

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

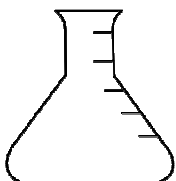


Name: _____ **Class:** _____

ANSWER ALL QUESTIONS

1. In a science laboratory we find objects that are used for experiments.

a. What do we call these objects? _____ (1 mark)

b. Match these objects with their name. (3 marks)

Object			Name
i)			Bunsen burner
ii)			Pipette
iii)			Conical flask

c. In the boxes below draw:

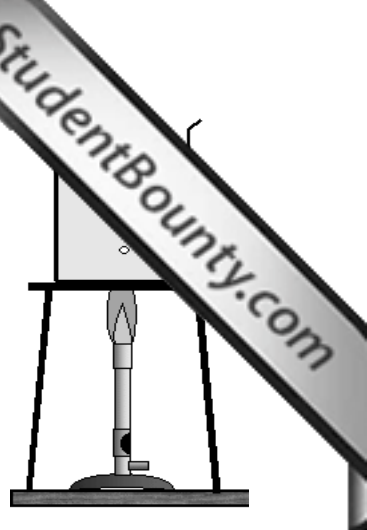
a funnel

a thermometer

(2 marks)

d. Read the information and answer the questions.

Paula is heating 50cm³ of a flammable liquid in a beaker. She wears safety glasses and keeps a low flame. She measures the temperature of the liquid. The temperature is 40⁰C. Paula sees some bubbles in the liquid.



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

_____ (1 mark)

(ii) The liquid is flammable. What does this mean?

_____ (1 mark)

(iii) Write down one thing which Paula does to carry out the experiment safely.

_____ (1 mark)

(iv) Write down the name of any other piece of science apparatus required for this experiment but not shown in the picture.

_____ (1 mark)

(v) Closing the gas tap will make the flame go off. Which part of the fire triangle is being removed when the gas tap is closed?

_____ (1 mark)

2. a. Write **TWO** things which all living things can do.

_____ (2 marks)

b. Tick (✓) the correct sentences.

Invertebrates are animals with a backbone.

☐

Mammals and birds are warm blooded.

☐

Only reptiles lay eggs.

☐

The frog is an amphibian.

☐

Fish have fins and gills.

☐

(3 marks)

- c. The bat is a mammal and yet it flies. Give **TWO** reasons why the bat is a mammal and not a bird.

(2 marks)

3. Use the following words to fill in the table about living organisms and their habitats:

oak tree starfish cactus frog

LIVING THING	HABITAT
	forest
	desert
	sea
	pond

(4 marks)

4. This question is about plants.

- a. Underline the correct answer.

- (i) Plants make food in the (flowers / leaves).
(ii) Seeds are produced by the (roots / flowers).

(2 marks)

- b. Explain why

- (i) trees in a valley grow tall.

(1 mark)

- (ii) cactus plants in a desert grow longer roots.

(1 mark)

5. The following question is about cells.

- a. Underline the correct answer.

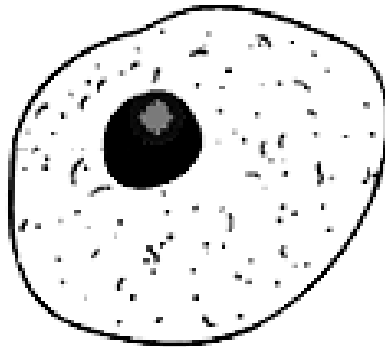
- (i) A (lens / microscope) is used to observe small flowers.
(ii) A (lens / microscope) is used to observe cells.

(2 marks)

b. The following diagram shows an animal cell.

(i) Label these parts: **nucleus**, **cell membrane**, **cytoplasm**.

(3 marks)



(ii) Which part controls what goes in and out of the cell?

_____ (1 mark)

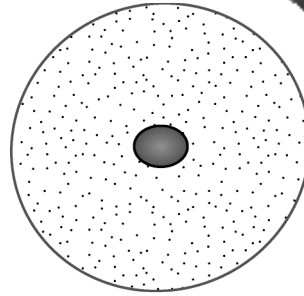
c. Plants are also made of cells.

Draw a plant cell and label **THREE** parts which are also found in animal cells.

(5 marks)

6. This question is about reproduction.

a. (i) What is the name of this cell?

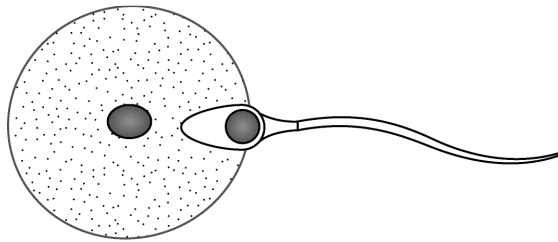


(ii) Underline the correct answer.

This cell is found in (males / females) and it is made in the (uterus / testis / ovaries).

(2 marks)

b. Look at this diagram.



(i) What process is shown in the diagram? _____ (2 marks)

(ii) What is the name of the place where a baby develops in the body?

(1 mark)

c. Answer **TRUE** or **FALSE**.

(i) A baby takes about 9 months to develop.

(ii) Oxygen passes from the mother to the baby.

(iii) If a pregnant woman smokes, the baby will not be affected.

(iv) Food cannot pass from the mother to the baby.

