TOM NEWBY SCHOOL EXAMINATION

Subject	**Natural Sciences**	**Examiner**	**Mrs Fourie / Mr Hudson**
Date	**22 June 2017**	**Total marks**	**100**
Session	**1**	**Duration**	**2 hours**
Grade	**7**	**Moderator**	**Mrs Fourie**
Special instructions/ Equipment	**1. Read ALL questions carefully before you start writing.** **2. Answer all questions and rule off after each question.** **3. Look carefully at the mark allocation.** **4. Think before you INK!**		
This assessment has been compiled using notes and information contained in the Tom Newby School resource material. 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.			

Name: Memorandum	Surname:	Class:

QUESTION 1: Match the columns

Match the statement in Column A with the term in Column B. Write only the number and letter you choose, e.g. 1C **(10)**

COLUMN A	COLUMN B
1. Male part of a flower, made up of the anther and a filament. 2. Plants that produce cones. 3. Bees, water, wind and animals can pollinate flowers and plants. They are called … 4. Cold-blooded, aquatic organisms that live in fresh/salt water. 5. A group of organisms usually covered with scales. 6. An impure substance made out of different physical properties. 7. Animals that have a backbone are called… 8. A very good conductor of electricity, it can be shaped into wires. 9. A good thermal insulator and it can be wrapped around food. 10. Used in small amounts in jewellery, electronics and photography	A. Concrete B. Reptiles C. Stamen D. Silver E. Amphibian F. Solution G. Newspaper H. Pollinators I. Vertebrates J. Fish K. Angiosperms L. Gold M. Mixtures N. Copper O. Gymnosperms

1 C 2 P 3 H 4 K 5 B

6 N 7 I 8 O 9 G 10 D

(10)

<u>QUESTION 2:</u> Identify Images **(10)**

Look at the images of different kinds of dogs.

1. Identify two similarities between the dogs. (2)

   A tail, 2 ears, a nose, 2 eyes, 4 legs, 4 paws, teeth, a mouth.

2. Identify two differences between the dogs. (2)

   Different breeds, smaller and larger sizes, different names, length of fur is different.

3. What are these differences known as? (2)

   Variation

4. Explain why dogs are said to belong to the same species. (2)

   They mate and they produce young of the same breed of dogs.

5. Write a few sentences to explain why children look like their parents, but are not identical to their parents. (3)

   Children inherit characteristics from both parents. These mixed characteristics are passed down from grandparents, family members and their parents, e.g. eye colour, facial expressions, the way they walk or talk, dimples in cheeks.

<u>QUESTION 3:</u> Properties of materials lists **(16)**

1. Look at the list of materials. Identify which one is most suitable for each of the tasks given below:

TASKS	MATERIALS
1.Making a water bottle 2.Putting insulation between a mattress and the floor. 3.Building a wall 4.Wrapping a sandwich 5.Making a frying pan	a. Concrete b. Steel c. Foil d. Hard Plastic e. Copper f. Plastic cling wrap g. Soft plastic

1. Hard plastic
2. Newspaper
3. Concrete
4. Plastic cling wrap/ Foil
5. Steel

5. Pretend that you are performing an experiment to determine the boiling point of:

   Water, orange juice and milk

   a) What does the term boiling point mean? (2)

   The temperature at which a liquid boils and turns into a gas.

   b) What temperature does water boil at? (1)

   100˚C

   c) At what temperature do you think orange juice and milk will boil? Why? (2)

   Orange juice will boil at 100˚C and milk will also boil at 100˚C. These substances are also liquids and parts of these are primarily water.

   d) What do you think is the dependent variable in the experiment?(1)

   The boiling point of the liquid or that all 3 substances are liquids.

6. a) What is a solution? (2)

It is a mixture which means that 2 substances are mixed together to create a mixture.

b) When you want to separate pebbles, paper clips and gemstones, what separation methods would you use? Explain. (2)

Hand sorting. Pick out the pebbles and the gemstones and sort them into groups. Use a magnet to pick up the paper clips.

c) What is the method used when the grains of one substance is larger than the other? (1)

Sieving

4. Look at the list below and identify which mixtures are classified as a liquid, a solid or a gas. Only write liquid, solid or gas next to letter.

a. Coca Cola can (1)

A liquid

b. Diluted Dettol (1)

A liquid

c. Alloys (1)

A solid

d. Smoke from a factory (1)

A gas

e. Steam from a kettle (1)

A gas

QUESTION 4: Choose the correct answer

In each question/statement, choose the correct answer from the alternatives given. Write only the letter next to the relevant number.

