DIRECTORATE FOR QUALITY AND STANDARDS IN EDUCATION
Department for Curriculum Management and eLearning
Educational Assessment Unit
Annual Examinations for Secondary Schools 2010

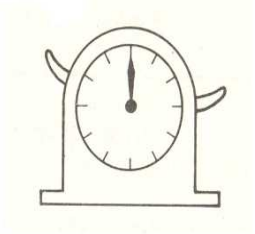
FORM 1 **INTEGRATED SCIENCE** **TIME: 1h 30min**

Name: _____ **Class:** _____

ANSWER ALL QUESTIONS

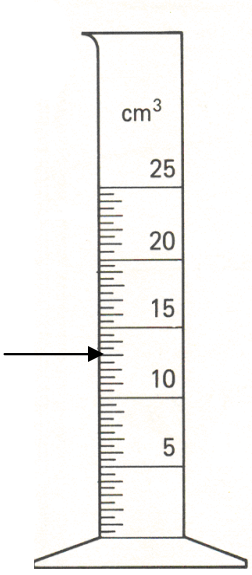
1. In a science laboratory we need to measure many things.

a) Complete the following table. You are asked to fill in the empty spaces according to the information already given.

Drawing of instrument			
Name of Instrument		thermometer	
Units used			cm

(6)

b) What volume does this measuring cylinder show?



_____

(1)

2. During a fieldwork exercise, two groups of students counted the number of flowers in a separate area. Here are their results:

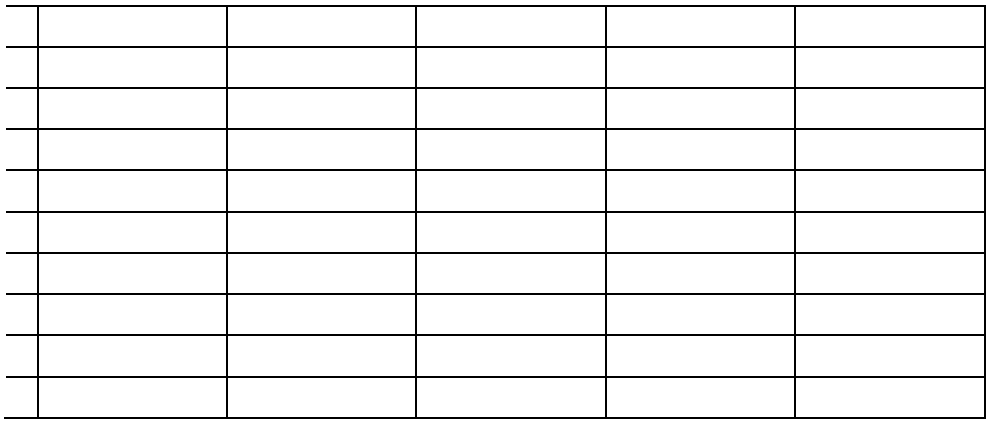
Group 1 counted 4 daisies, 6 buttercups, 5 red pimpernels, 2 borages.

Group 2 found 3 red pimpernels, 1 buttercup, 2 daisies and 3 dandelions.

a) i. In the table below write the total number of each flower that was found in that area.

Name of flower	**Colour**	**Total number found**
Daisy	White	
Buttercup	Yellow	
red pimpernel	Red	
Borage	Blue	
Dandelion	Yellow	

ii. On the grid provided draw a bar chart to show the number of each flower found. Mark the axes.



Type of flower

(7)

b) How many flowers were found in all? _____ (1)

3. The following question is about a simple experiment done in a laborat g a science lesson. Read the paragraph and then answer the following ques

Mark wanted to separate a mixture of sand and water. He folded a filter paper and placed it in a funnel. He placed the funnel in a conical flask. Mark started pouring the mixture from the beaker on to the filter paper. The sand remained on the filter paper and clear water passed down into the conical flask.

a) Give a name to this experiment: _____ (1)

b) Draw a diagram of the apparatus set up for this experiment. Label the diagram.

