DIRECTORATE FOR QUALITY AND STANDARDS IN EDUCATION
Department of Curriculum Management
Educational Assessment Unit

LEVELS

5 – 6 – 7 – 8

Annual Examinations for Secondary Schools 2015

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

Name: _____ **Class:** _____

ANSWER ALL QUESTIONS

1. Jacob and Abigail wanted to investigate water. The first thing they did was to heat 100 ml of water until it boiled and observed what happened.

   a) Underline TWO (2) things that they used:

   spatula **beaker** **Bunsen burner** **funnel** **balance** (2 marks)

   b) Draw and name the apparatus that is used to measure the volume of water accurately.

   Name of apparatus: _____

   (2 marks)

   c) Complete the observations carried out by Jacob and Abigail.

   When the water started to boil, it changed into _____.

   The _____ showed that the boiling point of water is _____.

   (3 marks)

   d) During boiling, water changed its state of matter from a liquid to a gas.

   i. What is this change called? _____ (1 mark)

   ii. In the boxes below, draw the arrangement of the particles before and after this change.

   before after. (2 marks)

2. In another experiment, Jacob put water in a beaker and then dropped some small purple crystals in it. Very soon a purple colour was seen spreading through the water.

Complete Jacob's explanations about particles.

a. The crystal is a solid and the particles are very _____ together.

b. In water, the solid particles become loose and _____ between the particles of the water. So water particles have _____ between them.

(3 marks)

3. You have done a number of science experiments. These may include some of the following:

using indicators; test for hydrogen; test for oxygen; energy in food; energy transfer; measuring forces; friction; insulators and conductors.

` Choose ONE of the above and fill in the details of this experiment:

Title: _____

List of apparatus: _____

(1 mark)

Diagram of experiment:

(1 mark)

Result of experiment: _____

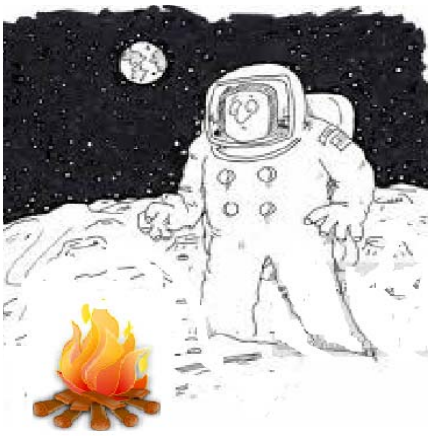
_____

_____

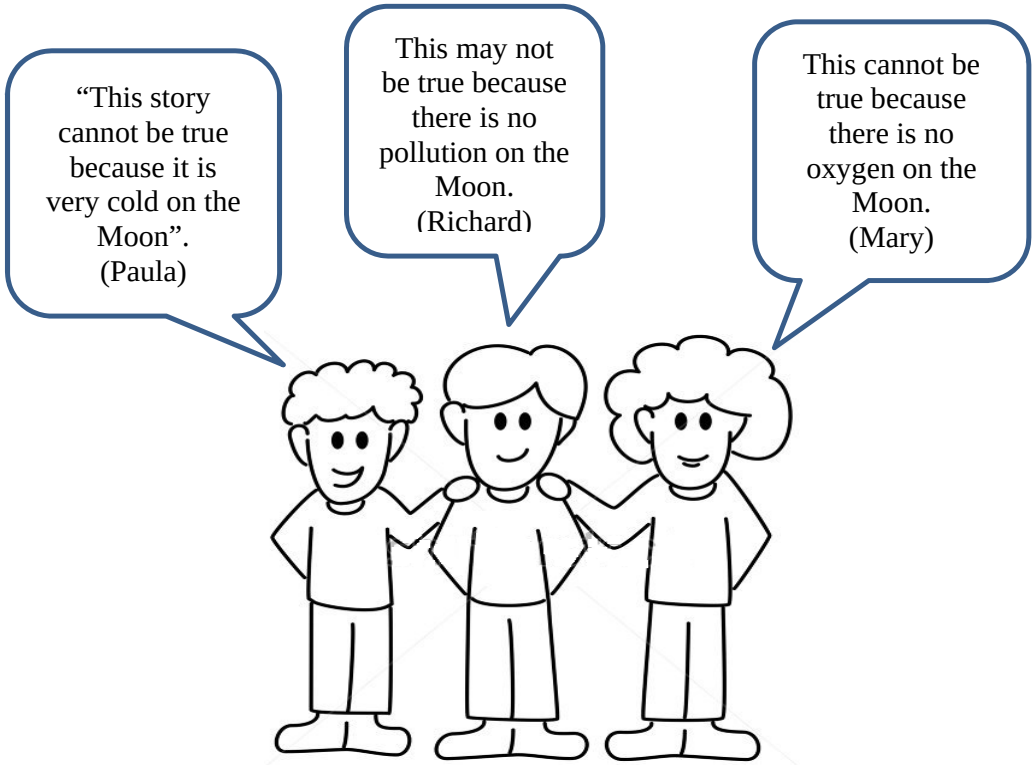
(2 marks)

