

Science

Test B

2004
40 min
40 marks

1. Flames

(a) Halim watches dead leaves in a bonfire. He can see smoke rising from the fire.

Tick **ONE** box to show what the smoke is.



Smoke is ...

liquid from
evaporation.

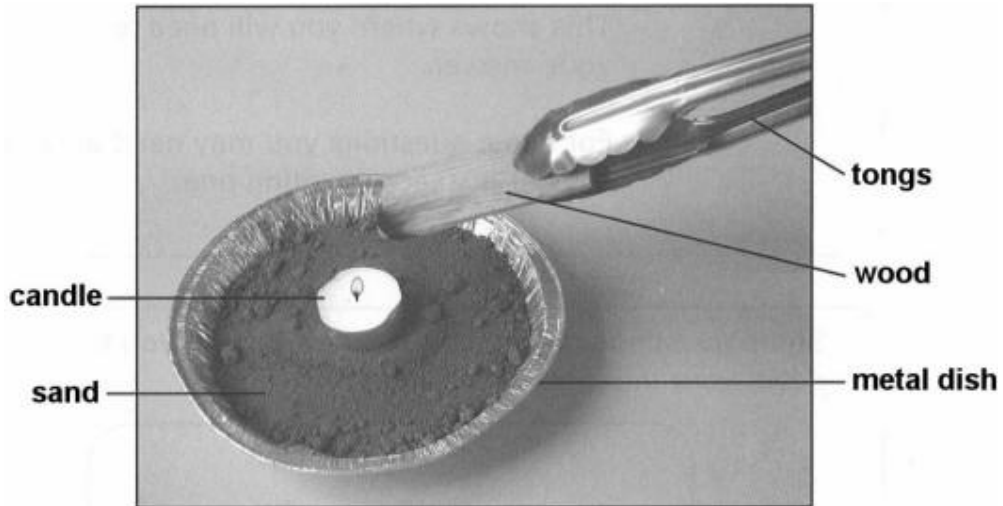
new materials made
by burning.

liquid from melting.

new materials made
by the leaves.

1 mark

(b) The next day, Halim's teacher holds some materials over a candle flame.



Describe **ONE** thing in the picture that Halim's teacher has done to help make the investigation safe.



.....

1 mark

(c) Halim records the results in a table.

Write **yes** or **no** in each row to show whether the changes are reversible.




Material	Does it burn?	Is the change reversible?
wood	yes	
bread	yes	

1 mark

(d) Halim wants to know what other materials will burn.

Tick the boxes next to all the materials below that burn in a candle flame.

One has been done for you.

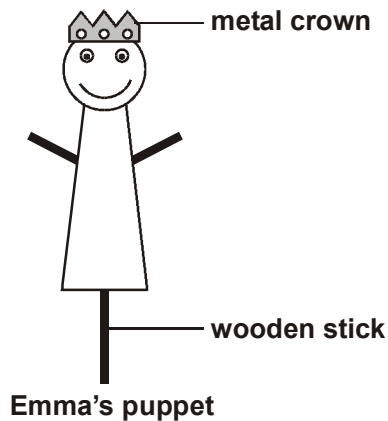
 cardboard	<input checked="" type="checkbox"/>	cotton wool	<input type="checkbox"/>
stone	<input type="checkbox"/>	kitchen foil	<input type="checkbox"/>
newspaper	<input type="checkbox"/>	steel wool	<input type="checkbox"/>

2 marks


2. Puppet show

(a) Emma makes a stick puppet. She draws a face on it.

The puppet has a metal crown. When Emma shines a light on the puppet, the crown looks shiny.



