



EXAMINATIONS COUNCIL OF ESWATINI
Eswatini Primary Certificate

CANDIDATE
NAME

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CENTRE
NUMBER

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CANDIDATE
NUMBER

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SCIENCE

513/02

Paper 2

For examination from 2025 - 2027

SPECIMEN

1 hour 30 minutes

Candidates answer on the Question Paper.

No additional materials are required.

READ THESE INSTRUCTIONS FIRST

Write your name, centre number and candidate number in the spaces provided.

Write in dark blue or black ink 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.

There are **two** sections: **Section A** and **Section B**

Answer **all** questions.

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.

<i>For Examiner's Use</i>	
Section A	
1	
2	
3	
4	
Section B	
5	
6	
Total	

This document consists of **13** printed pages and **3** blank pages.

Section A

1 (a) Living organisms use senses to observe their environment.

(i) Name the sense organ that responds to light.

..... [1]

(ii) State the stimulus detected when a mosquito bites a person.

..... [1]

(b) Animals can be classified into vertebrates and invertebrates.

(i) State a feature that is common in all vertebrates.

..... [1]

(ii) Table 1.1 shows classes of vertebrates and their characteristic features.

Using a line, match the characteristic feature to the class of vertebrates they describe.

One has been done for you.

Table 1.1

description

class of vertebrates

lives in water.
body is covered in scales.

mammal

body is covered in fur.
gives birth to live young ones.

reptile

lives both on land and in water.
lays eggs in water

fish

lays eggs on land.
body is covered with scales

amphibian

birds

[3]

(iii) Dogs and birds are warm blooded animals.

State what this means about their body temperature.

..... [1]

(c) Some vertebrates such as the white rhino are said to be endangered.

State **one** way by which the white rhino can be protected.

..... [1]

(d) Fig. 1.1 shows an invertebrate.

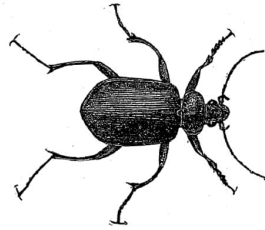


Fig. 1.1

State **two** observable characteristics of the invertebrate in Fig.1.1 that show it as an invertebrate.

1

2 [2]

[Total: 10]

2 (a) Fig. 2.1 shows two magnets facing each other.



Fig. 2.1

(i) State the type of magnetic force demonstrated by the two magnets.

..... [1]

(ii) State the effect of bringing the north poles closer together.

..... [1]

(iii) Circle **two** magnetic substances in the box. [2]

shoe nails copper-door-handle tone needle

(b) A student has pair of shoes that are slippery.

Fig. 2.2 shows one of the shoes.

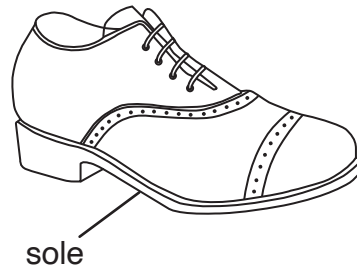


Fig. 2.2

State **one** improvement you can make to make the shoe less slippery.

..... [1]

(c) Fig. 2.3 shows two match boxes **A** and **B** with different striking surfaces.

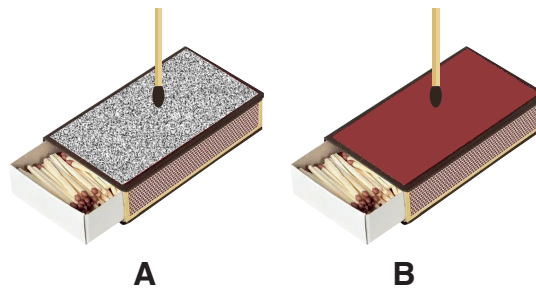


Fig. 2.3

(i) Using Fig. 2.3, state and explain which surface provides more friction.

.....
.....
..... [2]

(ii) Describe an advantage of having more friction on the match box.

.....
..... [2]

(d) Describe the difference between the frictional force and the force of gravity.

.....
.....
..... [2]

[Total: 10]

3 Water is a natural resource

(a) Fig. 3.1 shows a plastic bag filled with water.