1. The best method to separate a mixture of sand and iron nails is…
   a) Evaporation
   b) Sieving
   c) Magnetism
   d) Filtration

2. All of life on Earth exists in an area known as the ...
   a) Atmosphere
   b) Biosphere
   c) Lithosphere
   d) Hydrosphere
3. During respiration …
   a) Growth occurs
   b) Energy is needed
   c) Food is produced
   d) Energy is released
4. A semi-metal is a …
   a) A substance with no qualities of non-metals.
   b) Substance with properties of both metals and non-metals.
   c) Substance with no properties of a metal.
   d) None of the above.
5. STD stands for …
   a) Sexually transmitted disease
   b) Stop testing for drugs
   c) Standard tube delivery
   d) Standard testing for diseases. (5)

QUESTION 5: Acids, bases and neutrals – True/False (17)

1. When you put an acid between your fingers and rub them together, it feels rough and does not slide smoothly. (1)
   True
2. Bases that are alkali are soluble in water. (1)
   True.
3. Acid will make red litmus paper stay red. (1)

True

4. A base will make blue litmus paper turn blue. (1)

   True

5. The pH scale measures how weak an acid or a base is. (1)

   False. It shows how strong it is.

6. A substance ranging from just above 7 to 14, is classified as a base. (1)

   True

7. Many acids are dangerous because they are corrosive, which means they can burn the skin easily. (1)
8. Household bases include washing powder, and, toothpaste, as well as hand soaps. (2)
9. What do we use to test if a substance is an acid or a base? indicator(1)
10. What does acid reflux mean and what causes it? (2)

    A digestive disease in which stomach acids irritates the food pipe lining because of spicy foods and acid flows backwards from the stomach to the oesophagus causing discomfort.

11. Name 3 properties of acids and name 2 properties of bases. (5)

Acids are corrosive, which means they can burn the skin.

Acids can be strong or weak.

Acids are contained in foods like vinegar, sour milk, fruits.

Acids generally have a sour taste.

Bases are the opposite of acids.

Bases are found in soaps, baking soda and they generally tatse bitter and have a soft or soapy feel.

Not all bases dissolve in water.

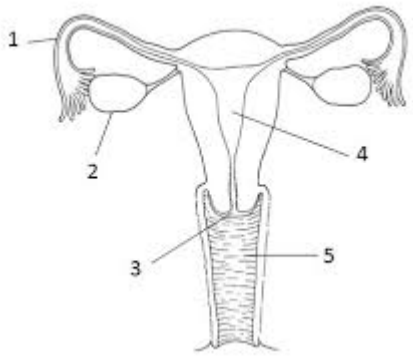
Bases that do dissolve in water are called alkalis.

<u>QUESTION 6:</u> Human reproduction – Short Questions (10)

1. Study the diagram of the female reproductive system.

Provide labels for 1-4. Number 5 is the cervix. (4)

1. Fallopian tube
2. Ovary
3. Uterus
4. Vagina



2. The male reproductive organ is situated externally. (1)
3. What does the penis transport? (1)

   Semen
4. What is the part called that makes millions of sperm cells? (1)

   Testis
5. A fertilised egg inside a woman's womb, becomes an embryo and after 8 weeks, it is referred to as a foetus. (1)
6. What cancer can a male person get because of the prostate gland? (1)

   Prostate cancer
7. Give your own definition of puberty. (1)

   Human development stages or when the body starts changing and become more mature, e.g. when a child becomes a teenager ate the ages from 7-13 years.

<u>QUESTION 7:</u> Analysing pictures **(10)**

Look at the following images. Fill in the missing answers.

