

**FORM 1**

**INTEGRATED SCIENCE**

**TIME: 1h 30min**

**Name:** \_\_\_\_\_

**Class:** \_\_\_\_\_

**ANSWER ALL QUESTIONS**

1. This question is about experiments and safety in science.

a. Write down TWO safety rules which are important in a science laboratory.

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

( 4 marks)

b. Read the information and answer the questions below:

*Steve is heating  $100\text{cm}^3$  of water in a beaker. When the temperature of the water is  $50^\circ\text{C}$ , Steve adds a few drops of food colouring to the water. The water becomes green.*



(i) Copy ONE sentence which shows the result of this experiment.

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

(1 mark)

(ii) Write down the names of FOUR pieces of science apparatus you see in the picture.

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

(4 marks)

(iii) Write down the names of any TWO other pieces of science apparatus required for this experiment but not shown in the picture.

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

(4 marks)

2. Marie and Jake were taking some measurements. By mistake Jake mixed up his readings. Draw lines to match the two columns.



### Measuring...

The mass of a 12 year old student

The temperature of tap water

The length of the teacher's desk

The mass of a school bag

The temperature of cold water

### Results

155cm

4.5kg

4°C

15°C

48kg

(5 marks)

3. a. Look at the list of things. Sort them into TWO groups.

tree      Sun  
water     soil  
bird

Living things	Non-living things

(5 marks)

- b. Animals are living things. Which THREE things do all animals do? Tick (✓) three boxes.

grow ☐  
swim ☐

get rid of waste ☐  
lay eggs ☐

fly ☐  
move ☐

(3 marks)

- c. Vertebrates are animals with a backbone. Underline the correct statement about each vertebrate group.

- (i) Mammals are (WARM / COLD) blooded animals.
- (ii) Reptiles are covered with (A DAMP SKIN / SCALES).
- (iii) (ALL / MOST ) birds can fly.
- (iv) (FROGS / LIZARDS) are amphibians.
- (v) Fish are (WARM / COLD) blooded animals.

(5 marks)

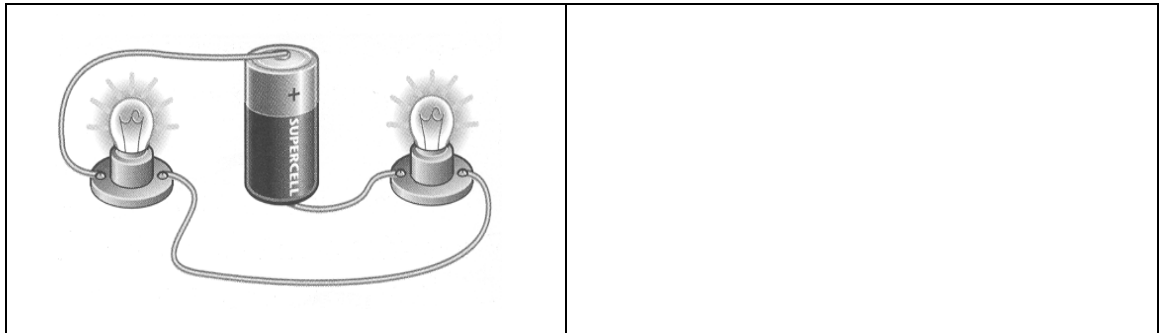
4. This question is about electrical circuits.

- a. In the table below draw the circuit symbols to show a bulb, a cell (battery), and a wire.

a bulb	a cell (battery)	a switch	a wire

(4 marks)

- b. Use symbols to draw a circuit diagram of the following.

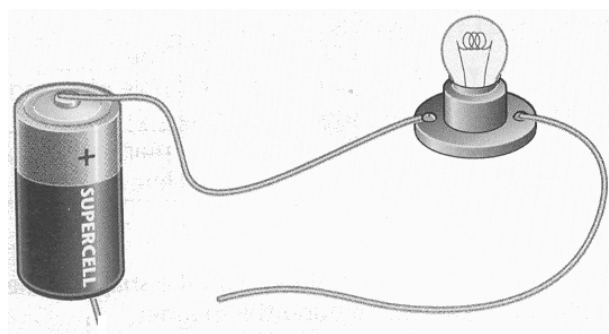


(3 marks)

- c. Circuit 2 is incomplete. Paula tries to light up the bulb by completing the circuit using different objects. She uses:

**a plastic ruler    an iron nail    a rubber    a metal spoon    an aluminium foil**

**Circuit 2**



Complete the table by putting each of the above objects in the correct column.