Fig. 3.1

(i) Name the state of matter for the water in Fig. 3.1.

..... [1]

(ii) Describe the shape and volume of water.

shape.....

volume.....

[2]

(b) A student puts the plastic bag in a refrigerator to make an ice.

(i) Name the process by which the water changes into ice.

..... [1]

(ii) Explain why the process you named in (i) is a physical change.

.....

.....

..... [2]

(c) Soil is another natural resource.

(i) Name the type of soil that has the largest particle size.

..... [1]

(ii) Describe the texture of clay soil.

.....

..... [1]

- (d) In an experiment to investigate a property of soil, a student puts sandy soil into a beaker then adds water.

Fig. 3.2. shows the observations made by the student.

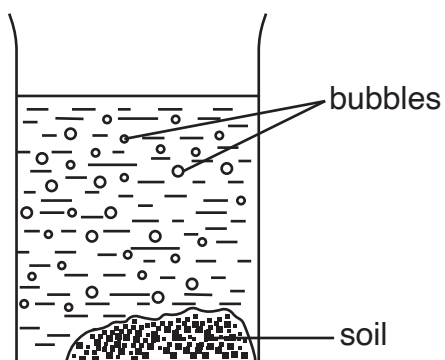


Fig. 3.2

The student repeats the investigation using clay soil instead of sandy soil.

Sketch a similar diagram to Fig. 3.2 to show the differences that will be observed if clay soil is used.

[2]

[Total: 10]

4 Fig. 4.1 shows an insect pollinated flower.

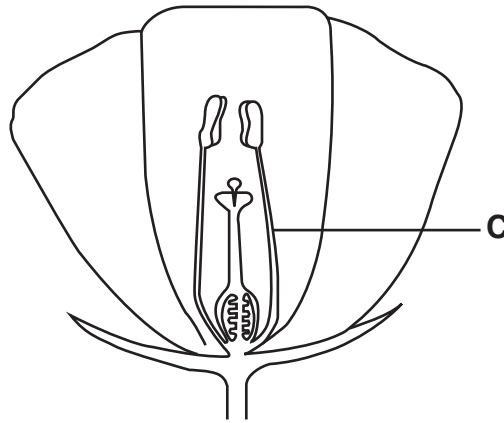


Fig. 4.1

(i) Name the part labelled **C** on Fig. 4.1.

..... [1]

(ii) Name the part of the flower in Fig. 4.1 on which pollen grain is found after pollination.

..... [1]

(b) Seed dispersal occurs in different ways for different plants.

Fig. 4.2 shows a type of fruit.



Fig. 4.2

(i) Name the type of seed dispersal suitable for the fruit in Fig. 4.2.

..... [1]

(ii) State **two** reasons why it is important for seeds to be dispersed from their parent plants.

.....
..... [2]

(c) Plants grow well on planet Earth of the solar system.

Fig. 4.3 shows the Earth with the rays of the Sun.

The Southern Hemisphere is facing towards the Sun.

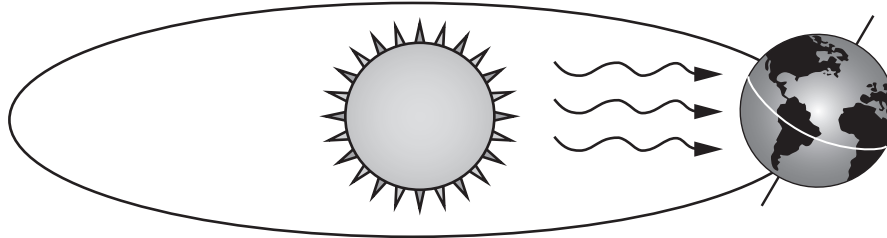


Fig. 4.3

(i) State the season shown in the Southern Hemisphere.

..... [1]

(ii) Draw an arrow, in Fig. 4.3, to show the direction of movement of the Earth around the Sun. [1]

(iii) Name the type of movement shown in Fig. 4.3, and state its duration.

type of movement.....

duration.....

[2]

(d) The Earth has a Moon.

State **one** substance found on the surface of the Moon.

..... [1]

(e) The planets Neptune, Venus and Saturn are part of the solar system.