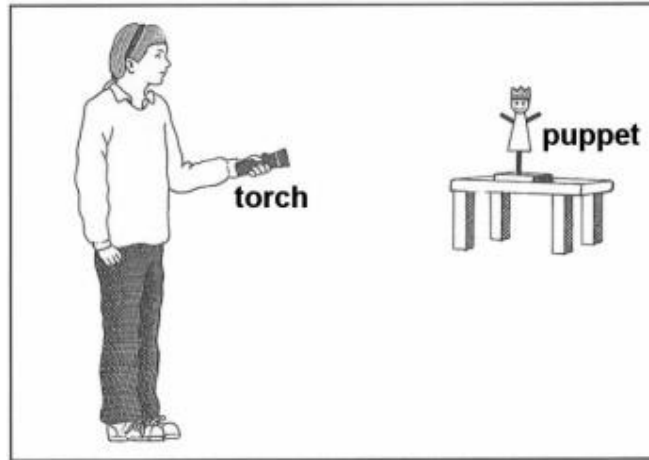
Why does the metal crown look shiny when the light is on it?



.....

1 mark

- (b) Draw **TWO** arrows on the diagram below to show how Emma can see the light shining on the puppet's crown.



2 marks

- (c) When the light shines on the puppet, Emma can see a shadow of the puppet on the wall behind.

Why does a shadow form behind the puppet when the light shines on it?

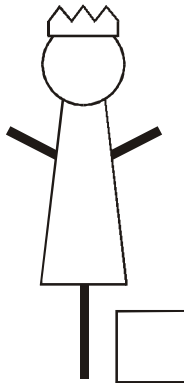
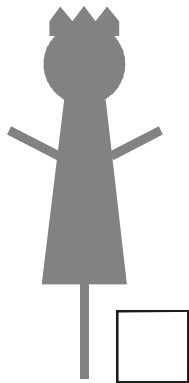
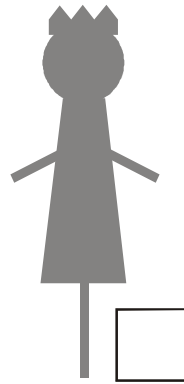
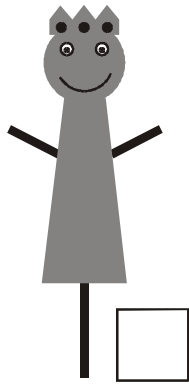


.....
.....

1 mark

(d) Which of the following shows the correct shadow of Emma's puppet?

Tick **ONE** box.



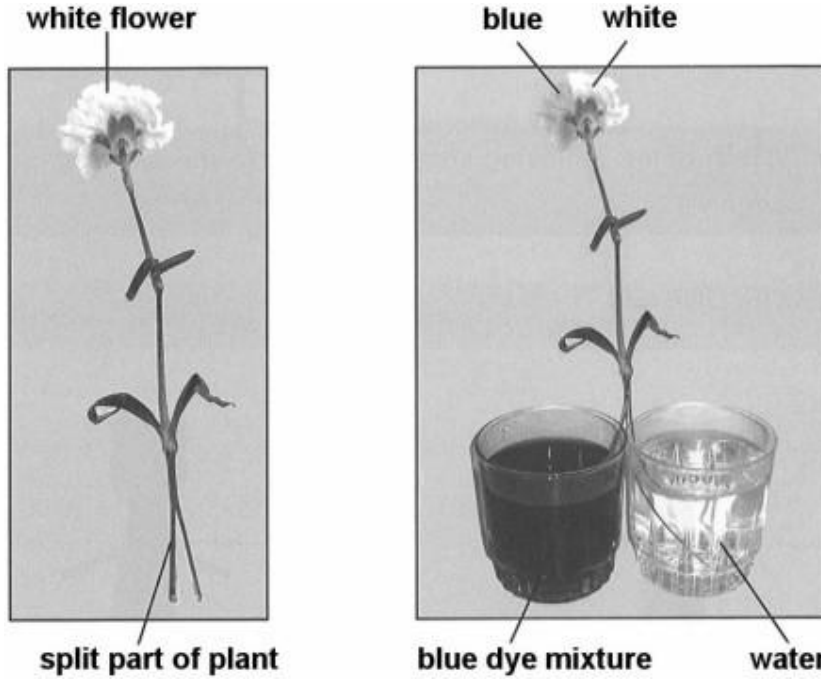
1 mark

3. Flowers

(a) Some children set up an investigation as shown below.