Picture A

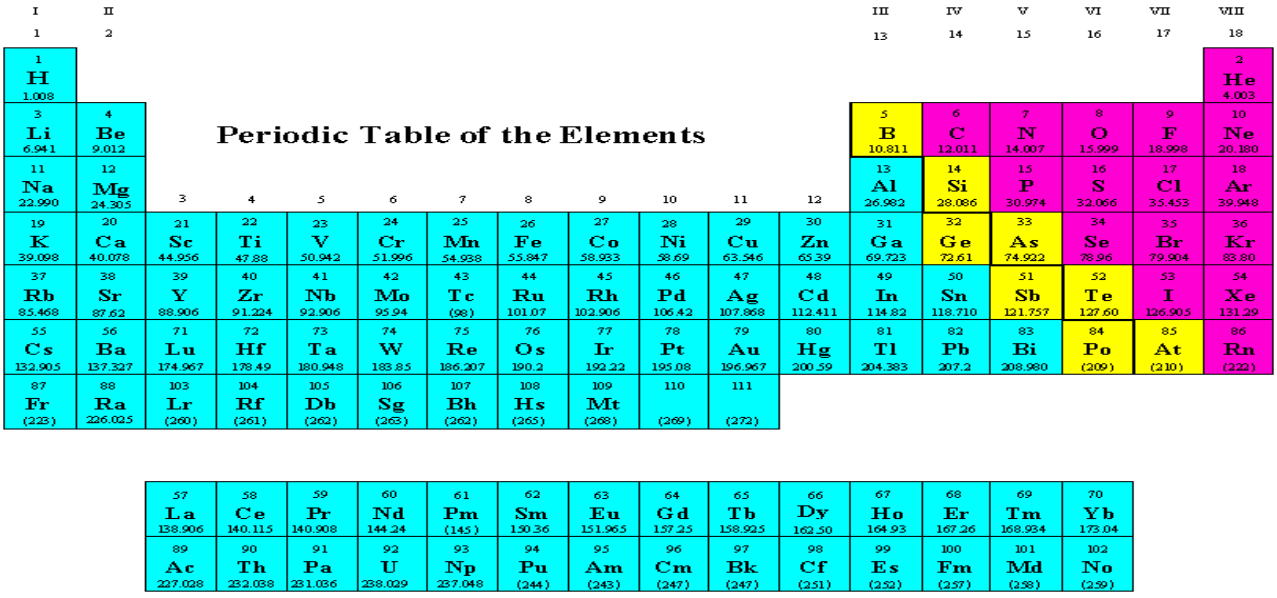
1. What is the animal in picture A? A bullfrog
2. Phylum Vertebrates
3. Class Amphibian
4. Respiration method: They breathe through lungs and gills
5. Movement Webbed feet, swims, jumps, hops
6. Warm or cold-blooded Cold blooded
7. Reproduction method Lays eggs (5)

Picture B

1. What is the animal in picture B? A leopard
2. Phylum Vertebrates
3. Class Mammals
4. Respiration method: They breathe through their lungs
5. Movement Limbs, running, climbing
6. Warm or cold-blooded Warm blooded
7. Reproduction method Live young (5)

QUESTION 8: Periodic table information

Use the image of the periodic table to answer the following questions:



1. Look on the right side of the periodic table. Find number 2. Give the name of the element in 2. (1)

   Helium He

2. Where is this element often used? (1)

   In party balloons

3. Is this element a metal, semi-metal or a noble gas? (1)

   Noble gas

4. Write a name for number 20, to the left side of the periodic table.

   Calcium

5. What is this element good for? (1)

   Builds healthy bones and teeth

6. Is this element an Alkali Metal or Alkaline? (1)

   Alkaline

7. Give the symbols for the following elements:

   a) Nitrogen (1)

      N

b) Sodium (1)

Na

c) Chlorine (1)

Cl

8. Give the name for the symbol B. (1)

Boron

9. Give the name for the symbol Mg. (1)

Magnesium

10. Look at the following images. State whether it shows a metal or a non-metal or a gas or a combination and name the image. (6)

a. 

b. 

a. Metal and a pot cooking on a fire

b. Metal and gold miner mining

c. Gas inside a gas cylinder and gas bottle made of metal

c. 

TOTAL: 100