Arrange the planets Neptune, Venus and Saturn in order of size starting with the smallest.

..... [1]

[Total: 10]

Section B

Answer **all** questions

- 5 (a) A student determines the volume of a potato for making chips. Fig. 5.1 shows the materials the student uses to determine the volume of the potato.

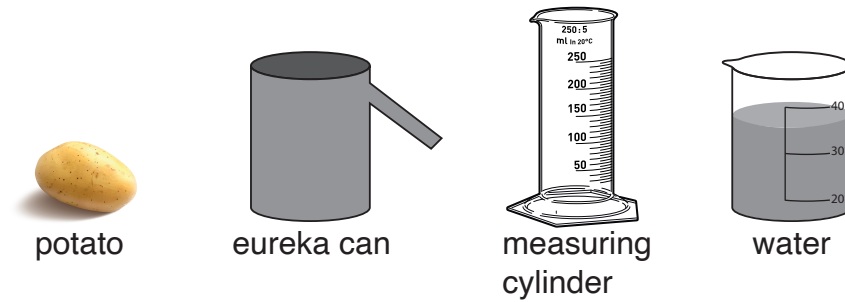


Fig. 5.1

- (i) Describe how the student can measure the volume of the potato using all the materials provided.

.....
.....
.....
.....
.....
.....
..... [3]

- (ii) State **one** precaution the student takes when measuring the volume of the potato.

.....
..... [1]

- (iii) Suggest an improvement in the experiment, that would make the results more accurate.

.....
..... [1]

- (b) Another student carries out an experiment to determine the solubility of the solids, chalk powder, salt and sand using the apparatus in Fig. 5.2.

The student:

Step 1: puts each chalk powder in a beaker

Step 2: adds water and stirs the mixture

Step 3: records the results in Table 5.1.

Step 4: repeats step 1 to 3 with the sand

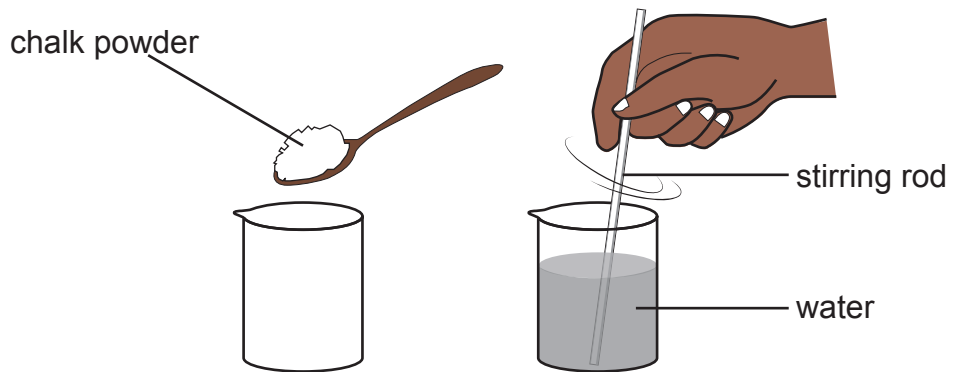


Fig. 5.2

Table 5.1

solid	observation	conclusion
Salt	dissolves	soluble
chalk powder		
sand		

- (i) Complete Table 5.1, by writing the observation and conclusion for chalk powder and sand. [2]

- (ii) In another experiment, the student then adds slaked lime to the water and it dissolves slowly after stirring.

Suggest how the student can make the slaked lime to dissolve faster in the water.

.....
 [1]

(iii) The student wants to separate the salt from the salt solution in Table 5.1.

Describe how the student can obtain the salt from the salt solution.

.....
.....
..... [2]

[Total: 10]

6 Germination is one of the stages in the life cycle of a flowering plant.

(a) Fig. 6.1 shows a set-up used by a student to investigate the factors that are necessary for germination of seeds to occur.

