DIRECTORATE FOR QUALITY AND STANDARDS IN EDUCATION
Department for Curriculum Management and eLearning
Educational Assessment Unit
Annual Examinations for Secondary Schools 2013

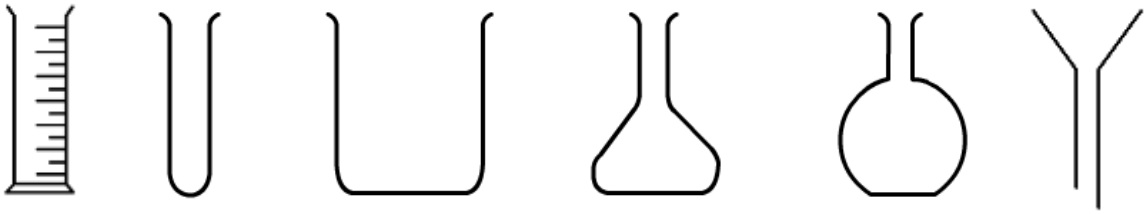
5-

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

Name: _____ **Class:** _____

ANSWER ALL QUESTIONS

1. Matthew found some apparatus in the science laboratory. This apparatus is shown below.



A B C D E F

a. Write the letter which shows the following apparatus. 2 marks

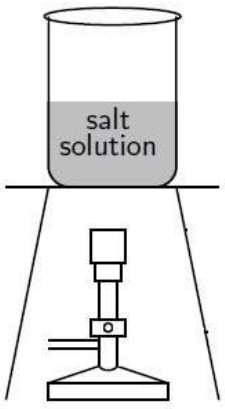
funnel: _____ conical flask: _____

b. Match the correct measuring instrument used to measure each of the following.

1. stopwatch:	☐ 500g of flour are needed to make a cake
2. metre ruler:	☐ It takes 17 seconds to write your address
3. balance	☐ The pencil is about 15cm long

3 marks

c. Matthew used this apparatus to heat a salt solution in the laboratory.



(i) Which measuring instrument will Matthew use to find the temperature of water? _____ 1 mark

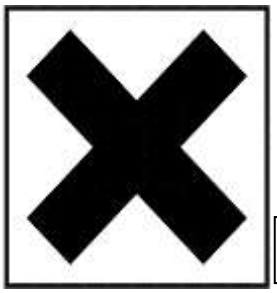
(ii) What is the boiling point of pure water? _____ 1 mark

2. a. In the laboratory there is fire fighting equipment. Circle TWO examples in the pictures below.

2




b. Some chemical bottles have hazard symbols on them. What do the following symbols mean?



2 marks

c. Burning is a chemical reaction. What is the scientific name for burning?

_____ 1 mark

d. Use the fire triangle to describe a safe way of putting out a fire. Identify the thing which is being removed. Draw lines between the columns to show the correct links.

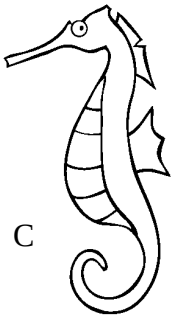
Fire	How to put it out	What is removed
A burning house	Fire fighter pours water	fuel
Burning oil	Pouring foam	heat
Short circuit	Turning off electricity	oxygen

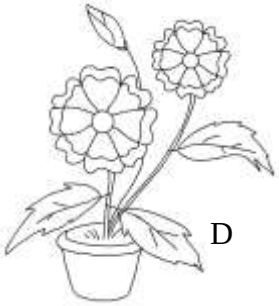
3 marks

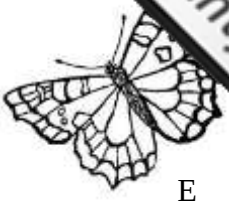
3. This question is about living things.


