TOM NEWBY SCHOOL EXAMINATION

Subject	**Natural Sciences**	**Examiner**	**Mrs M. Fourie and Mr M. Hudson**
Date	**15 June 2016**	**Total marks**	**100**
Session	**2**	**Duration**	**2 hours**
Grade	**7**	**Moderator**	**Mrs M. Fourie**
Special instructions/ Equipment	**None**		

This Exam has been compiled using notes and information contained in the Tom Newby School book. The marking memorandum has been compiled accordingly. While alternative responses will be given due acknowledgement, the official memorandum will be considered a priority document to ensure uniformity of marking. Up to 10% of the total mark allocation may be deducted for spelling and grammatical errors, except in the case of Language papers, where deductions are made according to a memorandum.

INSTRUCTIONS:

1. **Answer all questions on the A-4 lined paper provided.**
2. **Read all the questions carefully before you start writing.**
3. **Rule off after each question/ section.**
4. **Look carefully at the mark allocation.**
5. **Set out your work very neatly.**
6. **Think before you INK! Do your best and good luck.**

SECTION A – QUESTION 1- FILL IN THE MISSING WORDS (5)
Fill in the missing word/s in the sentences that follow.

1.1 The periodic Table of Elements is a _____ system that is presented as a table or a chart.
1.2 The part of a flower that contains the ovules is called the _____.
1.3 A device or method that is used to prevent pregnancy is _____.
1.4 Plants that produce flowers are _____.
1.5 All of the living things in a particular place and their interactions with one another is called the _____. (5)

QUESTION 2 – CORRECT SCIENTIFIC TERMS (5)

Give the correct scientific term for each of the following.

2.1 Organisms that feed on dead plants and animals are _____.
2.2 A process of change from an immature form to an adult form that differs in appearance is called a _____.

2.3 A characteristic that enables a living thing to survive in its environment is called _____.
2.4 A very good conductor of electricity, as it can be shaped into wires and it is cheap, is called _____.
2.5 The temperature at which liquid boils and turns into a gas is called the _____. (5)

QUESTION 3 –MATCH THE COLUMNS (5)
Match Column A with the correct answer in Column B. Write only the letter next to the correct number, e.g. 1 C

COLUMN A	**COLUMN B**
3.1 Excretion	**A** Makes up 78% of the atmosphere. Produces protein.
3.2 Mixture	**B** Protozoa, which help to break down dead organic matter.
3.3 Nitrogen	**C** An impure substance made out of different physical properties.
3.4 Variation	**D** The differences between the living things of a same species.
3.5 Micro-Organism	**E** Getting rid of waste products.
	F A diverse range of animals.
	G A gas in the air that we breathe in.

3.1 _____ 3.2 _____ 3.3 _____ 3.4 _____ 3.5 _____ (5)

QUESTION 4 –EXPERIMENT QUESTIONS (19)

4.1 Look at the images above. It is a picture of a Bunsen Burner. Water is being heated up by the Bunsen Burner. Answer the questions based on the picture.