<b>Column A:</b> The bulb lights up with	<b>Column B:</b> The bulb does not light up with

Objects in column A are called \_\_\_\_\_.

Objects in column B are called \_\_\_\_\_ (5, 2 marks)

5. This diagram shows a power station which uses coal to produce electricity.



- a. Fill in the blanks by using some of the following words. Each word can be used once, more than once or not at all.

**stored   movement   steam   electricity   ice   fossil   heat**

Coal and oil are examples of \_\_\_\_\_ fuels. They are formed from the remains of animals and plants that died millions of years ago. When coal or oil are burnt they give up their \_\_\_\_\_ energy as heat. In the boiler, the heat turns water into \_\_\_\_\_. This turns the turbine blades like in windmills. When this happens the turbines turn a generator which produces \_\_\_\_\_.

(4 marks)

- b. Draw lines to match each energy resource to the correct description.

**Energy resource**

**Description**

Solar power

Energy from waves on the sea

Hydroelectric power

Energy from hot rocks underground

Wind power

Energy from sunlight

Wave power

Energy from moving air

Geothermal power

Energy from water moving downhill

(5 marks)

6. Energy can be changed from one form to another. Fill in the blanks to complete the main energy transfers.

electrical energy



\_\_\_\_\_

\_\_\_\_\_



\_\_\_\_\_

stored energy



\_\_\_\_\_

\_\_\_\_\_



heat energy + \_\_\_\_\_

(6 marks)

7. Three students are writing down sentences about **Solids, Liquids and Gases**.

These are some of their sentences. Say whether each sentence is **TRUE** or **FALSE**.



a. Materials are made of particles.

\_\_\_\_\_

b. Particles in a solid are moving about.

\_\_\_\_\_

c. Particles in a liquid are close together.

\_\_\_\_\_

d. A solid is changed to a liquid by heating.

\_\_\_\_\_

- e. A liquid is changed to a gas by cooling. \_\_\_\_\_
- f. The change from a gas to a liquid is called freezing. \_\_\_\_\_
- g. The change from a liquid to a gas is called evaporation \_\_\_\_\_
- h. The change from a solid to a liquid is called melting. \_\_\_\_\_

(8 marks)

8. There are different methods of separating mixtures. For example:

**filtration    evaporation    distillation    chromatography    by a magnet**

Which is the easiest way of separating these mixtures to obtain the material required?

	Mixture	Material required	Separating method
a.	Sea water	salt	
b.	Soil and water	soil	
c.	Iron and sand	iron	
d.	Sea water	water	
e.	sand and water	sand	
f.	glass and water	water	

(6 marks)

9. This question is about chemicals

- a. Fill in the blanks, choosing words from the following list. Each word can be used once, more than once or not at all.

**compound    elements    water    particles    mixture    metal    nonmetal**

- (i) \_\_\_\_\_ are the smallest parts of matter.
- (ii) \_\_\_\_\_ contain only one type of particle.
- (iii) Copper is an example of a \_\_\_\_\_.
- (iv) Oxygen is an example of a \_\_\_\_\_.
- (v) Salt is made up of two different elements joined together. It is an example of a \_\_\_\_\_.

(5 marks)

b. Write down the name of the elements with these symbols:

O \_\_\_\_\_

S \_\_\_\_\_

C \_\_\_\_\_

N \_\_\_\_\_

(4 marks)

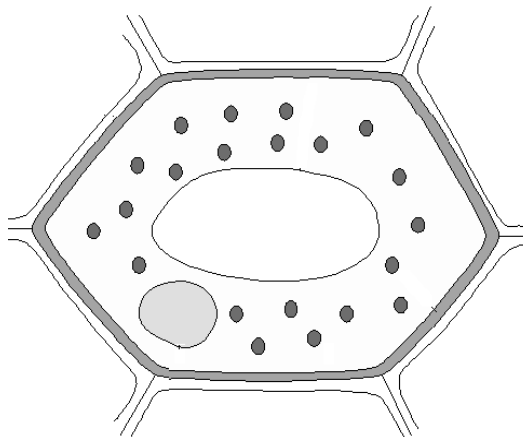
c. Elements combine to make a wide variety of compounds.