A


B


C


D

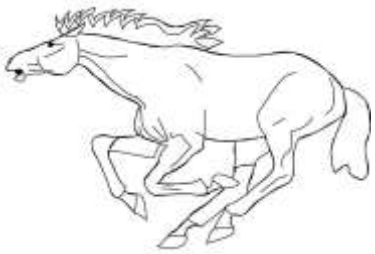

E

a. D is the odd one out. Give a reason for this.

_____

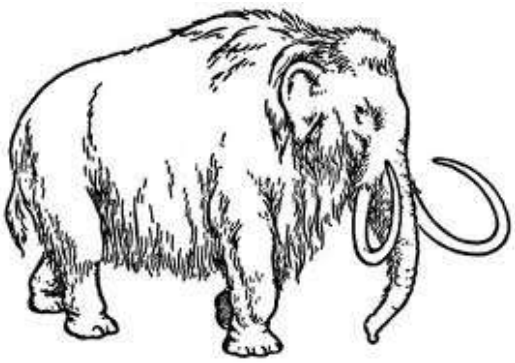
1 mark

b. Joseph is reading a book about living and non-living things. He learned that living things carry out the 7 vital functions. Name the vital function shown by each picture below.



3 marks

c. The picture below shows a mammoth. This is a large and extinct mammal.



(i) Explain the word 'extinct'. _____

_____

1 mark

(ii) How can you tell from the picture that the mammoth is a mammal?

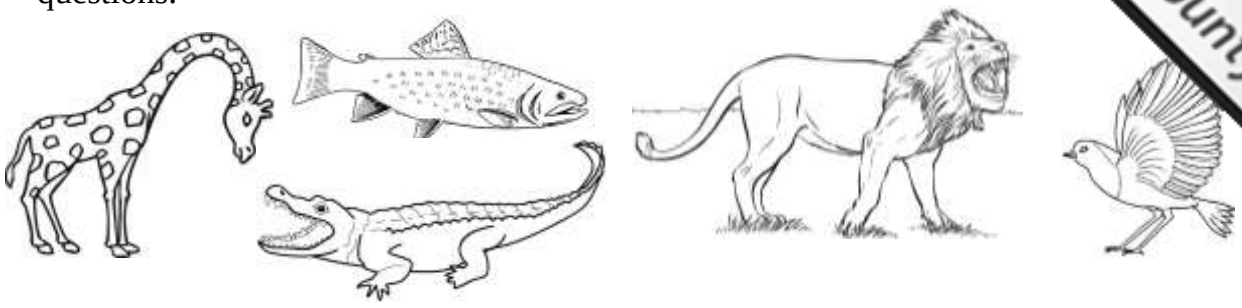
_____

1 mark

(iii) Name the habitat where mammoths used to live.

_____ 1 mark

d. Scientists divide animals into two groups. Use these pictures to answer the following questions.



(i) State one characteristic common to all these animals.

_____ 1 mark

(ii) The lion is a carnivore. Write TWO characteristics which make the lion a good predator.

