

SECONDARY SCHOOLS ANNUAL EXAMINATIONS 2002

Educational Assessment Unit – Education Division

FORM 2

INTEGRATED SCIENCE

Time 1hr 30 min

Name _____

Class _____

ANSWER ALL QUESTIONS

- 1) These 4 drawings show stages in the **formation of soil**.
The pictures are **not** in the correct order.



A



B



C



D

- a) Write down the letters of the drawings in the correct order. _____

4 marks

Tick (✓) one correct answer in each of the questions b) and c).

- b) Which of the following things describe what is happening in picture **D**.

Pollution

Drought

Weathering

Strong wind

1 mark

- c) What is happening to the bird in picture **B**?

It is hibernating.

It is decaying.

It is resting.

It is hiding.

1 mark

2) **Magnesium** is a metal.

When we heat magnesium, it burns with a bright, white flame.

A white powder is left at the end. This is called **magnesium oxide**.

a) Give **2** ways that we can tell a **new** substance has been made.

2 marks

b) i) Is **magnesium** an **element**? _____

1 mark

ii) Explain your answer. _____

1 mark

c) i) Is **magnesium oxide** an **element**? _____

1 mark

ii) Explain your answer? _____

1 mark

3) The table below shows the **pH** value of five soil samples.

Soil Sample	pH of soil
A	6
B	9
C	7
D	4
E	8

a) Which soil sample is **neutral**? _____

1 mark

b) Heathers grow better in **acidic** soil.

In which of the soil samples should heathers grow well? _____

2 marks

c) Cabbages grow better in **alkaline** soil.

In which soil samples should cabbages grow well? _____

2 marks

d) Lime is an **alkali**. It is sometimes mixed with **acidic** soils.

Why is this done? Tick (✓) one correct answer.

To change its colour.

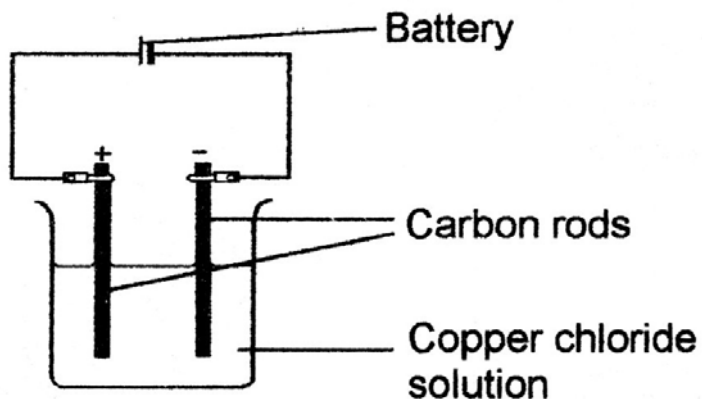
To remove the acidity in the soil.

To help crops grow quickly.

To keep the soil damp.

2 marks

- 4) Paul wanted to **break a compound**.
The diagram shows the experiment he set up.



- a) What is seen at each rod?

2 marks

- b) Which are the **two elements** that make up the substance in the beaker?

2 marks

- c) Write the **symbols** of the elements in b).

2 marks

- d) Write a **word equation** to show what is happening in this experiment.

3 marks

- e) i) Name the compound, formed when **iron** is left in **damp air**.

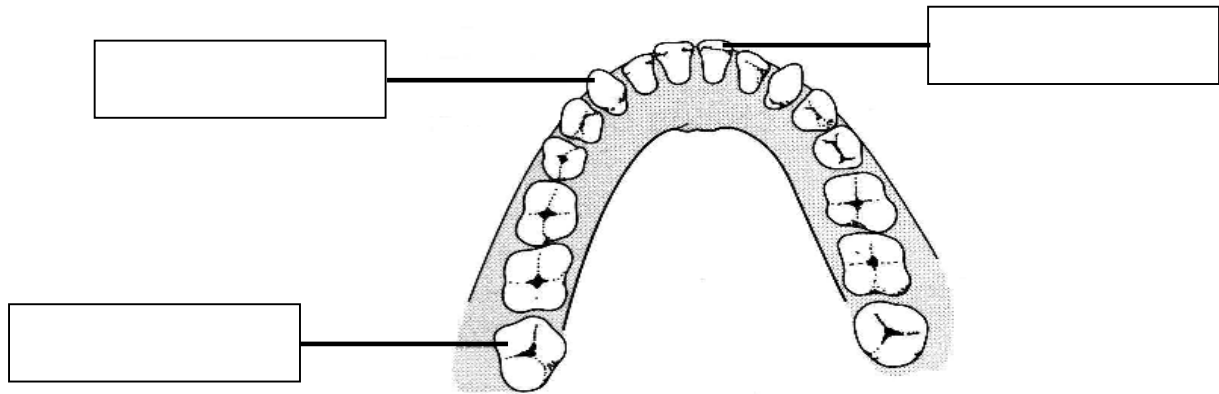
1 mark

- ii) Which **elements** make up this compound?