(4 marks)

7. This question is about energy.

a. Underline **THREE FORMS** of energy from the following.

bulb stored fuel bicycle movement electricity

(3 marks)

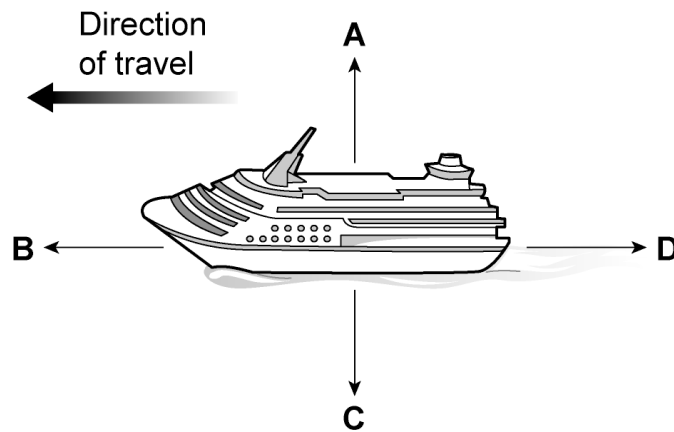
b. Underline the correct answer.

(i) Nuts burn because they contain (minerals, calcium, energy).

(ii) Energy is measured in (degrees celcius, newtons, joules).

(2 marks)

d. The diagram shows the forces acting on this moving cruise ship.



(i) The ship is travelling at a steady speed in the direction shown. Which **TWO** forces must be balanced? _____ and _____ (2 marks)

(ii). If force C is greater than force A what will happen to the ship?
_____ (1 mark)

(iii) The ship speeds up. Which of the following is true? Tick (✓) the correct answer.

- Force B is zero. ☐
- Force B is greater than force D. ☐
- Force D is equal to force B. ☐
- Force D is greater than force B. ☐

(1 mark)

8. a. Fill in the table by writing down the meaning of each electrical symbol.

i) 	ii) 	iii)

(3 marks)

- b. The diagram below shows a simple electrical circuit. Is this a series or parallel circuit?

_____ (1 mark)

- c. Use circuit symbols to draw a circuit diagram for this circuit.

(3 marks)



- d. If another battery is added to this circuit, what will happen to the brightness of the bulbs? _____ (2 marks)

- e. If another bulb is added in series in this circuit, what will happen to the brightness of all the three bulbs? _____ (2 marks)

- f. One of the wires of this circuit is broken.

- (i) Which of these objects would you use to complete the circuit?

Underline your answer.

a piece of string a plastic ruler a silver chain

(1 mark)

- (ii) Give a reason for your answer.

_____ (1 mark)

9. Pat did some experiments in the laboratory. She came across some chemicals.

- a. What is the meaning of the following labels?



(i) _____



(ii) _____

(2 marks)

Pat tested some different solutions using an indicator. These are her results:

Solution	pH
A	7.0
B	7.5
C	6.8
D	8.5
E	4.0

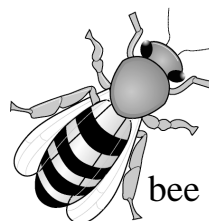
b. From the table, find:

- (i) a neutral solution. _____ (1 mark)
- (ii) an acidic solution. _____ (1 mark)
- (iii) an alkali solution. _____ (1 mark)

c. Bees and wasps both use their sting to defend themselves.



wasp sting: pH 10



bee sting: pH 2

(i) A bee sting has a pH of about 2. Tick the box that best describes a bee sting.

☐

A weak acid

☐

A strong alkali

☐

A strong acid

☐

A weak alkali

(1 mark)

(ii) The table shows the pH of some household chemicals.

Household chemical	pH
Vinegar	4
Water	7
Camomile	8

Which of these chemicals would you use to treat:

a wasp sting? _____

a bee sting? _____

(2 marks)

(iii) The above is an example of a neutralisation reaction. Give **ONE** example of a neutralisation reaction which is used daily.

(1 mark)

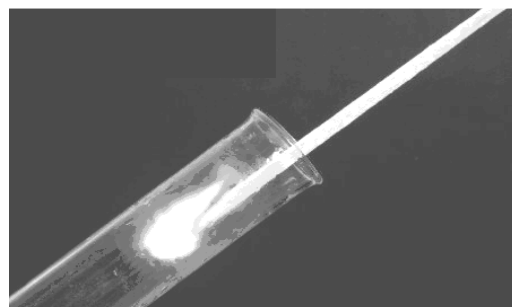
10. a. Tick (✓) the correct column, to show whether the following are chemical or physical changes.

	Chemical change	Physical Change
Heating ice		
Burning wood		
Melting wax		
Cooling hot water		

(4 marks)

- b. A student put a piece of magnesium into liquid X.

The liquid fizzed and a gas was given off. The diagram shows the test for this gas where a lighted splint is used and a 'pop' is heard.



- (i) What kind of chemical is liquid X? _____ (1 mark)
- (ii) What gas is produced in the reaction? _____ (1 mark)

11. Most objects are either a solid, a liquid or a gas.

- a. Give **ONE** example of each.

a solid: _____

a liquid: _____

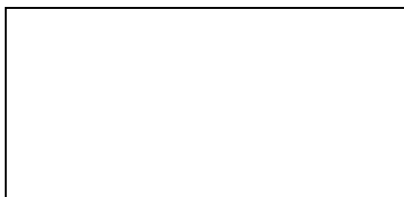
a gas: _____

(3 marks)

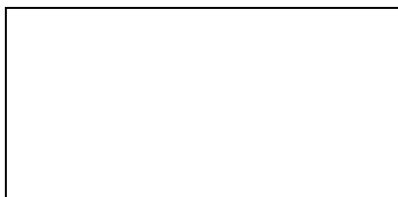
- b. When an ice cube is heated, it changes from a _____ to a liquid. We refer to this change as _____.

(2 marks)

- c. In the boxes, draw how the particles change their arrangement when the substance is heated.



to



(2 marks)

- d. The particles in solids, liquids and gases are arranged in different ways and so they behave differently. Explain why.

- (i) you can put a coin in water but not in wood.

(1 mark)

- (ii) you can smell a gas leak across the room.

(1 mark)