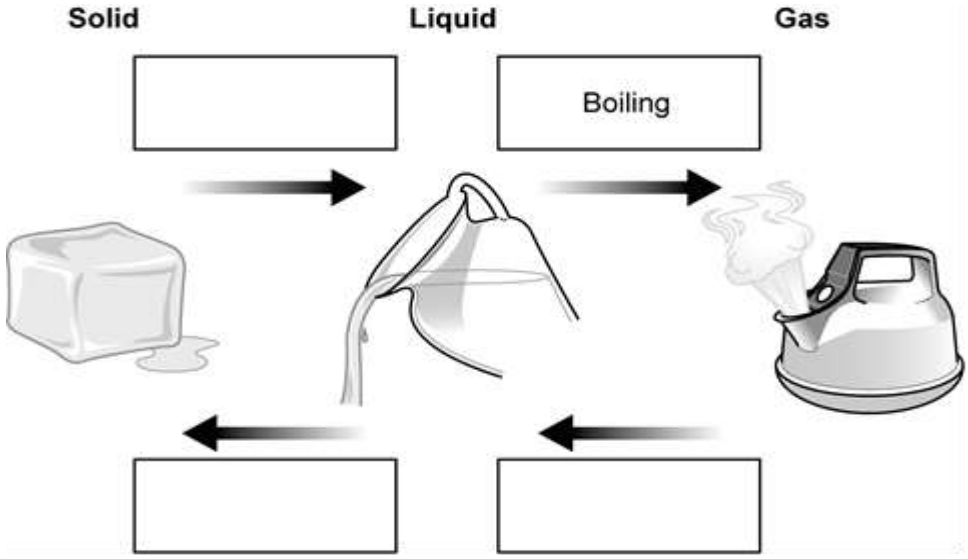
- _____
- _____

2 marks

4. The diagram shows the three states of matter – solid, liquid and gas. The arrows show the changes that happen when substances change state by heating up or cooling down.

a. Use the words in the box below to label the changes in the boxes above the arrows. The first one has been done for you.

melting	**freezing**	**condensing**	**boiling**



3 marks

b. The picture below shows a glass of cold drink. Water droplets form on the outside of the glass.

Describe how this water forms.

_____

_____

2 marks

c. Robert had 3 mystery parcels. He could easily squash parcel A and make it smaller. He couldn't squash parcel B into a smaller space but its shape changed all the time. He couldn't squash parcel C or change its shape no matter how hard he tried.

(i) Which of the parcels A, B, or C contained a gas? _____ 1 mark

(ii) Use the particle model to explain your answer. 2 marks

_____

_____

5. Fill in the blanks by using some of the words below. Some words may be used once, more than once or not at all.

heat	**Joules**	**Watts**	**sound**	**solar**	**movement**	**stores**

Energy is measured in _____. Food and fuel are both _____ of energy. Food in our body is changed into _____ energy to keep us warm and to movement energy whenever we move. Fuel in a moving car is changed to _____ energy, sound energy and also _____ energy.

5 marks

6. For each of the objects shown in the table below, write down their energy [illegible] the main energy outputs. The first one has been done for you.

Input Energy	Object	Output Energy
Electrical	 Torchlight	Light
	 Iron	
	 Battery	
	 photovoltaic cell	

3 marks

7. Magnesium burns very brightly and then it leaves a white powder afterwards.

   a. Say whether these sentences are TRUE or FALSE

   (i) Magnesium burns with a bright white flame. _____

   (ii) During burning, magnesium turns into a liquid. _____

   (iii) This is a reversible change. _____

3 marks

b. Underline the things that show that when magnesium burns, a chemical re[illegible]es place.

- Magnesium is grey
- A bright light comes out
- A white powder forms

2 marks

c. When magnesium burns, it joins with oxygen and forms magnesium oxide which is a white powder.

(i) Where does oxygen come from? _____ 1 mark

(ii) Complete this word equation.

Magnesium + oxygen → _____ 1 mark

8. The pH scale shows how strong an acid or an alkali is.

a. Underline ONE object used to find the pH number of a liquid.

litmus paper **filter paper** **universal indicator** **iodine**

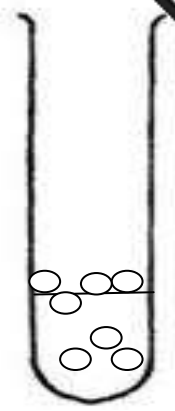
1 mark

b. Complete this table. The first one has been done for you.

pH number	**Description**
pH 5	a weak acid
pH 9	
pH 7	
pH 2	

3 marks

c. A student added some hydrochloric acid to baking powder. Bubbles came out immediately. At the end, there was no more baking powder left but only a clear liquid. This liquid had a pH 7.



(i) What shows that a chemical reaction took place?

