SECONDARY SCHOOLS ANNUAL EXAMINATIONS 2002

INTEGRATED SCIENCE

Please note that there is a misprint in the Header.
The year should read **2002** not **2001**.

SECONDARY SCHOOLS ANNUAL EXAMINATIONS 2001
Educational Assessment Unit – Education Division

FORM 1 **INTEGRATED SCIENCE** **Time 1 hr 30 min**

Name …… **Class** …….

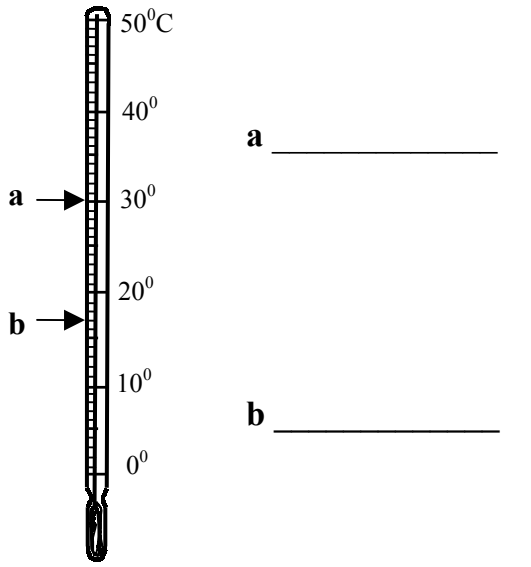
ANSWER ALL QUESTIONS:

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.

_____ _____ _____

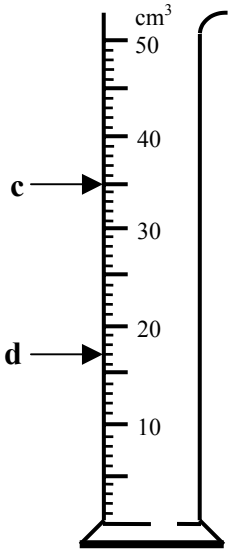
(3 marks)

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



a _____

b _____



c _____

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**

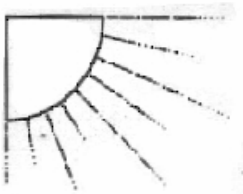
_____ (1 mark)

(b) The body of some animals is changed according to the place where they live. This is called adaptation.
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		

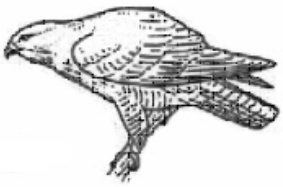
(6 marks)

3. The following pictures are linked in a **food chain**.



Sun

Rabbit



Eagle

Grass

(a) Write down the food chain in the correct order

Sun → _____ → _____ → _____

(3 marks)

(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.

(i) 

Mains socket

(ii) 

Food

(iii) 

Ice skater

_____ _____ _____

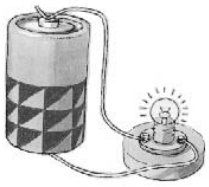
(3 marks)

(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 _____ _____

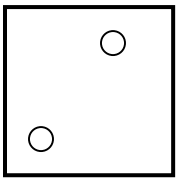
liquid _____ _____

gas _____ _____ (6 marks)

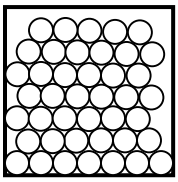
(b) In which state of matter (solid, liquid or gas) do the particles move fastest?

_____ (1 mark)

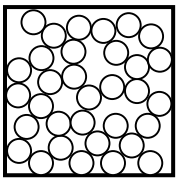
(c) The diagram below shows **particles** in a gas, a solid and a liquid.



(A)



(B)



(C)

(i) Which diagram shows how the particles are arranged in a:

Solid _____ liquid_____ gas _____ (3 marks)

(ii) When water evaporates its particles change their arrangement from diagram _____ to diagram _____. (2marks)

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 _____

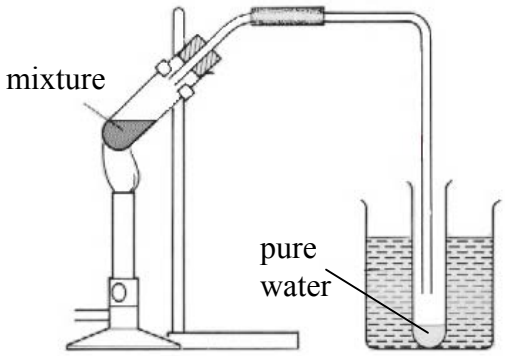
(ii) element _____ symbol _____ (4 marks)

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

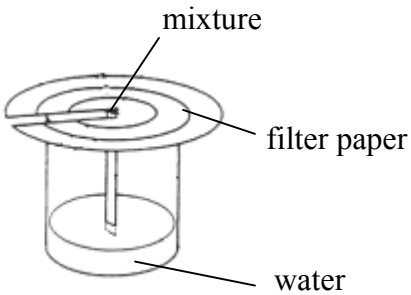
Write the **word equation** which shows how sodium chloride is formed.

_____ (2 marks)

7. These two diagrams show methods of separating mixtures



(A)



(B)

(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.

