EXAMINATIONS COUNCIL OF ESWATINI
Eswatini Primary Certificate

CANDIDATE NAME

CENTRE NUMBER

CANDIDATE NUMBER

Science **513/02**
Paper 2 **2020**
1 hour 30 Minutes

Additional Materials required: Calculators may be used.

READ THESE INSTRUCTIONS FIRST

Write your name, Centre number and candidate number on the spaces provided.

Write in dark blue or black pen in the spaces provided on the Question Paper.

You may use an HB pencil for any diagrams, graphs, tables or rough working.

Do **not** use staples, paper clips, highlighters or correction fluid.

This paper consists of two sections (Section **A** and **B**).

Answer **all** questions in sections **A** and answer **one** question in section **B**.

Question	Examiner's use
Section A	
1	
2	
3	
4	
5	
Section B	
6	
7	
Total	

The number of marks is given in brackets [ ] at the end of each question or part question.

The total of the marks for this paper is 60.

This documents consists of **14** printed pages and **2** blank pages.

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For Examiner's Use

SECTION A

Answer **all** questions in this section

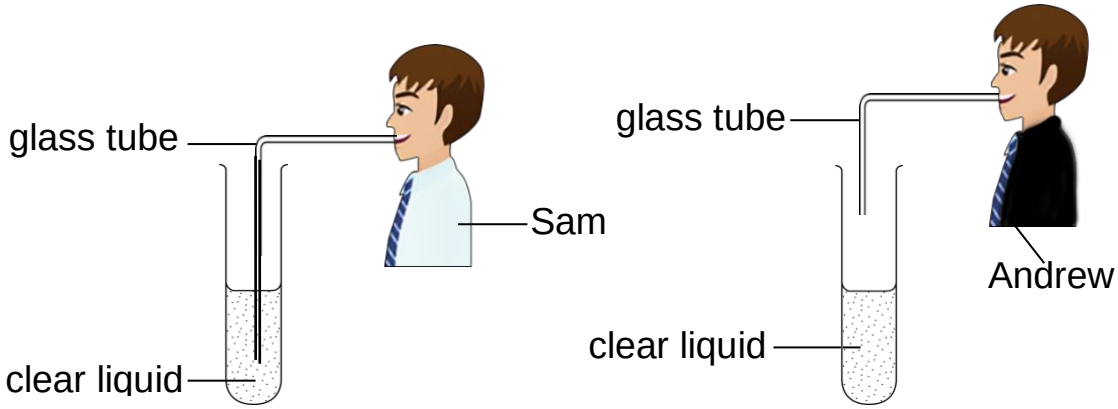
1 **(a)** Mandla uses a plate to blow air on a fire and the fire gives a bigger flame.

Name the gas that causes the flame of the fire to be bigger.

…… [1]

(b) The diagram shows an experiment to investigate the properties of air.

Sam and Andrew blow air into test-tubes containing a clear liquid.



(i) Name the clear liquid used in the experiment.

…….. [1]

(ii) The clear liquid becomes milky when Sam breathes out into the test-tube.

State what this result shows about the air we breathe out.

…….. [1]

(iii) Explain why the clear liquid for Andrew does not change when he breathes out into the test-tube.

……

…….. [1]

(c) When solid margarine is placed in the sun it changes into a liquid.

(i) Name the change of state that takes place when the margarine changes into a liquid.

…….. [1]

(ii) Describe how the margarine can be made into a solid again.

…….. [1]

(d) The diagram shows a weather report for a certain week in the year 2020.

L

M

N

(i) Interpret the weather forecast for **M**.

……..… [1]

(ii) Suggest a most suitable clothing for the weather shown by **L**.

……..... [1]

(iii) Describe **two** ways to be safe under weather condition **N**.

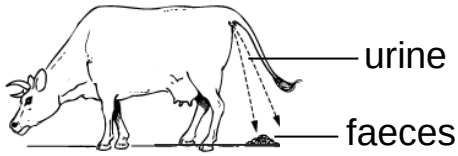
1 ……..……..

2 ……..... [2]

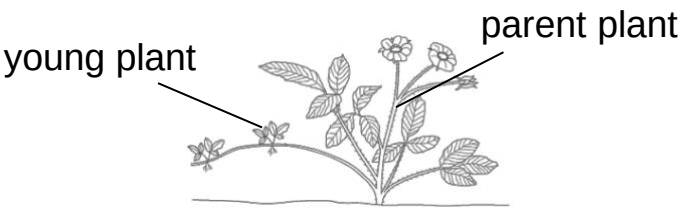
[Total: 10]

For Examiner's Use

2 The diagram shows some living organisms.



H



I

(a) State, with **two** reasons, the group of plants to which plant **I** belongs.

group ……

reasons

1 ……

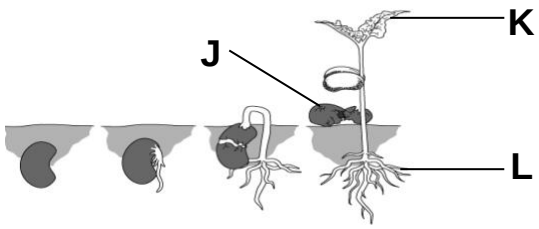
2 …… [3]

(b) State the characteristics of living things shown by the living organisms **H** and **I**.