4. Three friends, Paula, Richard and Mary were discussing what it feels like to be on the Moon. They know that it is very cold and that there is no oxygen on the Moon.

Mary told her friends that some astronauts made a fire to warm themselves. She is not sure whether this story is true.



Read the following cartoon and answer the questions:



a) Who is giving the correct reason? _____ (1 mark)

b) Use the fire triangle to explain why.

_____

_____

(2 marks)

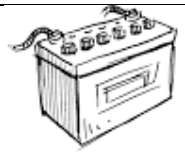
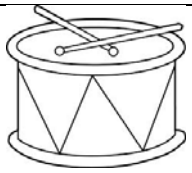
5. This question is about Energy.

a) Heat is one form of energy. Underline the word which is *not* a form of energy.

sound **bulb** **movement** **light** **stored**

(1 mark)

b) Match these objects to the form of energy they show by drawing straight lines.

car battery 	Stored
spinning top 	Light
drum 	Sound
	Movement

(3 marks)

c) Food provides energy to living things.

All food starts from plants during photosynthesis.

Complete this energy transfer.

_____ → plant leaves → _____

(form of Energy in) (form of Energy out)

(2 marks)

6. This question is about acids and alkalis. Write TRUE or FALSE:

a. Acids taste bitter: _____

b. Litmus is a good indicator because it gives you the pH of a liquid: _____

c. pH 9 shows a weak alkali: _____

d. All acids contain hydrogen: _____

e. A wasp sting has a pH of about 10. You could treat it best using a weak acid: _____

(5 marks)

7. Look at the following pictures.

a car

an ant

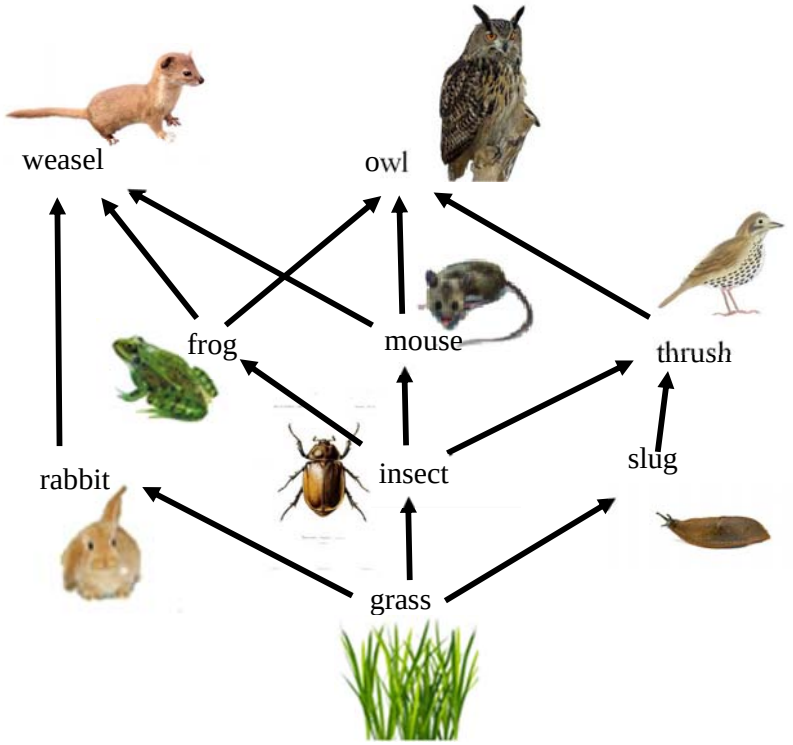
a) Which of the following actions are done by the ant AND the car.
Mark with a tick (✓).