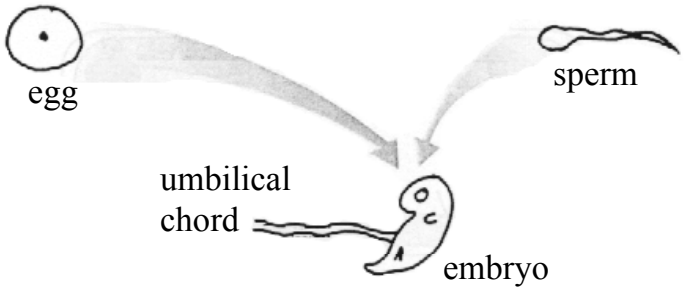
If a _____ disappears when it is mixed with water, then we say it has _____.

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)

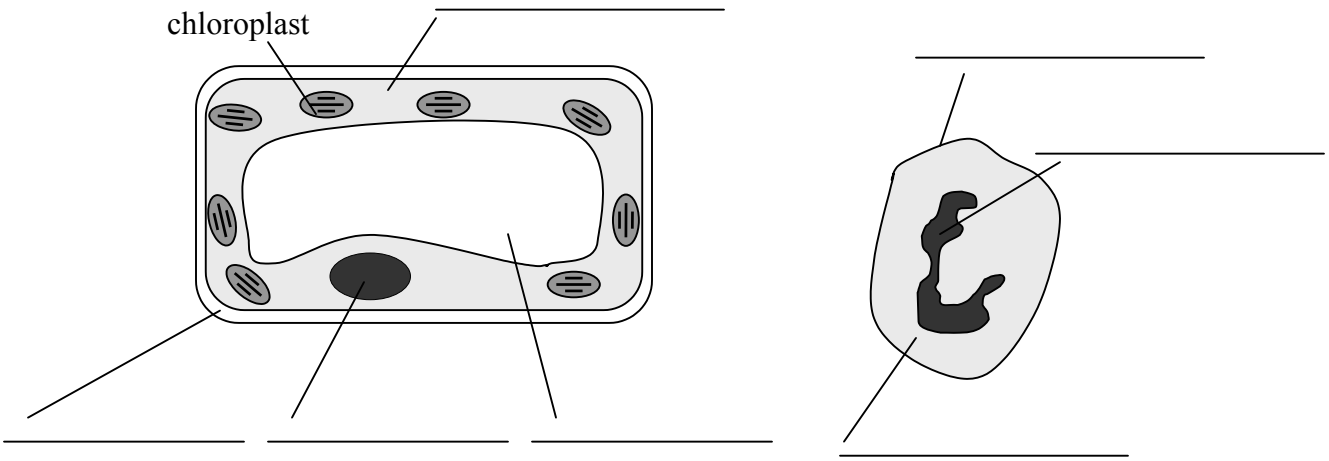
The **embryo** grows inside the mother

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

(iii) Which two important substances pass from the placenta into 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:

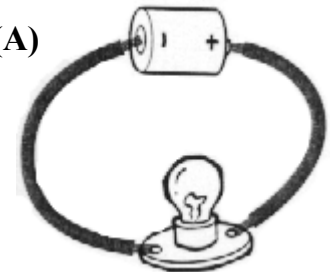
cell membrane, cell wall, cytoplasm, nucleus, vacuole. (7 marks)

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

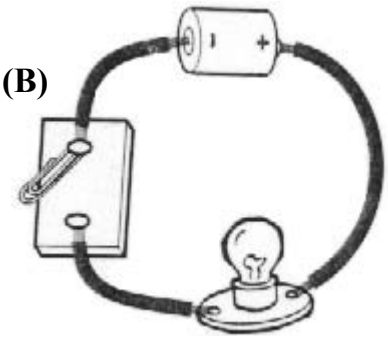
_____ _____ _____ (3 marks)

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

(A)

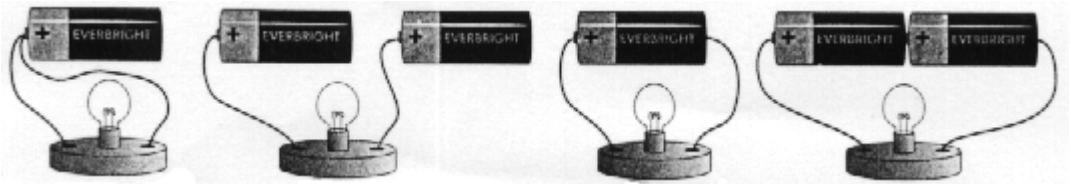


(B)



(5 marks)

(b) Here are some bulbs connected to some batteries.



W **X** **Y** **Z**

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

Bulb	Lights	Does not light
W		does not light
X		
Y		
Z		

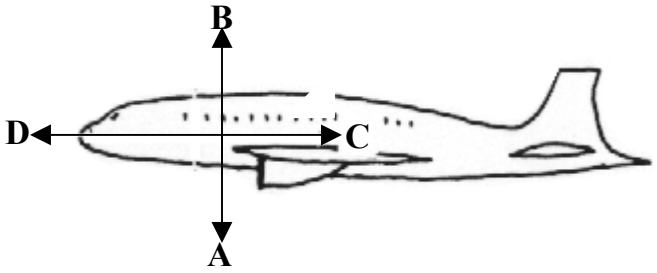
(3 marks)

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

_____ _____ _____

(3 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)