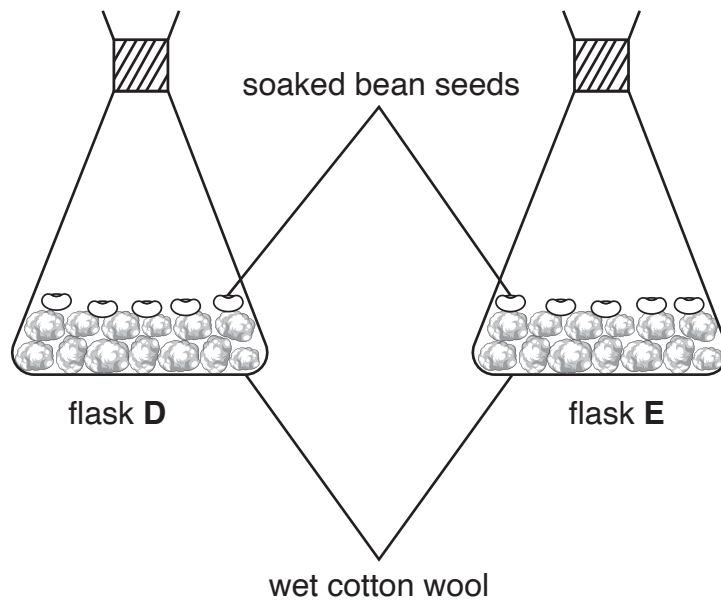


Fig. 6.1

The student puts flask D into a refrigerator and leaves flask E at room temperature.

(i) State the function of the wet cotton wool in Fig. 6.1.

..... [1]

(ii) State the observations made in the **two** containers after 12 days.

D

E [2]

(iii) State a conclusion, the student draws from the experiment.

..... [1]

(iv) In another experiment, the student investigates if oxygen is necessary for germination.

Describe how the student carries out the investigation.

.....

.....

.....

..... [2]

(b) Another student investigates the life cycle of a butterfly for 20 days.

Fig. 6.2 shows the changes the student observes.

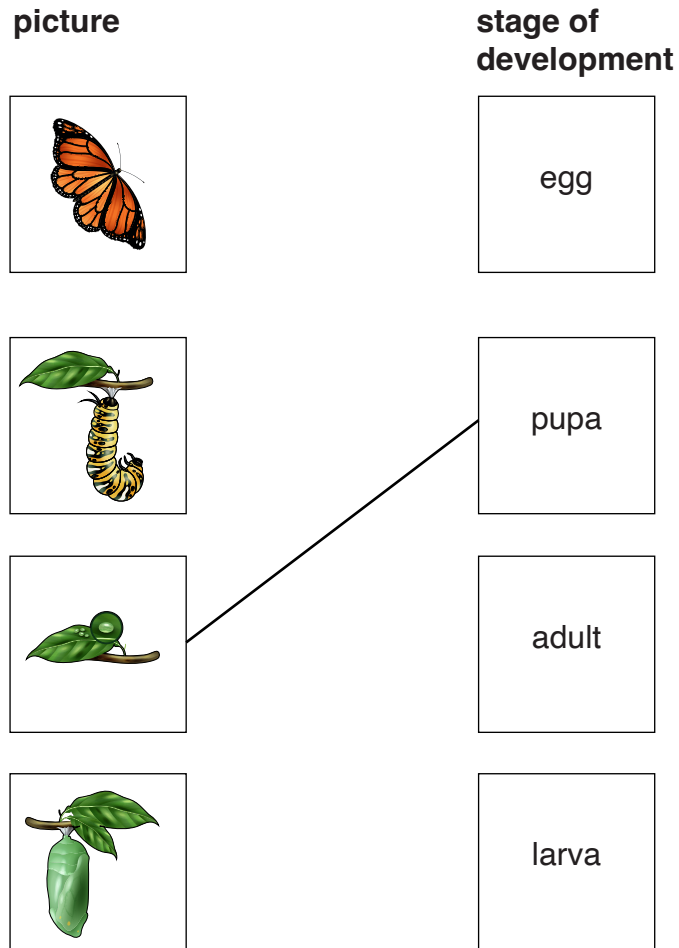


Fig. 6.2

(i) Match, using a line, each picture to the stage of development.

One has been done for you.

[2]

- (ii) The student observes the external features of the butterfly in Fig. 6.1 and concludes that it is an insect.

State, using observable features, two reasons why is the butterfly an insect.

.....

..... [2]

[Total: 10]

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