

**FORM 2**

**INTEGRATED SCIENCE**

**TIME: 1h 30min**

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

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

**ANSWER ALL QUESTIONS**

1. a. Vinegar is sometimes put on food. It has a sour taste.

What does the taste tell you about vinegar?

Tick (✓) the correct box.

- ☐ It is poisonous.  
☐ It is an acid.  
☐ It contains sugar.

1 mark



- b. Red cabbage can be used to test acids and alkalis. It is bright red in acids and purple in alkalis.

- (i) What colour is it in lemon juice? \_\_\_\_\_ 1 mark

- (ii) Fill in the blanks. Some of the following words might help you.

<i>shape</i>	<i>colour</i>	<i>blue</i>	<i>red</i>	<i>orange</i>	<i>green</i>
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Substances, which change \_\_\_\_\_ when you add acids or alkalis, are called indicators. Litmus paper is one example. It is \_\_\_\_\_ in acids and \_\_\_\_\_ in alkalis. The universal indicator changes colour in acid and alkali. It is \_\_\_\_\_ in a neutral solution.

4 marks

- (iii) Strong acids and alkalis are dangerous. Why?

\_\_\_\_\_ 2 marks

c. The labels of three chemical bottles have fallen off. The labels read *Distilled Water*, *Sodium Hydroxide* and *Ammonia*.

- (i) Which indicator would you use to match the bottles with their labels? Underline the correct answer.

*Litmus Paper*

*Universal Indicator*

1 mark



- (ii) Why should you NOT taste the liquids to see which is which?

1 mark

d. Some people suffer from acid stomach. Medicines, such as *Milk of Magnesia*, reduce the pain.

- (i) Is *Milk of Magnesia* an acid or an alkali?

2 marks



- (ii) What is the reaction between the acid in the stomach and *Milk of Magnesia* called?

2 marks

2. Draw an arrow on each of the following diagrams to show the direction of the force named:

- a. The weight of a woman hanging from the bar.



- b. The force of the road on the tyres of a parked car.



- c. The force of friction between the shoes and the ground.



- d. The force of the bat on the ball.



4 marks

3. Steve rolls a ball of plasticene on the floor.  
The ball stops after some time.

- a. Why does the ball slow down and stop?

Tick (✓) the correct answer:

- ☐ Not enough strength is used.  
☐ The plasticene is soft.  
☐ An opposing force slows down the ball.



1 mark

- b. Does the ball roll further on a flat wooden surface or on grass?

\_\_\_\_\_

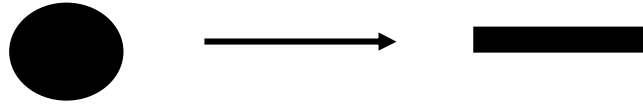
1 mark

Give a reason for your answer.

\_\_\_\_\_

2 marks

- c. Steve changes the shape of the plasticene ball by squashing it. It becomes flat.



- (i) Is there any change in the mass of plasticene? \_\_\_\_\_  
(ii) Is there any change in the weight of the plasticene? \_\_\_\_\_

2 marks

- d. Fill in the blanks:

He floats the plasticene in a bowl of water. The plasticene floats on the water because there is a force called \_\_\_\_\_ keeping it afloat.

2 marks

4. These are some facts about the Solar system. Write the correct word for each fact.

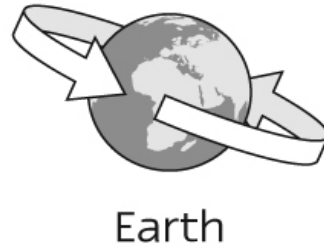
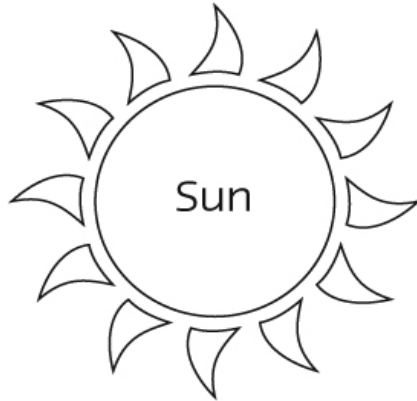
Each word can be used once, more than once or not at all.

<b>night</b>	<b>Sun</b>	<b>Venus</b>	<b>Mercury</b>	<b>Jupiter</b>	<b>a season</b>
<b>noon</b>	<b>gravity</b>	<b>24 hours</b>	<b>phases</b>	<b>Saturn</b>	<b>year</b>

a.	the changes in the appearance of the Moon as it orbits the Earth	
b.	this stops the Moon from moving away from Earth	
c.	a hot spherical star	
d.	the time taken by Earth to orbit the Sun	
e.	the time taken by Earth to spin once on its axis	
f.	the time when part of the Earth is facing away from the Sun	
g.	the biggest planet in the Solar system	
h.	the planet nearest to the Sun	
i.	the hottest planet in the Solar system	

9 marks

5. The following question is about the Sun and Earth.



- a. Fill in the blanks: The Sun gives out \_\_\_\_\_ and \_\_\_\_\_. 2 marks
- b. Earth spins on its axis. On the diagram draw the axis of the Earth. 2 marks

6. From a supermarket we can get many different foods.

- a. Give **THREE** reasons why we need food.

