

**JUNIOR LYCEUMS ANNUAL EXAMINATIONS 2002**

Educational Assessment Unit – Education Division

**FORM 1**

**INTEGRATED SCIENCE**

**Time 1 hr 30 min**

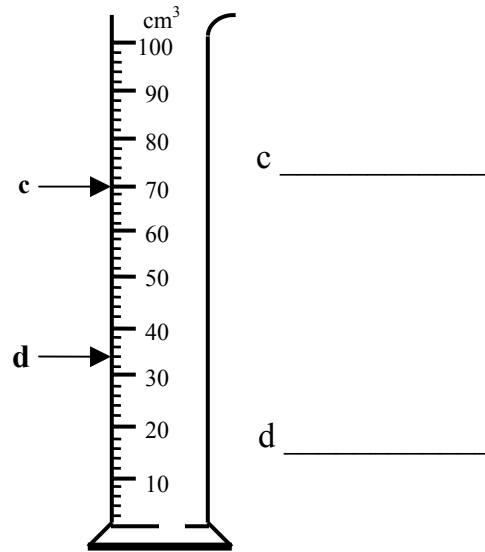
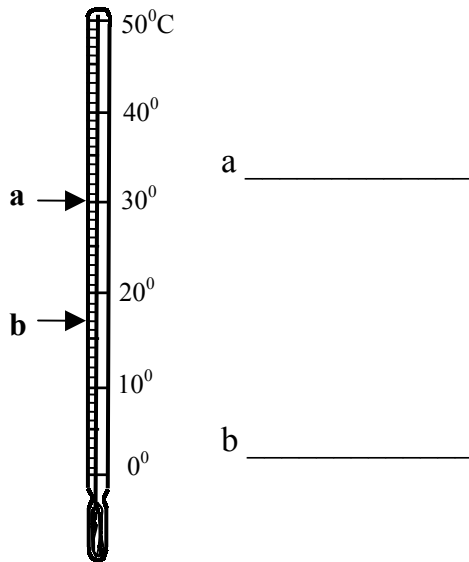
**Name** ..... **Class** .....

**ANSWER ALL QUESTIONS:**

- 1a) Paul measured **150 ml** of **water** and put it in a beaker. He heated it for **5 minutes** and then read the **temperature**. Write down the **measuring instruments** he used.

\_\_\_\_\_ (3 marks)

- b) Look at the following diagrams and give the reading at arrows **a** and **b**, **c** and **d**.



(4 marks)

- c) **Safety rules** are important in a science laboratory.

Three important safety rules are:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(3 marks)

2. (a) Give the **meaning** of the word **habitat**

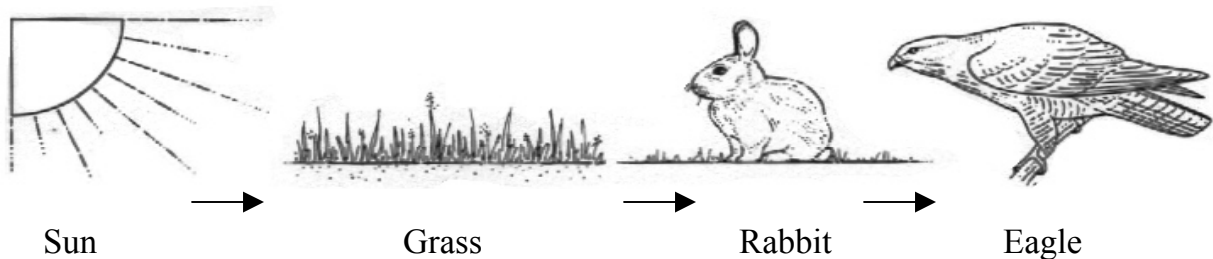
(1 mark)

(b) Complete the table. The first one is done for you.

Animal	Habitat	Example of adaptation	Why
Lion	Jungle	Sharp teeth	To kill animals for food
Fish	Water		
Polar bear	Very cold places		
Camel	Dry deserts		

(6 marks)

3. The pictures below show a **food chain**.



(a) Complete the sentence to describe what you expect to happen.

If the rabbit population is **reduced** by disease the amount of grass will \_\_\_\_\_ (1 mark)  
 and the number of eagles will \_\_\_\_\_ (1 mark)

(b) Vertebrates are divided into 5 groups.