H ……..

I …… [2]

(c) The diagram shows a bean seed that was planted and observed over 8 days.



(i) Name the structure labelled **J**.

…… [1]

(ii) State the function of the structure labelled **L**.

……..…….…… [1]

(iii) State **one** condition required for the seed to germinate.

……. [1]

(iv) Explain the effect of removing part **K** on the growth for the plant.

……..……

……..…..…

……..… [2]

[Total: 10]

For Examiner's Use

3 **(a)** Light is a form of energy.

(i) Draw a beam of light.

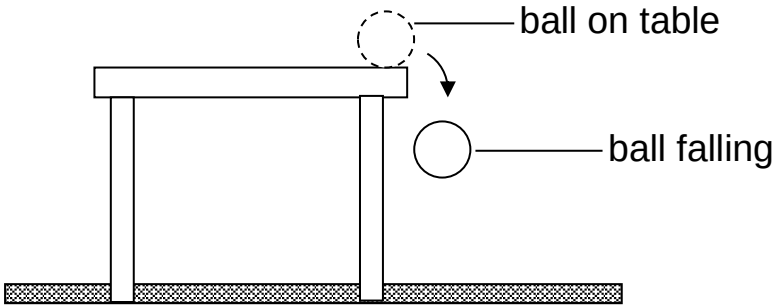
[1]

(ii) Name **two** natural sources of light.

1 ……..……..

2 …….. [2]

(b) The diagram shows a ball falling from the edge of a table.



(i) State the type of energy that the ball has when it is on the table and when it is falling.

ball on table ……..……...

ball falling ……..……..……..…… [2]

(ii) State the law of conservation of energy.

……..……..……

……..…… [1]

(c) Energy in the home should be conserved.

State **two** ways of conserving electrical energy at home.

1 ……..……..……

2 …… [2]

(d) Electrical energy can also be used to make electromagnets.

(i) State **one** use of an electromagnet.

……

……[1]

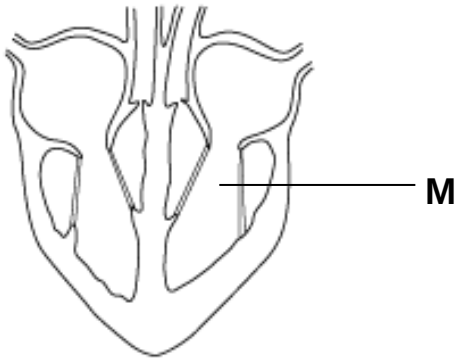
(ii) Describe **one** method of making an electromagnet weaker.

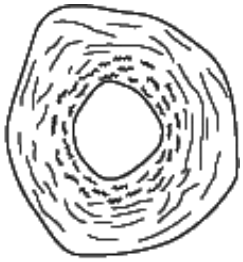
……

…… [1]

[Total: 10]

4 **(a)** The diagram shows a human heart and a cross section of a blood vessel.





blood vessel

(i) Name the part of the heart labelled **M**.

…… [1]

(ii) Describe **two** features of the blood vessel that identify it as an artery.

1……..

2……..…[2]

(b) Simo has eaten porridge and beef.

(i) Arrange the following parts in the order in which the food will travel along the alimentary canal.

stomach	**gullet**	**large intestine**	**small intestines**

1……

2……

3……

4…….. [2]

(ii) Name the end product for the digestion of the beef.

…… [1]

(iii) Describe what happens to the food after it is digested.

……...

……

……..... [2]

(iv) State a nutrient lacking in Simo's diet that is needed for a healthy skeleton.

…… [1]

(v) Suggest a food substance that can be added to Simo's meal to make it balanced.

…… [1]

[Total: 10]

For Examiner's Use

5 **(a)** Changes can be classified as chemical or physical.

(i) Explain why the change of milk to sour milk is a chemical change.

……

……

…… [2]

(ii) Describe how you would use a universal indicator paper to classify sour milk.

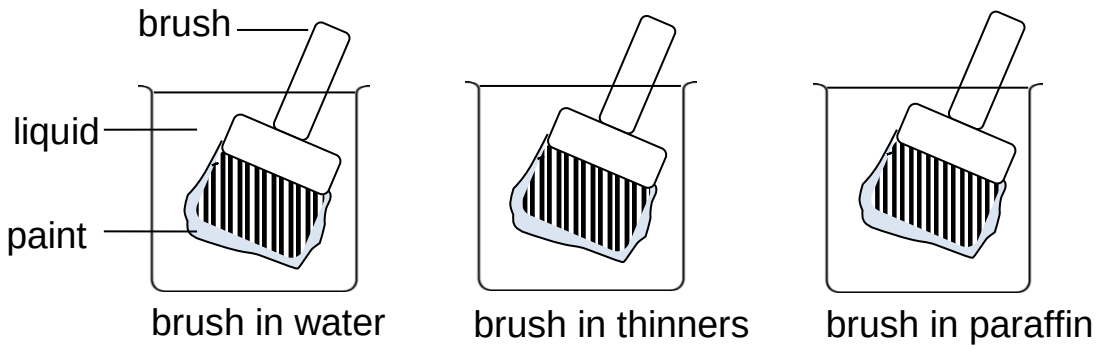
……

……

……

…… [3]

(b) The diagram shows paint brushes soaked in different liquids.