_____ 1 mark

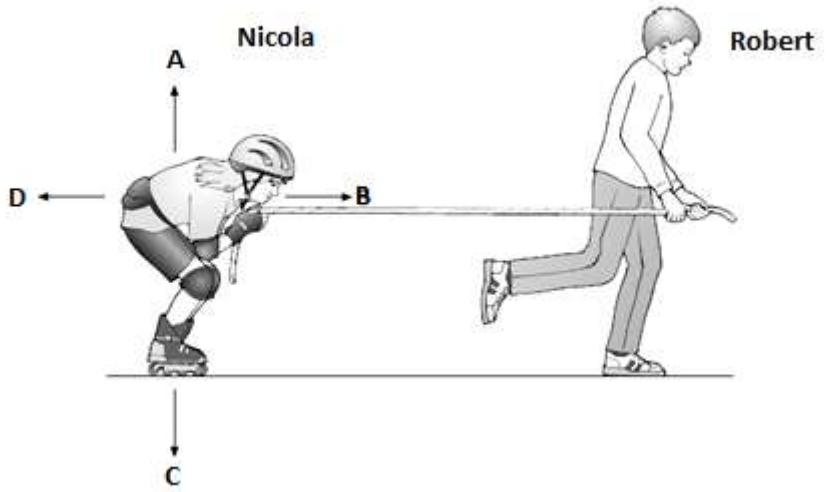
(ii) Hydrochloric acid has a pH 2, baking powder has a pH 9 and the liquid produced has a pH 7. What is this reaction called?

_____ 1 mark

(iii) Give an everyday example of this type of reaction.

_____ 1 mark

9. The diagram below shows Nicola on rollerblades being dragged to the right by Robert.



a. Which type of force, a pulling or a pushing force, must Robert apply to move Nicola forward? _____ 1 mark

b. Name the instrument Robert can use to measure this force._____ 1 mark

c. What are the names of the forces labelled C and D?

Force C: _____ Force D: _____ 2 marks

d. Write the letters of the two forces that are equal when Nicola moves at constant speed.

_____ 1 mark

e. When she lets go of the rope, she continues to move a short distance a[illegible]ops. She notices that while stopping a hissing sound was coming from the wh[illegible] roller blades.

Name the force that may be causing this sound. _____

1 mark

10. Look at these two circuits and answer the following questions.

A	B
	

a. Circuit A will not work. Why?

_____

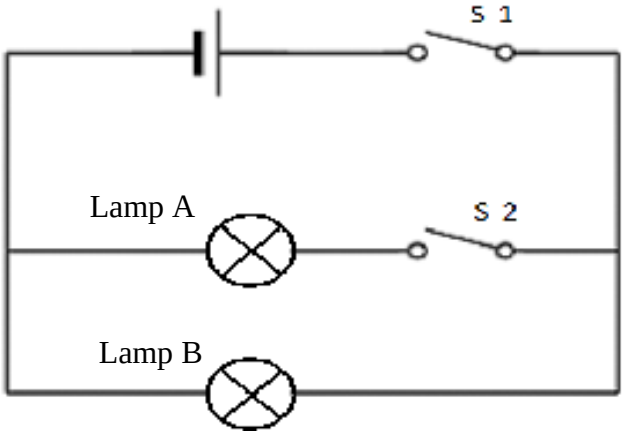
_____

1 mark

b. In the space below, draw the circuit diagram of the wiring shown in diagram B.

3 marks

c. Look at this circuit and answer the following questions



(i) What is the name of components S1 and S2 in the circuit diagram above?

_____ 1 mark

(ii) Are the lamps connected in series or in parallel?

_____ 1 mark

(iii) Give ONE advantage of having lamps connected this way.

_____ 1 mark

(iv) In the table below tick (✓) the lamp that will light when the components S1 and S2 are open or closed.

	Lamp A is ON	Lamp B is ON
S1 closed and S2 open		

1 mark

(v) When component SI and S2 are replaced by a wooden spoon, lamps A and B will not light. Why?