2 marks

5) The diagram shows **3 different types of teeth** in your mouth.

a) Label these types of teeth.



3 marks

b) Which type of teeth:

i) **bite and tear** the food? _____ 1 mark

ii) **chew** the food? _____ 1 mark

iii) **scrape and bite** food? _____ 1 mark

c) Which type of tooth has a **pointed edge**? _____ 1 mark

d) Why do we clean our teeth everyday?
 _____ 2 marks

6) Sparrowhawks eat swallows. Greenflies eat rose bushes. Swallows eat the ladybirds. Ladybirds eat Greenflies.

a) Use the above information to complete the food chain below:

rose bush → → → → 4 marks

b) Which **living thing** in the above food chain is **making the food**? _____ 1 mark

c) Explain why the swallow is both **a predator and a prey**.

i) **predator** _____ 1 mark

ii) **prey** _____ 1 mark

d) On a hot summer day the number of greenflies become bigger. What happens to the number of ladybirds in the foodchain above?
 _____ 2 marks

7a) A balanced diet contains **fats, vitamins, minerals, carbohydrates, water** and other substances.

i) Which other food substances are missing from the list?

_____ 2 marks

ii) Which food substances give us **energy**?

_____ 2 marks

iii) Name **a food**, which contains **a lot of**:

a) **fat** _____

b) **carbohydrates** _____

2 marks

b) When testing food, **Iodine** is used to test for **starch**, **Albustix** is used to test for **proteins**, **Clinistix** is used to test for **glucose** and a **filter paper** is used to test for **fat**.

Veronica tested some foods to find out which food substances they contain.
The table shows her results.

Food	Iodine	Albustix	Clinistix	Filter paper
Pea	No change	Gives a green colour	No change	Leaves a greasy stain
Potato	Gives a black colour	No change	No change	No change
Cake	Gives a black colour	No change	Gives a purple colour	No change
Milk	No change	Gives a green colour	No change	Leaves a greasy stain
Sweet	No change	No change	Gives a purple colour	No change

From the **above results** which **food substances** are present in these foods.

i) Pea _____

ii) Potato _____

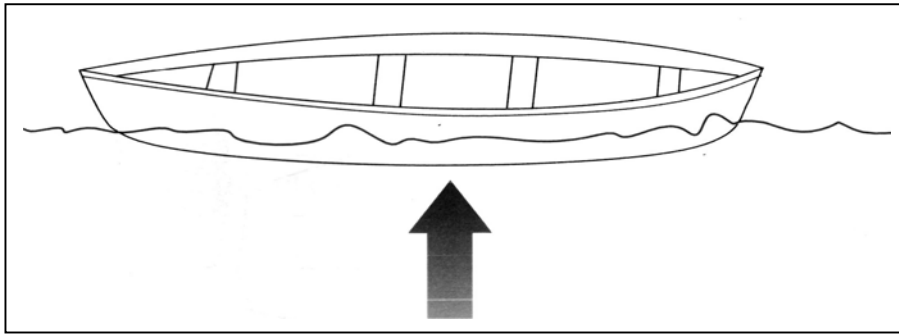
iii) Cake _____

iv) Milk _____

v) Sweet _____

8 marks

8) The diagram shows a boat **floating** on water. The arrow shows **one** of the **forces** that acts on the boat.



a) Choose words from the list to complete the sentence that describes the force shown in the diagram.

boat downward Earth upward water

The arrow shows the _____ push of the _____ on the _____. 3 marks

b) Draw an arrow on the diagram to show **another force** that acts on the boat when it is **floating**. 1 mark

c) Two people climb into the boat.

i) Does the **downward force** become bigger or smaller? _____ 1 mark

ii) Since the boat remains floating the upward force becomes bigger as well.
Tick (✓) one box.