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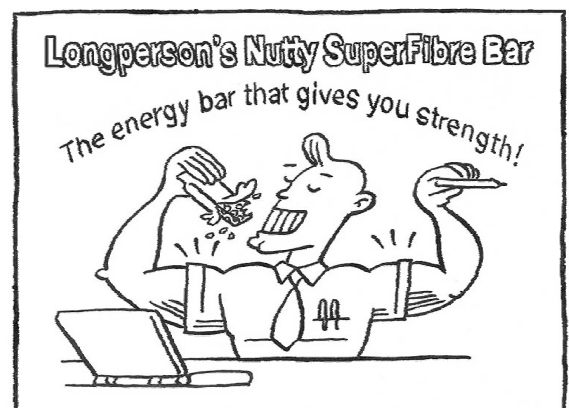
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3 marks

- b. A supermarket is selling a new chocolate bar. This poster is being used to advertise this new chocolate. The poster shows that the bar contains fibre. Why do we need fibre in our diet?

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2 marks

c. Tick (✓) **TRUE** or **FALSE** for each of these sentences.

(i) The chocolate bar in the poster is rich in carbohydrates.

TRUE

☐

(ii) Meat contains lots of carbohydrates.

☐
☐

(iii) Meat is also a good source of fibre.

☐
☐

(iv) Fats are a good source of energy.

☐
☐

(v) Carbohydrates are a good source of energy.

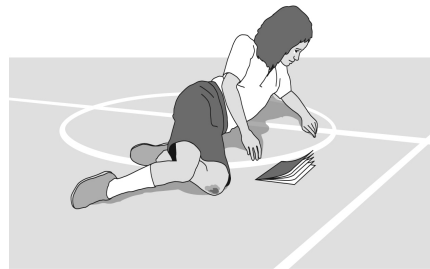
☐
☐

(vi) We need proteins as a source of energy.

☐
☐

6 marks

7. Paula fell over in her school playground and cut her knee badly. The school safety teacher cleaned the cut and put a plaster on it.



a. Name a type of microbe that could infect Linda's cut.

\_\_\_\_\_ 2 marks

b. A scab (cover) forms as the cut heals. Why is it important for this to happen?

Tick (✓) the correct answers.

☐

to stop the entry of microbes

☐

to produce more blood

☐

to stop further loss of blood

☐

to reduce pain

4 marks

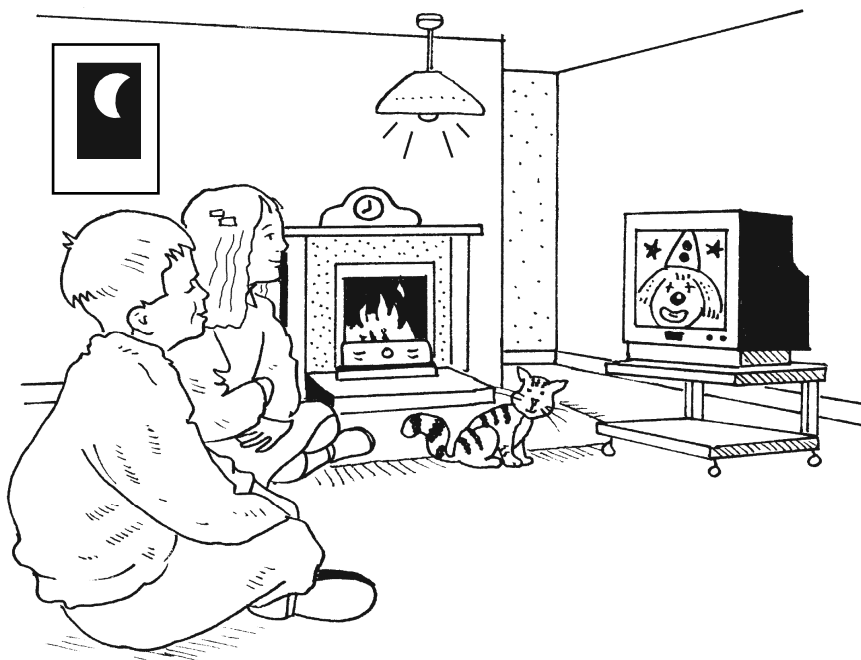
c. Fill in the blanks:

Some microbes might enter the blood. Special cells, called \_\_\_\_\_ blood cells destroy these microbes.