It moves. ☐
It produces waste. ☐
It reproduces. ☐
It grows. ☐

(2 marks)

b) Answer TRUE or FALSE.
An ant can do all the actions shown in question (a). _____ (1 mark)

8. Look at this food web and answer the following questions. Note that the pictures are not to scale.



a) Find two invertebrates. _____ _____ (2 marks)

b) Name a herbivore. _____ (1 mark)

c) Which animal is an amphibian? _____ (1 mark)

d) The weasel and the rabbit belong to the same vertebrate group.

Name the group and give one characteristic of this group.

Group _____ (1 mark)

Characteristic _____ (1 mark)

e) Write a food chain which includes the owl.

_____ (2 marks)

f) Name one prey of the thrush. _____ (1 mark)

g) Write one adaptation that the owl has to help it catch its prey.

_____ (2 marks)

9. This question is about forces.

a) Complete the sentences.

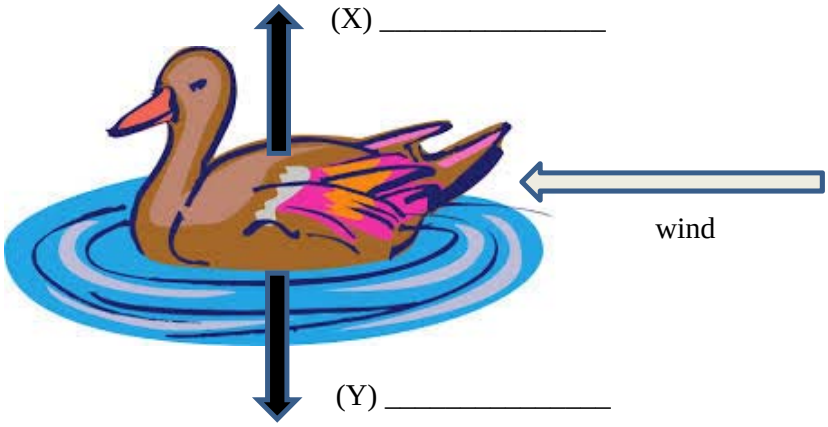
Forces are measured using a _____.

The units of force are _____.

(2 marks)

Now look at the following situation.

b) A duck is moving forward at a steady speed in a pond.



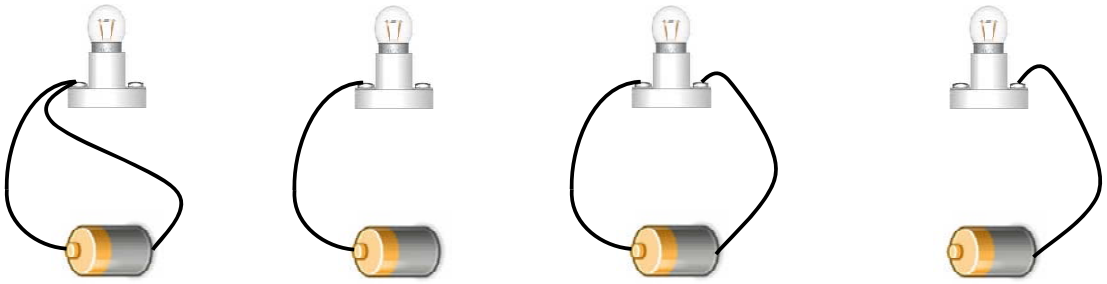
i. Name the two forces (X) and (Y) as shown in the diagram. (2 marks)

ii. Wind starts blowing on the duck as shown. What effect does this force have on the duck? Underline the correct answer.

- It stops her.
- It slows her down.
- It does not affect her speed.
- It speeds her up.

(1 mark)

10. Rachel and Jake are testing the following different electrical circuits.



A **B** **C** **D**

a) Which of the above circuits will make the bulb light up? _____ (1 mark)

b) Use symbols to draw a circuit diagram of this correct circuit.

(3 marks)

c) From the above diagrams, choose ONE circuit which will not work.
Describe why this circuit will not work.