True

False

1 mark

9) The table below shows the **properties** of 4 objects (A, B, C, D):

object	hard or soft	rough or smooth	dull or shiny	flexible or stiff
A	hard	smooth	shiny	flexible
B	soft	rough	dull	stiff
C	hard	smooth	shiny	stiff
D	soft	rough	dull	flexible

a) Which of these objects, A, B, C, D, could be:

i) a bath sponge? _____ 1 mark

ii) a plastic ruler? _____ 1 mark

iii) a new iron nail? _____ 1 mark

b) Fill in the table below to describe the **properties of a cement brick**?

object	hard or soft	rough or smooth	dull or shiny	flexible or stiff
Cement brick				

10a) Write down the names of a **solid**, a **liquid**, and a **gas**.

Solid _____

Liquid _____

Gas _____

3 marks

b) Tick (✓) **one** or **more** boxes to show how the **particles** of a solid, a liquid and a gas behave.

Property	Solid	Liquid	Gas
Particles are very near each other.			
Particles are not arranged in a pattern.			
Particles move far away very quickly.			
Particles can be easily pressed in a smaller space.			
Particles move.			

8 marks

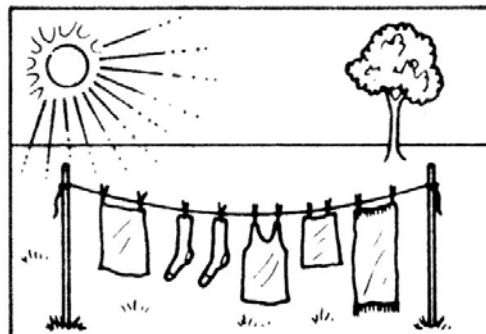
c) A metal rod is heated.

i) Tick (✓) boxes to say what happened to the particles in the **metal rod as it gets hotter**.

	increased	decreased	stayed the same
Size of particles			
Distance between particles			
Movement of particles			

3 marks

ii) What will happen to the **clothes-line** on a **hot** sunny day?



1 mark

11) **Three things** are needed to have a **fire**.

a) Draw the '**fire triangle**' to show these 3 things.

3 marks

b) If a chip pan full of oil catches fire then you should:

- 1. Turn off the gas cooker.**
- 2. Cover the pan with a damp cloth.**

Explain why these 2 actions help to put out the chip pan fire.

1. _____

2. _____

2 marks

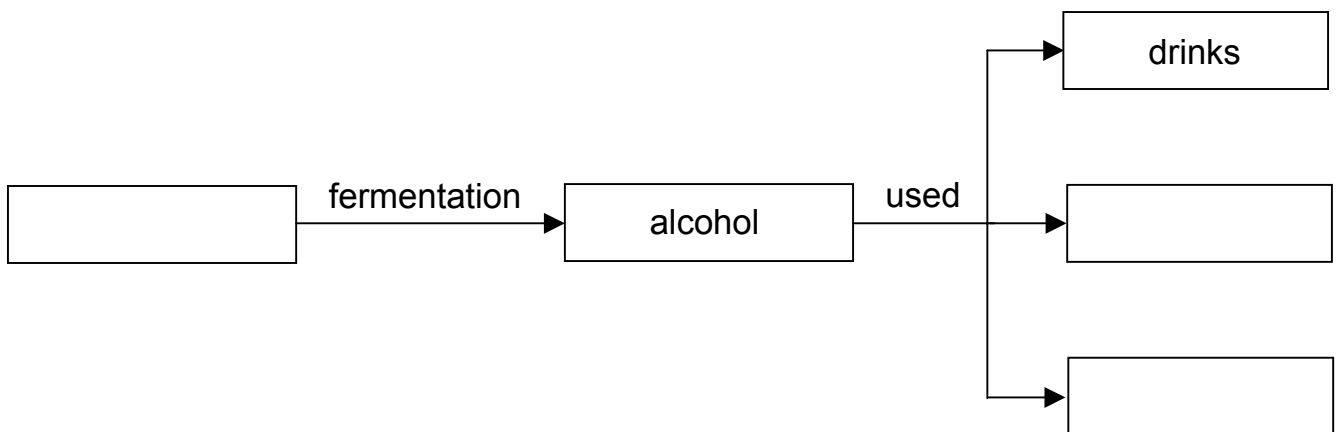
12) Read the following passage, then answer the questions that follow:

Fermentation is used to change glucose into alcohol. Drinks like wine and beer are made by fermentation. However, alcohol is not only used in drinks. It is also a new fuel that is used instead of petrol in Brazil. It is also a very good solvent.

a) What is this passage talking about?

1 mark

b) Complete the flow diagram to present the information in the passage.



3 marks