(6)

4. The diagram shows a human sperm cell.

a) Add the labels from the box to the diagram

Nucleus	cytoplasm	cell membrane

(3)

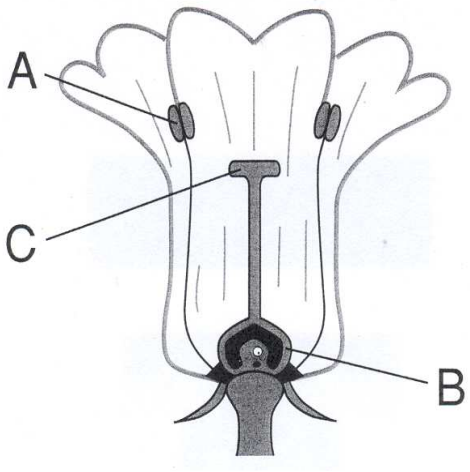
b) Give one feature of this cell which is not usually found in animal cells.

_____ (1)

c) What name is given to the process that happens when a sperm cell joins with an egg cell?

_____ (1)

5. The diagram below shows the structure of a flower.



a) **Answer the following questions:**

i) A is called the _____

ii) B is called the _____

iii) C is called the _____

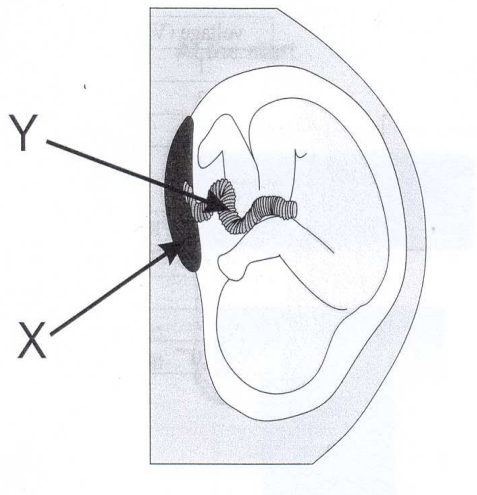
(3)

b) **Fill in the blanks**. The following words might help you. Each word can be used once, more than once or not at all.

ovary anther stigma style filament petal wind animals

Pollen is made in the _____. This pollen can be spread to other flowers by _____ and _____. When the pollen lands on the flower it can stick to the _____. A pollen tube then grows down the style into the _____. (5)

6. The diagram shows a foetus inside its mother's womb.



a) Name the parts X and Y

X	
Y	

(2)

b) Name TWO things that would travel to the baby from the mother through X and Y.

_____

_____

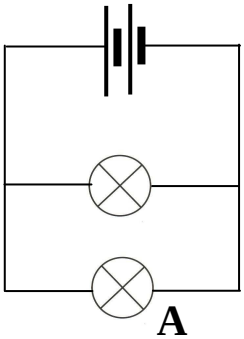
(2)

7. When drawing electrical circuits we use symbols.

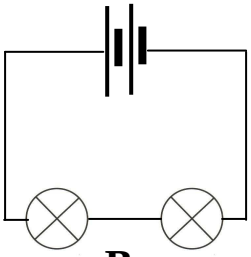
a. What do these symbols stand for?

_____ _____ _____ (3)

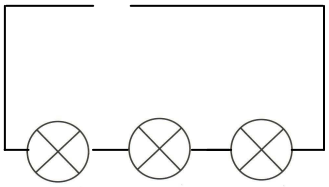
b. Look at these circuits and then answer the following questions



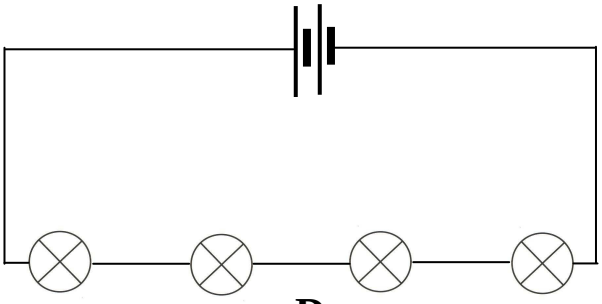
A



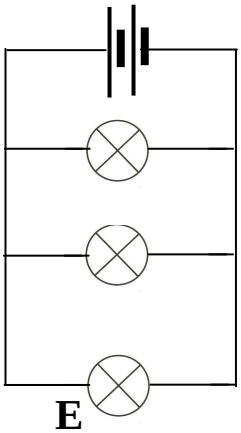
B



C



D



E

(i) Which circuit would NOT allow the bulbs to light? _____ (1)

Explain why you have selected this circuit.

_____

(1)

(ii) Which TWO circuits have the bulbs in parallel? _____

(2)

(iii) **Look at circuit A**.

Fill in the table below to show what will happen when the following changes are made to the circuit.