They split part of a plant in half.

They put one half in water and the other half in water mixed with blue dye.



After some time, half of the flower turns blue.

What part of the plant did the dye travel through to get to the flower?



1 mark


(b) Predict what would happen if the children put a bunch of white flowers into **red** dye.



1 mark

(c) For which life process is the **flower** important to the plant?

Tick **ONE** box.

 reproduction growth
 nutrition movement

1 mark

(d) Draw **three** lines to match each part of the flower to its function.

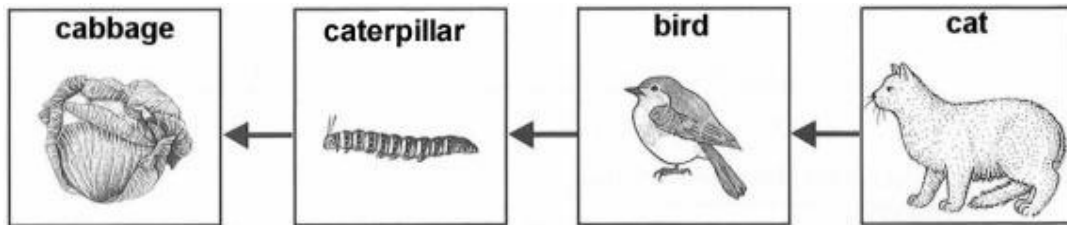


Flower part	Function
stamen	seeds are made here
ovary	produces the pollen
stigma	pollen collects here

1 mark

4. Nature walk

(a) Some children draw a food chain about living things they see in the garden. There is a mistake in their food chain.



What is the mistake in their food chain?



.....
.....

1 mark

- (b) The children correct their food chain. They make a table showing if each animal in the food chain is a predator, prey or both.

Tick **ONE** box in each row of the table to show whether each animal in the food chain is a **predator**, **prey** or **both**.



Animal	Predator	Prey	Both
caterpillar			
bird			
cat			

2 marks

- (c) Which word best describes the function of the **cabbage** in the food chain?

Tick **ONE** box.



fertiliser consumer
 organism producer

1 mark

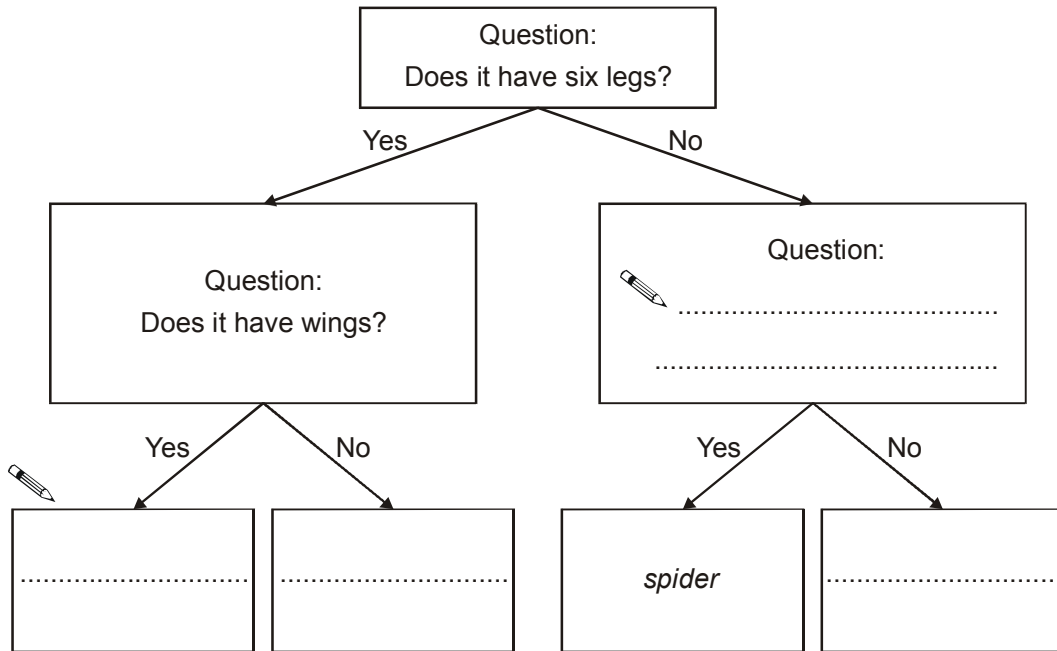
- (d) The children make a table about some other animals they found.