2 marks

8. a. Which **THREE** objects in the picture are sources of light?

\_\_\_\_\_ 3 marks



- b. On the diagram draw rays of light to show how the boy can watch television.

1 mark

- c. Draw rays of light to show how the girl can see the clock. (The clock is on the fireplace). 2 marks

- d. The children are seeing light and hearing sounds at the same time. Why does this happen? Tick (✓) the correct answer.

☐

The speeds of light and sound are always equal.

☐

The children cannot notice any difference because the TV is very close to them.

☐

Indoors, the speeds of light and sound are equal.

2 marks

- e. The moon can be seen through the window. Where does the light of the Moon come from? \_\_\_\_\_

1 mark



9. This question is about sound.

a. Complete the following sentences by matching the two columns.

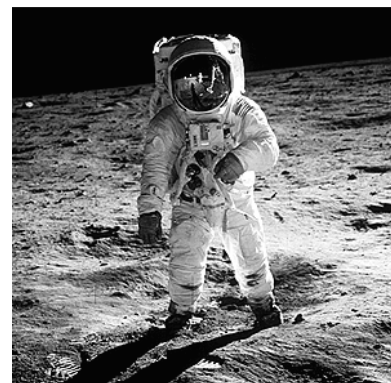
Column A	
(i)	Sound can travel through
(ii)	Sound cannot travel through
(iii)	Sounds are produced when particles
(iv)	A loud sound can cause
(v)	Sound travels fastest through

Column B	
	a vacuum.
	damage to the ear.
	solids, liquids and gases.
	a solid.
	vibrate.

5 marks

b. The picture shows an astronaut on the moon.

Write **TRUE** or **FALSE** near each of the following sentences.



- (i) There is no air on the Moon.
- (ii) The astronaut removes the helmet to speak.
- (iii) When talking to each other astronauts need to shout.
- (iv) Astronauts cannot hear each other because there is no gravity.
- (v) It is very quiet on the Moon.

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5 marks

10. This question is about burning.

a. Look at the diagram of the candle burning.

(i) What physical change is taking place?

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(ii) What chemical change is taking place?

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2 marks



b. Draw the fire triangle.

3 marks

c. Use the fire triangle to show which thing is removed when:

(i) a candle snuffer is placed over the lighted candle.

\_\_\_\_\_ 1 mark

(ii) a fire-fighter pours water onto a burning bush.

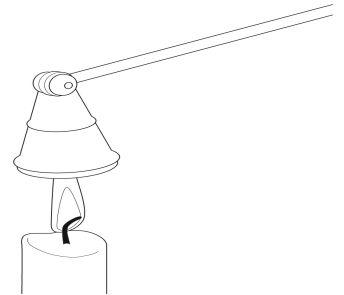
\_\_\_\_\_ 1 mark

(iii) in forests people cut down some of the trees to form 'fire breaks'.

\_\_\_\_\_ 1 mark

(iv) a fire blanket is put over a fire.

\_\_\_\_\_ 1 mark



11. The picture shows an old rusty bicycle.

a. Suggest the best way to prevent rusting in the bicycle's

(i) metal frame:

\_\_\_\_\_

(ii) metal chain:

\_\_\_\_\_



2 marks

b. Complete this sentence: Iron rusts when it reacts with \_\_\_\_\_.

2 marks

c. Sometimes aluminium is used instead of iron. Give **ONE** advantage of using aluminium. \_\_\_\_\_ 1 mark

12. Read these sentences and then answer the following questions:

*Tuna is a fast swimming fish. It survives in cooler waters and thus is found in a wider range of sea environments than other types of fish.*

*Tuna eats small fish or animals such as sardines, herrings, shrimps and shellfish. These in turn feed on plankton. Tuna is an important commercial fish. Sharks eat tuna*

*but the main enemy for tuna is overfishing. Some countries are enforcing laws and restricting of tuna fishing as research shows that tuna may become extinct.*



a. Write down **TWO** important adaptations found in tuna.

\_\_\_\_\_  
 \_\_\_\_\_ 2 marks

b. Use the above information to complete this food chain.

plankton → \_\_\_\_\_ → tuna → \_\_\_\_\_ 2 marks

c. Use this food chain to name

(i) an animal which is both a predator and a prey: \_\_\_\_\_

(ii) an animal which is only a predator: \_\_\_\_\_ 2 marks

d. Will there be more or less tuna if:

(i) all the sharks die out? \_\_\_\_\_

(ii) all sardines, herrings, shrimps and shellfish die out? \_\_\_\_\_

(iii) fishing of tuna stops? \_\_\_\_\_

3 marks

**- End of paper. Please check your work again -**