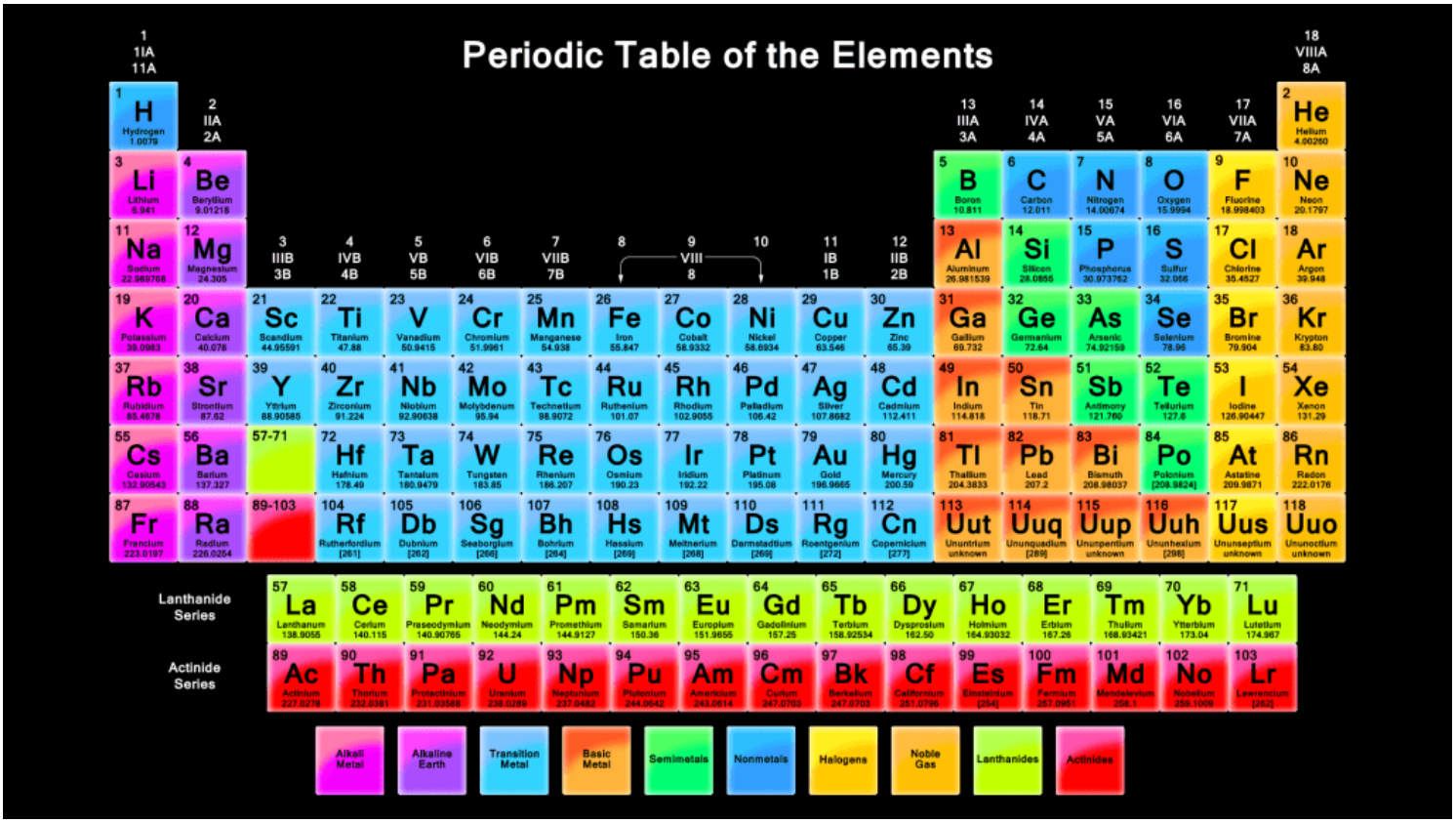
4.1.1 Explain what the term boiling point means. (1)

4.1.2 At what temperature does water boil? (1)

4.1.3 What is the change of state that takes place when water boils? (1)

4.1.4 Ethanol has a lower boiling point than water. What is Ethanol? Suggest a method of separation you would use to separate a mixture of Ethanol and water. (2)

4.2 Use the Image of the Periodic table to answer the following questions.



4.2.1 Look at the left side of the periodic table and find number 3. Give the name of the element in figure 3. (1)

4.2.2 Is this element a metal, semi-metal or non-metal? (1)

4.2.3 Write down a name of an element in the same group as this element. (1)

4.2.4 What is the elements atomic number? (1)

4.2.5 Write down the name of a semi-metal in the same period as this element.
(1)

4.2.6 Write down the symbol for the element sodium. (1)

4.2.7 Is oxygen a non-metal? Why do you say so? (1)

4.2.8 State whether the following elements are metals, semi-metals or non-metals? (5)

a) hydrogen
b) phosphorous
c) helium
d) magnesium
e) silicon

4.2.9 Give the symbol for the following elements: (2)

a) Potassium
b) Chlorine

QUESTION 5 -TRUE OR FALSE (10)

Say whether the following statements are TRUE or FALSE. If FALSE, correct it to make it TRUE.

5.1 Metals are arranged in the middle and on the right –hand side of the periodic table.

5.2 Silicon is a semi-metal.

5.3 Acid tastes sour and feel slippery on the skin.

5.4 Bicarbonate of Soda is used in making soup.

5.5 Examples of neutral substances include pure water, salt solution, sugar solution and cooking oil.

5.6 An example of an inherited characteristic is a tattoo or dyed hair.

QUESTION 6- TABLE INFORMATION (4)

Look at the table below and answer the questions related to the information given in the table.