Animal	Where they found it	Number of legs	Number of wings
mayfly	near the pond	6	4
spider	in the grass	8	0
female glow-worm	in the grass	6	0
duck	near the pond	2	2

They use their table to make a key.

- (i) Use the table above to help you write in the missing question on the key below.
- (ii) Write the name of each animal from the table in the correct box on the key below.

One has been done for you.



2 marks

5. Dissolving sugar

- (a) Look at the picture of Luis using a thermometer to measure the temperature of some water.



What is wrong with the way he is trying to measure the temperature of the water?



.....

1 mark

- (b) Luis and Jack want to find out how the temperature of water affects the time taken for sugar to dissolve.

What is the **ONE** factor they should change as they carry out their investigation?



.....

1 mark

- (c) Name **ONE** of the factors they should keep the same to make their investigation fair.



.....


1 mark

- (d) They carry out their investigation 3 times and record their results.

Time taken for sugar to dissolve

Temperature of water (°C)	Time (minutes)		
	Test 1	Test 2	Test 3
30	10	9	11
40	8	12	9
50	7	7	8
60	6	6	7

For which temperature does one of the results seem unlikely?



°C

1 mark

- (e) Jack predicted that sugar will dissolve more quickly when the water is hotter.

- (i) Is Jack's prediction supported by the evidence in the table?

Tick **ONE** box.



Yes

No

- (ii) Use the evidence in the table to explain your answer.



.....
.....

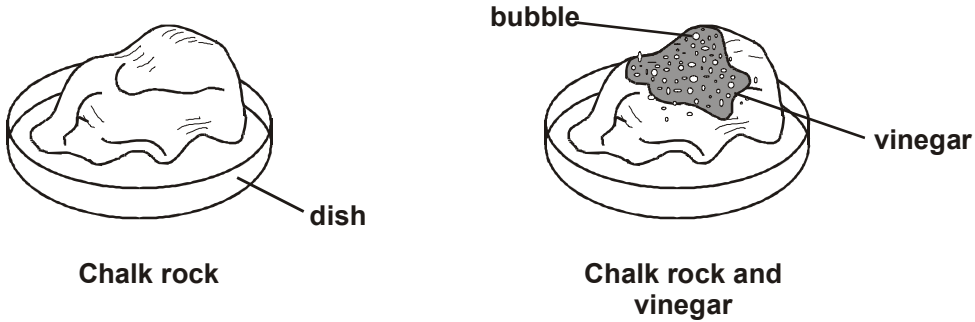
1 mark

6. Acid rain

(a) Sometimes rain mixes with pollution in the air to form acid rain.


Some children want to find out what happens when acid rain falls on rocks.

Vinegar can be used to show the effects of acid rain. The children add vinegar to chalk rock. The pictures below show what happens.



Bubbles are produced.

Write **true** or **false** next to each sentence below.

-  The change is non-reversible.
- The bubbles evaporate.

1 mark

(b) Write **solid**, **liquid** or **gas** next to each material in the table.



Material	Solid, liquid or gas?
inside the bubble	
vinegar	
chalk rock	

1 mark

(c) The children test more rocks. The table below shows their results.

Rock	Are bubbles produced when vinegar is added?
granite	no
sandstone	no
limestone	yes
slate	no
pumice	yes

Look at these pictures of a statue. The statue is in a city that has acid rain.




Statue when new



Same statue after 200 years

Use the table to name **ONE** rock that this statue could have been made from.