Find which **vertebrate group** these animals belong to:

(i) This animal lives in water and has gills and fins. It is a \_\_\_\_\_ (1 mark)

(ii) This animal has feathers. It is warm-blooded and lays eggs. It is a \_\_\_\_\_ (1 mark)

(iii) This animal has a scaly skin. It is cold-blooded and lays eggs but it cannot breathe  
 in water. It is a \_\_\_\_\_ (1 mark)

(iv) This animal can live on land and in water. It lays its eggs in water.  
 It is an \_\_\_\_\_ (1 mark)

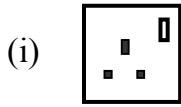
(v) This animal has hairy skin, it is warm blooded and feeds its young on milk.

It is a \_\_\_\_\_ (1 mark)

(c) The butterfly is not a vertebrate. Why? \_\_\_\_\_

(2 mark)

4. (a) Write the **main form of energy** that the picture shows.



Mains socket

\_\_\_\_\_



Food

\_\_\_\_\_



Ice skater

\_\_\_\_\_

(3 marks)

(b) The chart below lists some different **sources of energy**.

Tick ( ) in a box in column 1 **or** 2 if the type of energy is **renewable** or **non-renewable**

	Source of energy	Column 1 renewable	Column 2 non-renewable
(i)	solar		
(ii)	wind		
(iii)	coal		
(iv)	oil		

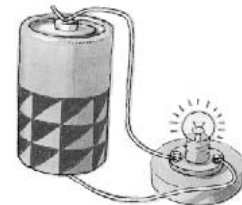
(4 marks)

(c) The picture shows a battery, two wires and a bulb.

(i) What is the form of energy in the battery? \_\_\_\_\_

(ii) What is this energy changed to in the wires? \_\_\_\_\_

(iii) What is the main form of energy that comes out in the bulb? \_\_\_\_\_ (3 marks)



5a) Give two examples of each of the following:

solid \_\_\_\_\_

liquid \_\_\_\_\_

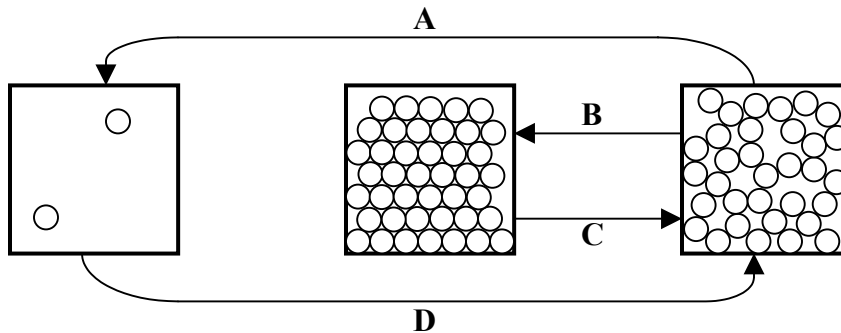
gas \_\_\_\_\_

(6 marks)

(b) In which state of matter (solid, liquid or gas) do the particles move fastest?

\_\_\_\_\_ (1 mark)

(c) The diagram below shows **particles** in a gas, a solid and a liquid.  
Each arrow, A, B, C and D, represents a **change of state**.



Choose from the following words to complete the sentences below.

**boiling, condensing, distilling, evaporating, filtering, freezing, melting**

Change of state **A** is called \_\_\_\_\_

Change of state **B** is called \_\_\_\_\_

Change of state **C** is called \_\_\_\_\_

Change of state **D** is called \_\_\_\_\_ (4 marks)

6. (a) Iron and sulphur are elements. When they are mixed together and the mixture is heated in a test tube, a reaction takes place. What happens to the elements?

