5.3.2. Apart from A, B and C, name any other micro-organism that you have studied. (1)
- 5.3.3. State TWO ways in which diseases are spread by direct contact. (2)
- 5.3.4. Tabulate TWO differences between viruses and bacteria. (5)

[9]

SUB-TOTAL QUESTION 5: [25]

TOTAL SECTION B: [ 70 ]

**GRAND TOTAL: 100 MARKS**