The table shows observations made after 10 minutes.

	observations after 10 minutes
brush in water	paint not removed
brush in thinners	all paint removed
brush in paraffin	less paint removed

(i) Define the term *solvent*.

……

..... [2]

(ii) Identify the best solvent for the paint.

…… [1]

(iii) Name the mixture formed by the paint and thinners.

…… [1]

(iv) Name a method used to separate a mixture of salt and water to obtain both the salt and the water.

……[1]

[Total: 10]

For Examiner's Use

SECTION B

Answer only **one** question from this section.

6 **(a)** The diagram shows some instruments found in a school's weather station.

N

O

P

(i) Name the instrument labelled **N**.

…… [1]

(ii) State the function of instrument **O**.

…… [1]

(iii) Explain why instrument **P** is placed on grass instead of a concrete floor.

……

……

…… [2]

(b) **(i)** Using the apparatus in the box below, describe how you would make a simple electromagnet.

steel rod	**cell**	
	conducting wires	**pins**

……

……

……

……

……

……

……

……[4]

(ii) Describe how you would test if the electromagnet had been successfully made.

……

……

…… [2]

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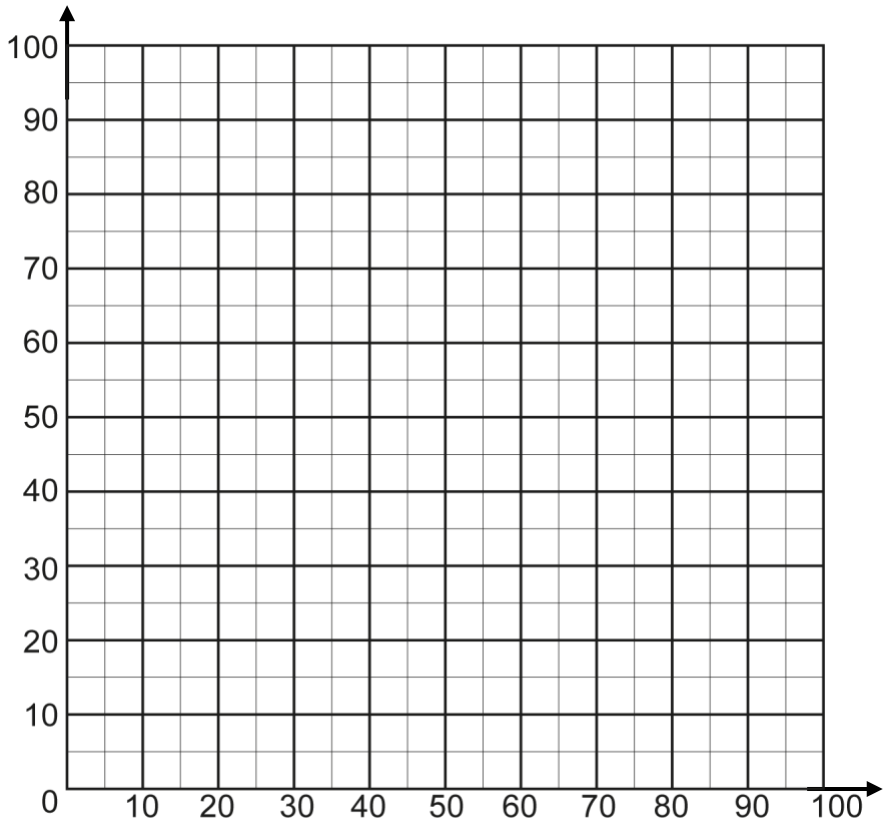
7 **(a)** A Grade 7 class carries out an experiment using boiling water to find the rate at which the water cools.

The results of the experiment are shown in the table below.

time/min	0	10	20	30	40	50	60
temperature/^{o}C	100	90	80	70	60	50	40

(i) Use the information in the table to draw a graph of temperature against the time.



[3]

(ii) State the temperature of the water at 35 minutes using the graph.

…… [1]

(iii) Name the instrument used by the class to measure the temperature of the water.

…… [1]

(iv) State what the graph tells us about the rate at which the water cools between the temperatures 100 °C and 40 °C.

……

…… [1]

(b) (i) In another experiment the pupils blow air into two balloons.

They then rub the balloons against a dry jersey for a few seconds.

Suggest and explain what the pupils observe when the balloons are brought closer to each other.

observation……

explanation ……

…… [2]

(ii) The rubbing of the balloons with the dry jersey produces static electricity.

State the difference between static and current electricity.

……

…… [2]

[Total: 10]

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