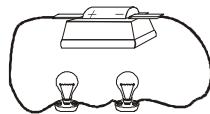


1 mark

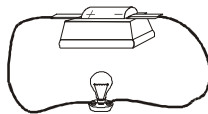
7. Circuits and sensors

(a) Class 6D makes different circuits using the same type of bulbs, motors with fans and cells (batteries).

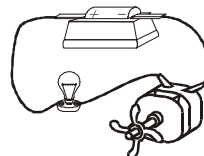
(i) Tick **ONE** box to show the circuit in which the bulb or bulbs are brightest.



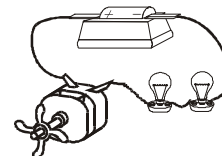
circuit 1



circuit 2



circuit 3




circuit 4



1 mark

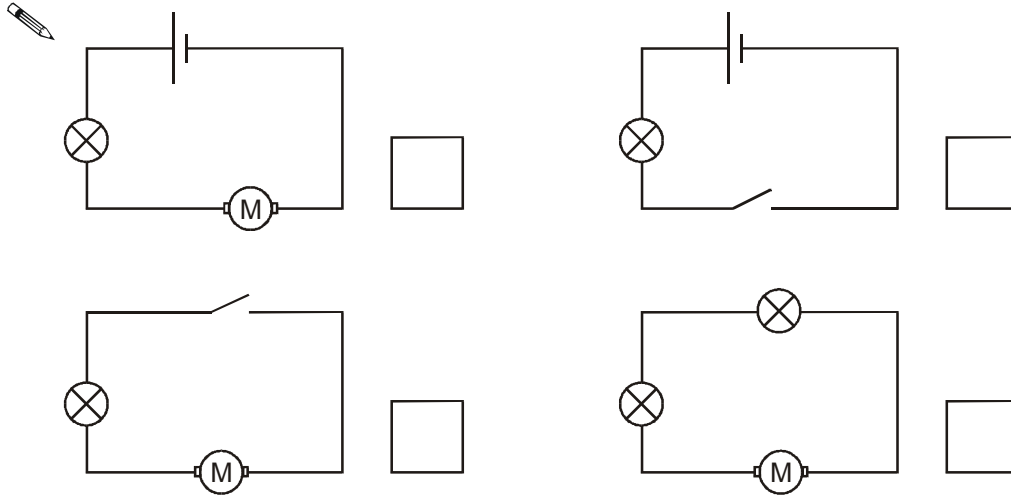
(ii) Explain why the circuit you chose has the brightest bulb or bulbs.



.....

1 mark

(b) Tick **ONE** box to show which circuit diagram below is correct for circuit 3.



1 mark

(c) Each of the circuits made by class 6D has one cell.

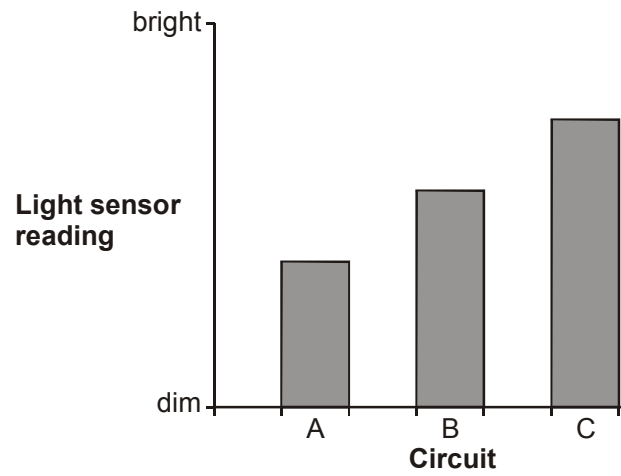
Complete the sentence below to explain the effect on the bulbs of adding a second cell to circuit 1.

 The bulbs will.....

1 mark

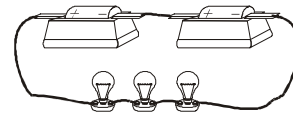
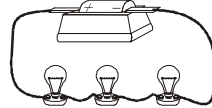
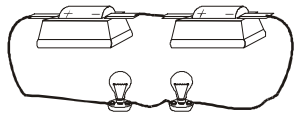
- (d) Class 6D made three new circuits. They used a light sensor to measure the brightness of one of the bulbs in each circuit.