\_\_\_\_\_ (1 mark)

(b) Name any two elements and give their symbols

(i) element \_\_\_\_\_ symbol \_\_\_\_\_

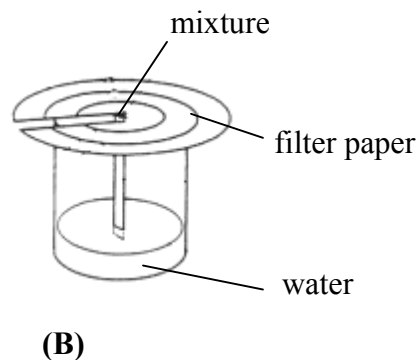
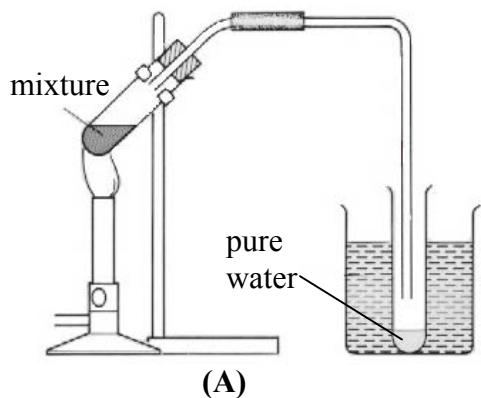
(ii) element \_\_\_\_\_ symbol \_\_\_\_\_ (4 marks)

(c) The common name for the **compound** sodium chloride is salt.  
This compound is made up of the elements sodium and chlorine.

Write the **word equation** which shows how sodium chloride is formed.

\_\_\_\_\_ (2 marks)

7. These two diagrams show methods of separating mixtures.



(a) Give the names of these two **methods of separating** mixtures

(A) \_\_\_\_\_

(B) \_\_\_\_\_

(2 marks)

(b) These are two mixtures which can be separated:

**solution of salt and water,**

**mixture of different coloured inks**

(i) Which of the above mixtures could be separated by method (A)?

\_\_\_\_\_

(1 mark)

(ii) Which of the above mixtures could be separated by method (B)?

\_\_\_\_\_

(1 mark)

(c) Use these words to fill in the spaces below.

**solvent, solution, solid, soluble, dissolved, insoluble.**

If a \_\_\_\_\_ disappears when it is mixed with water, then we say it has \_\_\_\_\_.

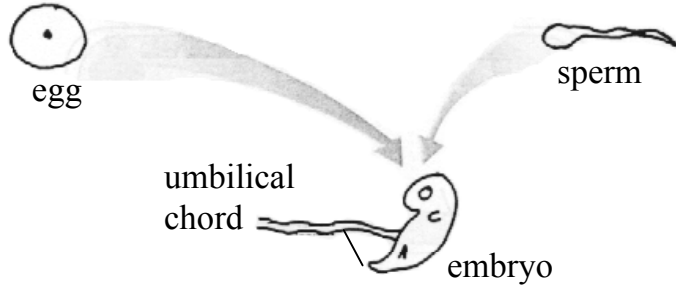
When this happens a \_\_\_\_\_ is formed. A solid that will dissolve is said to

be \_\_\_\_\_. The liquid that makes it dissolve is called the \_\_\_\_\_.

A solid that will not dissolve is called \_\_\_\_\_.

(6 marks)

8. (a) The diagram shows the beginning of a baby.



The **egg** and **sperm** come from the parents of the baby.

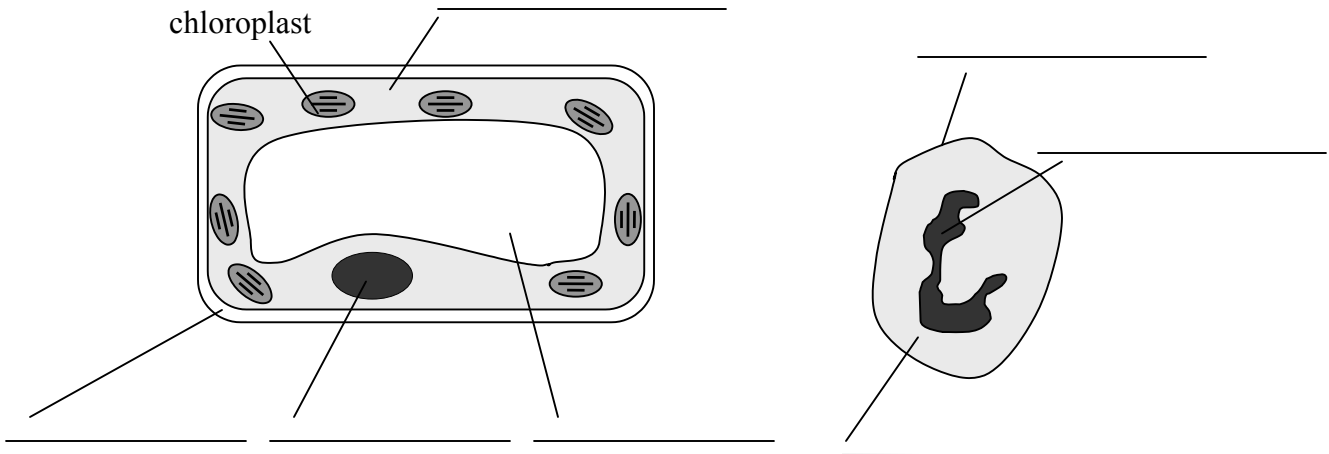
(i) Which parent gives the sperm? \_\_\_\_\_ (1 mark)