Changes to circuit A	**What happens?**
One lamp is unscrewed	
Another cell is added in series	

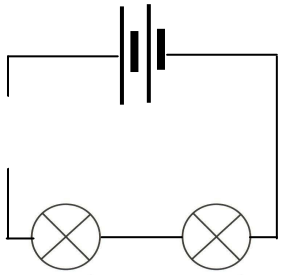
(4)

c. A set of Christmas lights did not light up. This was because one of the bulbs was broken. Were these bulbs connected in series or in parallel?

_____

(1)

d. There is a gap in the following circuit.



The following objects were tested to find out whether they are conductors or insulators. Underline the conductors ONLY.

coin, wood, feather, nail, rubber, aluminium foil

(3)

8. Helen is doing an experiment. She puts some ice cubes in a pan and heats them up. Some time later she notices drops of water on a window.

Fill in the blanks to explain what is happening.
The following words might help you. Each word can be used once, more than once or not at all.

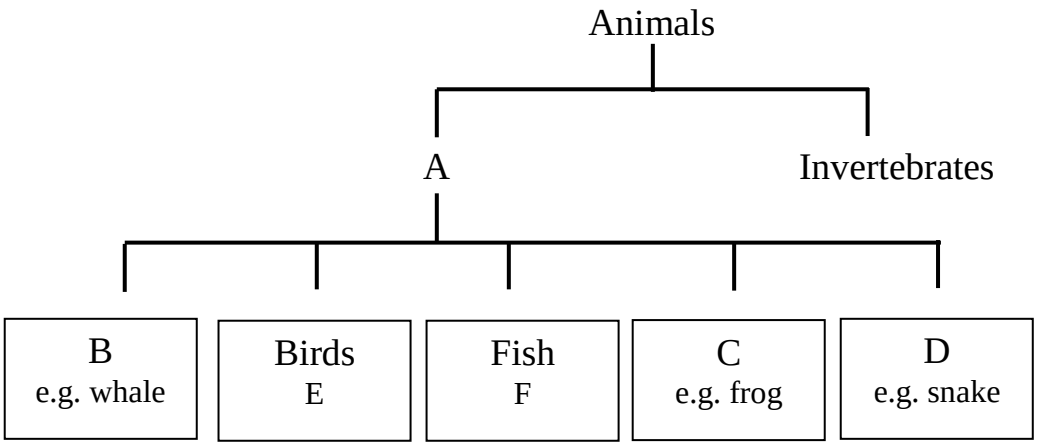
liquid,	**freezing,**	**solid,**	**condensation,**	
evaporation,	**100,**	**0,**	**boiling,**	**gas**

Before she starts to heat the ice cubes up, the ice is a _____. After the ice has been heated, it turns to water which is a _____. On further heating, Helen notices bubbles of _____ rising within the water. Water is now _____ and its temperature is _____ degrees Celsius (^{0}C). _____ of water from the saucepan produces water vapour which then cools on the window. This cooling of water vapour is called _____. This produces small water drops which are seen on the window.

(7)

9. The diagram below shows how animals are divided.

a). Find out what each letter can stand for and write them in the table provided.



Letter	What it can stand for
A	
B	
C	
D	
E	
F	

(6)