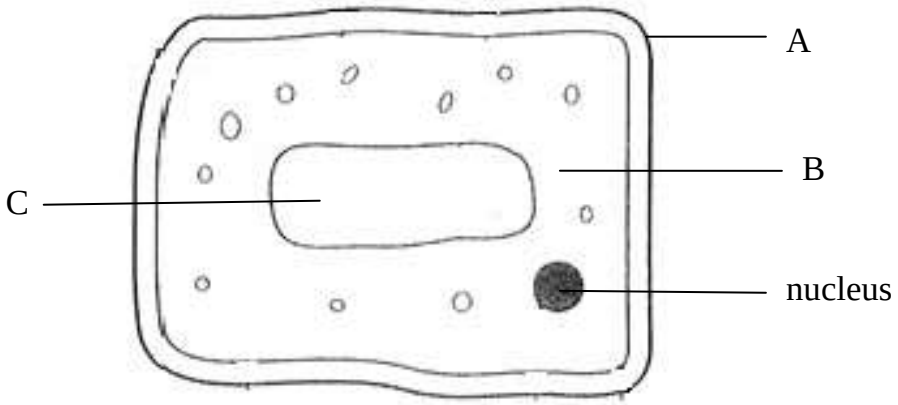
_____

_____

1 mark

11. This question is about cells. This diagram shows a typical cell.

a. Is this an animal or a plant cell? _____



b. Name the parts labelled A, B and C. 3 marks

A: _____

B: _____

C: _____

c. Why is the nucleus important in the cell?

_____ 1 mark

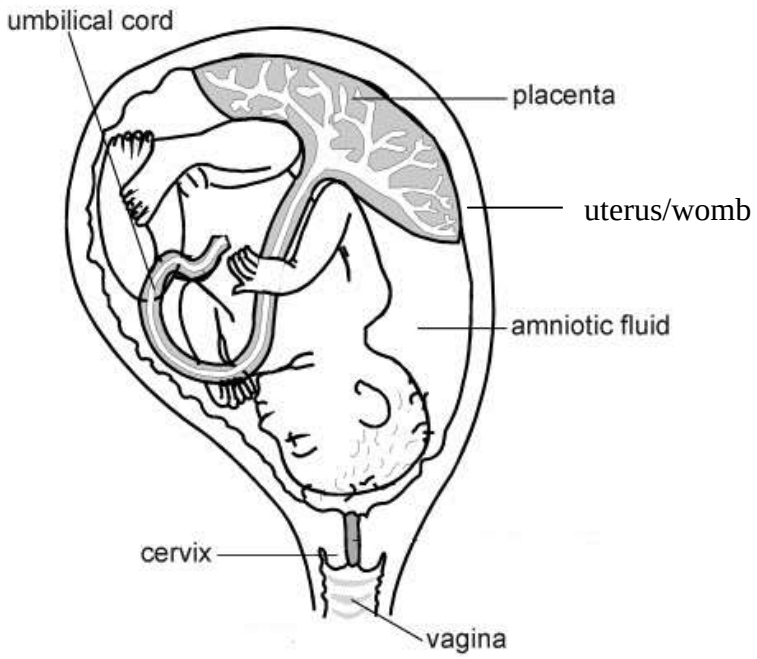
d. These diagrams shows two cells. Name these cells.

Cell (i): _____ Cell (ii): _____

2 marks

12. This question is about reproduction in humans.

a. The diagram shows a baby growing inside the mother's body.



Which part:

(i) Can stretch as the baby grows? _____

(ii) Cushions and protects the baby from damage? _____

2 marks

b. Complete the following sentences. Each word can be used once, more than once or not at all.

male	fertilisation	female	nine	smoke	five	tail	head

Sperms are produced in the _____ body and eggs are produced in the _____ body. The sperm has a _____ to swim to the egg. When egg and sperm meet, _____ takes place. The baby takes _____ months to develop. Pregnant women are advised not to _____ as this can harm their baby.

6 marks