The **embryo** grows inside the mother

(ii) In which part of the mother does the embryo grow? \_\_\_\_\_ (1 mark)

(iii) Why is the baby attached to the placenta by the umbilical chord?  
 \_\_\_\_\_ (2 marks)

(b) The diagrams show two **cells**.

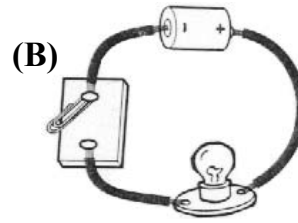
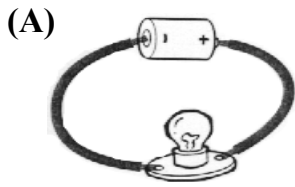


(b) (i) Use words from this list to label these two cell diagrams. The words can be used more than once:

**cell membrane, cell wall, cytoplasm, nucleus, vacuole.** (7 marks)

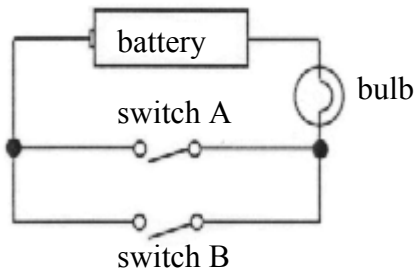
(ii) Name three things that are in a plant cell but not in an animal cell.  
 \_\_\_\_\_ (3 marks)

9.(a) Look at **circuits (A) and (B)**. Draw diagrams using **symbols** to represent these circuits.



(5 marks)

(b) The diagram shows a bulb, a battery and two switches.



Complete the table to show when the bulb **lights or does not light**. The first one has been done for you

Switch A	Switch B	Lights or does not light
off	off	does not light
on	off	
off	on	
on	on	

(3 marks)

(c) Name four other forms of energy into which electricity can be changed.

\_\_\_\_\_

(4 marks)

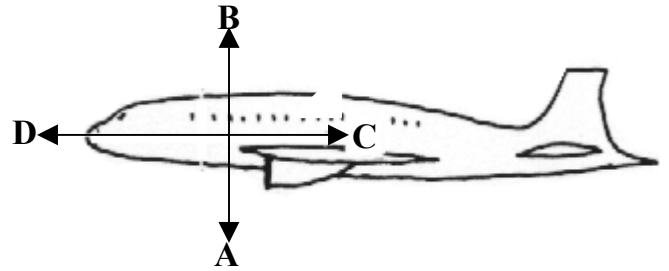
10.(a) The picture shows a plane flying in the air. There are **four forces** shown on it. They are labeled **A, B, C** and **D**.

Using the labels **A, B, C** and **D**, which force:

(i) is the driving force? \_\_\_\_\_

(ii) is caused by air resistance? \_\_\_\_\_

(iii) is the pull of the Earth on the plane? \_\_\_\_\_



(3 marks)

(b) **Underline the two** statements that describe what is happening to the ball?



(i) The up-force and down force are in balance

(ii) The up-force is greater than the down-force.

(iii) The down-force is greater than the up-force.

(iv) Gravity is acting on the ball.

(2 marks)

(c)



Draw an arrow to show the direction of the force that the trampoline is exerting **on Lucy**.

(1 mark)

(d) Claire throws her ball straight up into the air.

(i) What happens to the speed of the ball as it goes up?

\_\_\_\_\_ (2 marks)

(ii) Why does the ball fall down again?

\_\_\_\_\_ (1 mark)