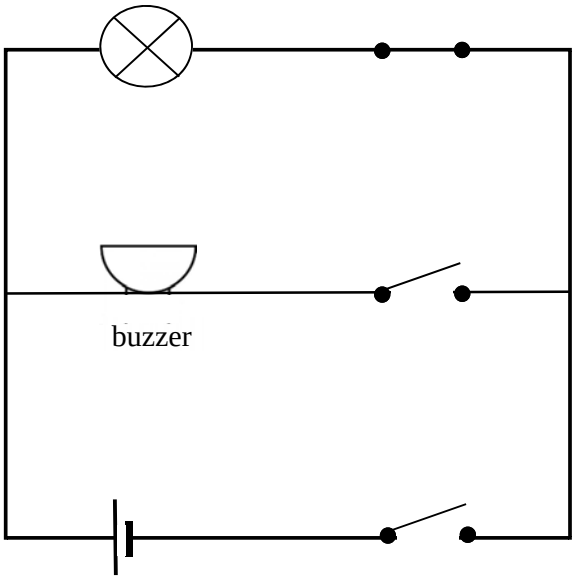
Circuit: _____

Reason: _____

_____

(2 marks)

d) Rachel and Jake added some electrical components to one of the circuits.
This is the circuit diagram showing the arrangement of the components.



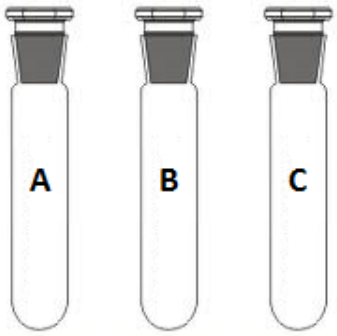
i. Is this a parallel or a series circuit? _____ (1 mark)

ii. Which sentence about the bulb and the buzzer is correct?
Tick (✓) the correct answer.

- They are both 'on' ☐
- They are both 'off' ☐
- The bulb is 'on' and the buzzer is 'off' ☐
- The bulb is 'off' and the buzzer is 'on' ☐

(1 mark)

11. A group of students are presented with the following test tubes, A, B and C as shown in the diagram.



These test tubes are filled with a gas.
One contains air, another contains oxygen and the other contains hydrogen.

The students are asked to identify each gas.

a) Some students decide to carry out the following tests.

Do you think their ideas are right?

For each test underline RIGHT or WRONG. Give a reason for your answer.

Test 1:

"We can distinguish them from their colour." RIGHT / WRONG

Reason: _____

(2 marks)

Test 2:

"We have a very accurate balance. We can measure their mass." RIGHT / WRONG

Reason: _____

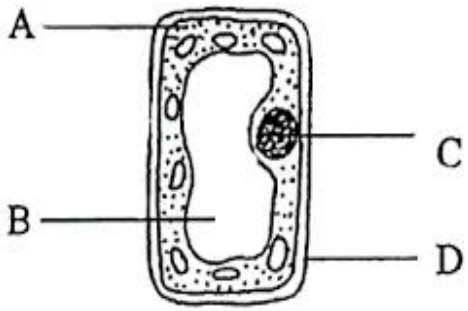
(2 marks)

b) One student has a better idea to test the gases, by putting a lighted splint in each gas. Complete this table showing the results of this experiment and thus be able to identify the three gases.

Test tube	Result	Name of gas
A	The splint burns for a while and then goes out.	
B		Hydrogen
C	The flame burns brighter.	

(3 marks)

12. Karen was looking at some cells through a microscope and she saw this image.



Answer the following questions.

a) Is this cell taken from an animal or from a plant? _____ (1 mark)

b) Name the parts labelled:

C _____ B _____ (2 marks)

c) What is the function of Part D?

_____ (1 mark)

d) Part A is found in all cells.

Is this True or False? _____ (1 mark)

13. From the following words, find the name of the human organ described in each sentence.

heart	kidney	brain	intestine	stomach	lungs

a) The air fills these organs when we breathe in.

_____ (1 mark)

b) Swallowed food goes in here. _____ (1 mark)

c) This organ pushes blood around the body. _____ (1 mark)

d) When you are thinking you are using this organ. _____ (1 mark)

14. This question is about human reproduction.

a) Draw a sperm cell in the space below.

(2 marks)

b) Explain why the sperm has this special shape.

_____ (1 mark)

c) Match these words to their meaning. Write the number in the middle column.

1. fertilisation		The organ that produces sperms
2. ovulation		This allows food and oxygen to pass to the baby.
3. testis		When an egg is released from the ovary
4. uterus		When an egg and a sperm join together
5. placenta		The place where the baby grows

(5 marks)

d) In adolescence many changes take place in boys and girls.

Give one change that takes place in:

Boys only: _____

_____ (1mark)

Girls only: _____

_____ (1mark)

Both boys and girls: _____

_____ (1mark)

END OF PAPER. CHECK YOUR WORK AGAIN.