Underline the compounds in this list:

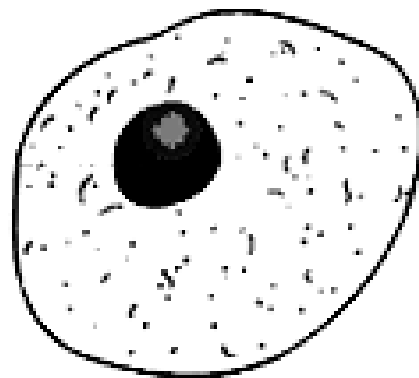
**hydrogen, sodium, water, sodium chloride, carbon dioxide**

(3 marks)

10. This question is about cells. The following diagram shows two cells. The diagram is not to scale.



**CELL A**



**CELL B**

a. (i) Which cell is an animal cell? \_\_\_\_\_

(ii) Which cell is a plant cell? \_\_\_\_\_

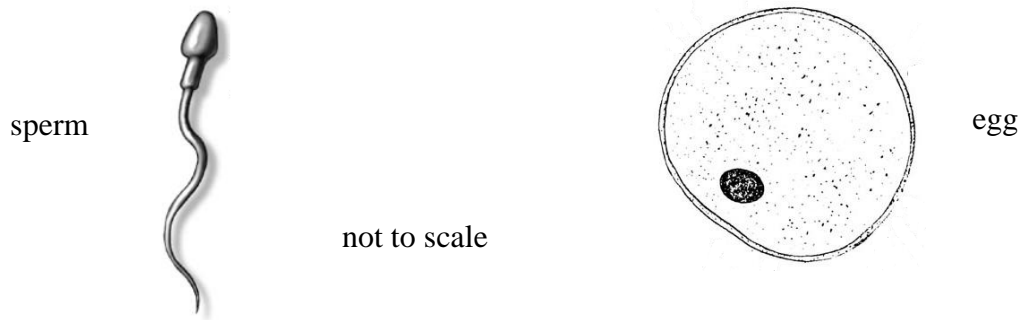
(2 marks)

b. Underline the parts which are usually found in an animal cell.

**cell membrane   vacuole   cell wall   cytoplasm   nucleus   chloroplast**

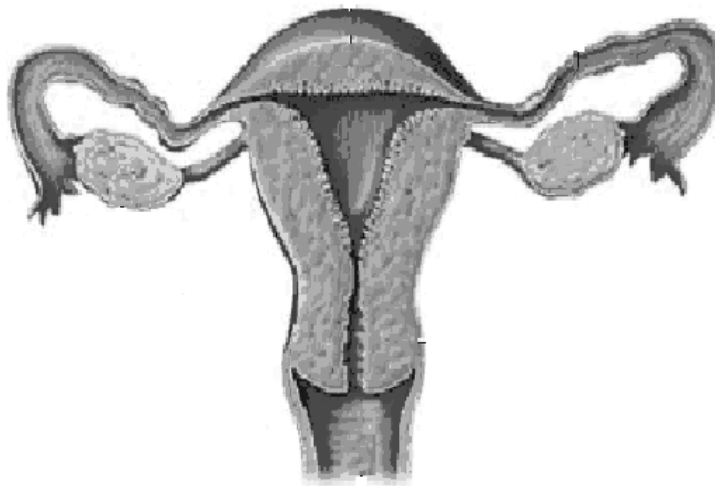
(3 marks)

11. This question is about the male and female reproductive system.



- What is a sperm? \_\_\_\_\_ (1 mark)
- Which part of the female reproductive system produces the egg?  
\_\_\_\_\_ (1 mark)
- Which part of a sperm cell is used to help it swim? \_\_\_\_\_ (1 mark)
- The following diagram shows the female reproductive system. Use the following words to label the diagram.

**ovary      uterus      vagina      cervix      oviduct (fallopian tube)**



(5 marks)

- On the diagram, mark with a letter X, the place where the foetus (young baby) develops?

(1 mark)