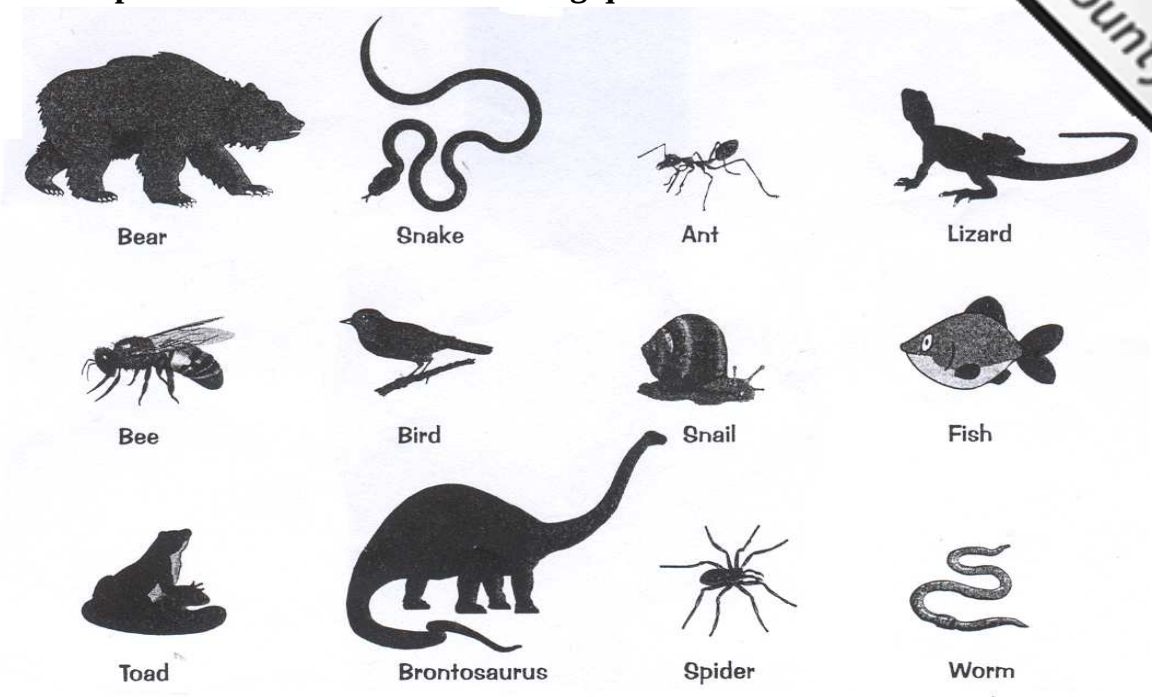
b). A scientist has found an animal and she wishes to find to which group it belongs.

What is the first thing that the scientist must look for to decide which of the two main groups it belongs to?

_____

(2)

10. Use the pictures to answer the following questions:



a) List 2 vertebrates _____ _____ (2)

b) List 2 invertebrates _____ _____ (2)

c) Name a mammal. Write ONE feature which makes it a mammal.

_____ (2)

d) Name an amphibian. Write ONE feature which makes it an amphibian.

_____ (2)

11. This question is about energy sources.

a) Underline the **renewable** energy sources from the following list.

coal biomass wind oil waves natural gas (3)

b) Each of the energy resources listed above can have its energy traced back to **ONE** source. What is this 'one source'?

_____ (1)

c) A businessman has 3 homes in different places. He would like to use renewable energy sources like **solar panels** and **wind turbines**.

Which of these two sources is best to be used in:

i.. a house in a valley between two mountains:_____

ii. a house on top of a hill: _____

iii. a house in the north of Europe during summer

_____

(3)

12. In most kitchens there are lots of devices that are designed to transfer electrical energy into at least one type of energy.
Complete the following, showing only the **MAIN** energy transfer:

a.	electric kettle		Electricity → _____
b.	food processor		Electricity → _____
c.	radio		Electricity → _____

(3)

13. This question is about some elements and compounds.

a. Give the names of the elements that have the following symbols.

C _____ Cu _____

Mg _____

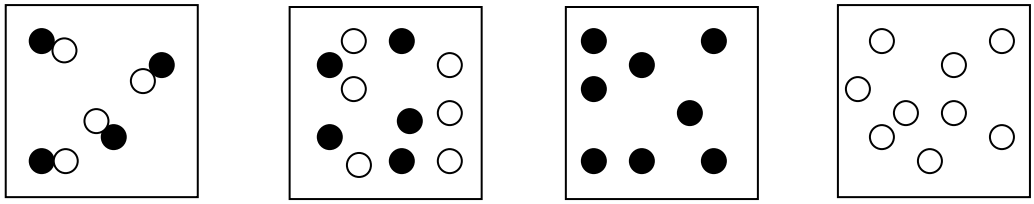
(3)

b. Circle **the compounds** in the following list of substances.

silver hydrogen sulfur carbon dioxide salt

14. In the diagrams below :

● stands for a zinc atom ○ stands for a sulfur atom



A B C D

i) Which diagram represents pure sulfur? _____ (1)

ii) Which diagram represents a mixture of zinc and sulfur ? _____ (1)

iii) Which diagram represents a compound of zinc and sulfur ? _____ (1)

iv) Write one difference between an element and a compound.

_____ (1)

15. Elements can be divided into metals and non-metals.

a) i. Name one metal used in the lab. _____

ii. Name one non-metal. _____ (2)

b) i. Name one metal used to make jewellery. _____ (1)

ii. Give one property of this metal that makes it suitable for jewellery.

_____ (1)

- END OF PAPER. PLEASE CHECK YOUR WORK AGAIN -