The sensor gave the results on the graph below.



1 mark

Write **A**, **B** or **C** next to each circuit below to show which circuit gave each light sensor reading on the graph.



circuit

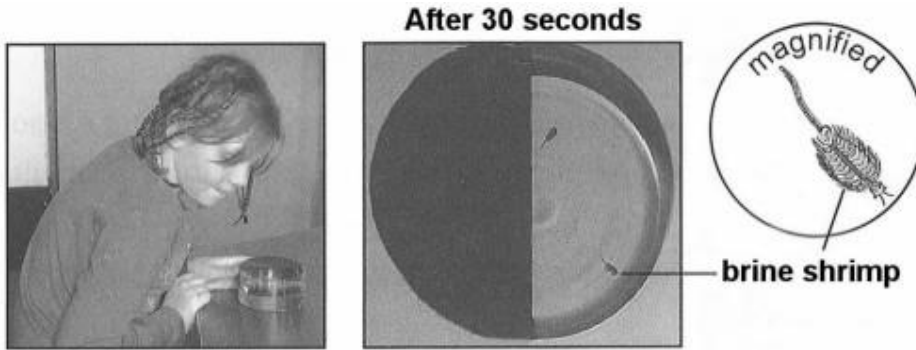
circuit

circuit


1 mark

8. Brine shrimps

- (a) Joanne is watching 5 brine shrimps in a container.
She has covered the container to make one half dark and one half light.



How many brine shrimps were in the dark after 30 seconds?



1 mark

- (b) Amy and Rebecca planned to investigate whether brine shrimps prefer to swim in the light or the dark.

	Amy's Plan	Rebecca's Plan
Step 1	Put 1 shrimp in one dish.	Put 10 shrimps in one dish.
Step 2	Watch the dish for 5 minutes.	Watch the dish for 1 minute.
Step 3	Record the amount of time the shrimp was in the light.	Count how many shrimps were in the light every 10 seconds.
Step 4	Compare the amount of time the shrimp spent in the light with the time spent in the dark.	Compare the number of shrimps seen in the light with the number out of sight in the dark.

Look at **Amy's** plan.

What measurements should Amy compare to decide whether shrimps prefer light or dark?



.....

1 mark

(c) Look at **Rebecca's** plan.

How did Rebecca work out how many brine shrimps were in the dark each time she looked?



.....
.....

1 mark

(d) Look at Amy's and Rebecca's plans.

(i) Which do you think is the better science plan?



Tick **ONE** box.

Amy's

Rebecca's

(ii) Explain why.

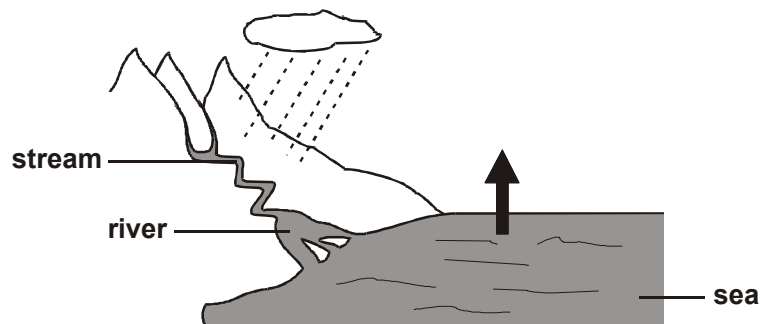


.....
.....
.....

1 mark

9. The water cycle

(a) This picture shows part of the water cycle.



Tick **ONE** box to say what the arrow shows.



cold water rising

water vapour condensing

water evaporating

gas changing to liquid

1 mark

(b) Tick **ONE** box in each row to show if each sentence is **true** or **false**.



Clouds form ...

True

False

from water produced by condensation.

from water vapour in the air.

1 mark

(c) In the water cycle, water from the sea becomes rain water.

Why is rain water **not** salty when it comes from salty sea water?



.....

.....

1 mark