VARIATION	DARK HAIR	FAIR HAIR	TONGUE ROLLER	NON-TONGUE ROLLER
GIRLS	14	7	12	6
BOYS	8	6	10	7

6.1 Which is the most common, tongue rolling or non-tongue rolling? (1)

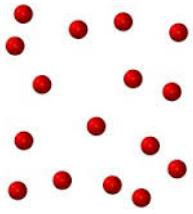
6.2 Which hair colour is the least common? (1)
6.3 How could the results achieved in this investigation be improved? Give two reasons. (2)

QUESTION 7- ACIDS AND BASES (10)
Answer the short questions below.
7.1 A base that can dissolve in water is called (1)
7.2 Name any citrus fruits that we have learnt about. (1)
7.3 Describe the taste of these citrus fruits. (1)
7.4 Are citrus fruit acidic or base? (1)
7.5 Give a name of the acid or base that we find in citrus fruit. (1)
7.6 Describe how you would separate and collect all the materials from a mixture of play-sand, Smarties, iron filings, salt and water. List the steps you will use and write it in bullet point form. (5)

QUESTION 8- FILL IN MISSING ONE WORD ANSWERS (10)
8.1 Give one word that summarises what each of the following spheres contain.
a) Hydrosphere
b) Atmosphere
c) Litosphere
(3)
8.2 Living _____ are grouped or ____ to make it easier to _____ them. Biologists group living organisms according to their _____characteristics. (4)
8.3 The brightly coloured parts of a flower are called the _____ (1)
8.4 A _____ is an unborn baby that is still developing inside the female's body. (1)
8.5 _____ is the process when a seed starts to grow. (1)

QUESTION 9- LONGER QUESTIONS AND EXPLANATIONS (14)
9.1 Look at the following images. Say whether they have loose or tight particles
Gold nuggets _____ Particles Water in a tap _____Particles (2)



9.2 What is a pure substance? (1)
9.3 Give a definition of a mixture? (1)
9.4 Give a definition of ink chromatography. (2)
9.5 If we send a forensic scientist to a crime scene, what are they able to find to catch a criminal? (2)
9.6 The line along which all of the samples of ink were placed was drawn in pencil. Explain why it was in pencil. (2)
9.7 What is a solvent? What solvent did we show you when looking at Ink chromatography? (2)
9.8 What is a pigment? (2)

QUESTION 10 HUMAN REPRODUCTION QUESTIONS (10)

10.1 For how many months is a woman pregnant? (1)

10.2 What do we call the first trimester or stage of pregnancy? (1)

10.3 How many male sperm cells are needed to fertilise an egg in a female's body? (1)

10.4 What do we call the cycle when a girl starts to have monthly periods? (1)

10.5 A Grade 7 learner was trying to explain the process of the human reproduction cycle, but he muddled up the order of the cycle.
Re-arrange the following by merely writing the correct order of the alphabet letters. (6)

A. The sperm arrive in the oviduct.
B. During sexual intercourse the sperm is propelled from the penis.
C. One sperm enters the outer cover of the egg to fertilise it.
D. The fertilised egg is implanted in the uterine lining.
E. The sperm travel from the vagina, through the uterus to the oviduct.
F. The egg is released from the ovaries and travel along the oviduct.

QUESTION 11- RECYCLING PARAGRAPH (8)

Read the passage below and answer the questions that follow.

Plastic is an amazing material. It is inexpensive, strong and lightweight, and can resist damage by chemicals and sunlight. Plastics can replace natural materials such as ivory and wood. They help make cars and aeroplanes lighter, and thus more fuel. Their heat insulating properties help save a lot of energy that would otherwise be used for heating or cooling. Plastics have become very important material in our modern lives.

Plastics are manufactured from fossil fuels. Eight percent (8%) of world oil production goes into manufacturing plastics. The process of obtaining oil and processing it impacts the environment, for example, oil spills from drilling and from huge oil tanker ships.

Plastics lasts a very long time, but we usually use plastic objects only once or twice before throwing them away. Harmful chemicals added to plastics are absorbed by human bodies and can significantly affect our health. Plastic waste is sometimes swallowed by marine animals like turtles, dolphins and whales, and can injure or poison wildlife. Harmful chemicals from plastic buried.

11.1 Why do we say plastic is an amazing material? (2)

11.2 Name two useful things of plastic products. (2)

11.3 Name two harmful things about plastics. (2)

11.4 Give a definition of recycling. What can be recycled? (2)

Total: 100