

FORM 2

INTEGRATED SCIENCE

TIME: 1h 30min

Name: _____

Class: _____

ANSWER ALL QUESTIONS

1. It is Steven's birthday. Steven looks at the candles on his birthday cake.



- a. The candles give out light. Underline THREE other objects that give out light.

mirror Moon Sun lit torch bulb computer monitor electric socket

(3 marks)

- b. On the diagram above, draw an arrow as a ray of light to show how Steven can see the candles. (Use a ruler for your drawings.)

(2 marks)

- c. Underline TWO correct explanations:

Steven's father is preparing some other food in another room. He is able to hear Steven's friends singing 'Happy Birthday' but he cannot see the light of the candles on his cake. This is because:

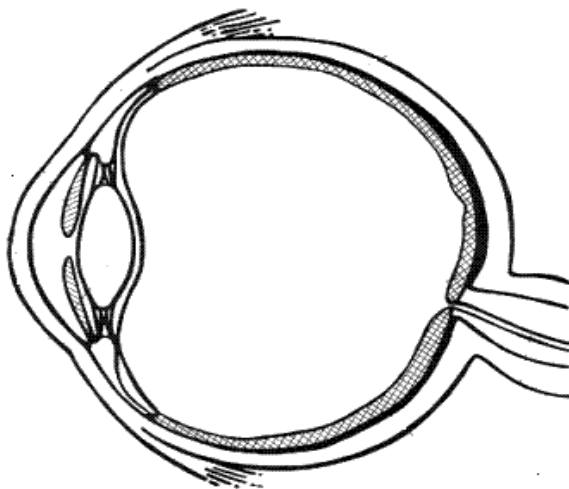
- light from the candles is not strong enough
- light does not level through the walls
- sound travels through the kitchen walls
- light travels faster than sound

(2 marks)

2. The following is a diagram of the human eye.

a. Use the following words to label the diagram.

pupil lens retina cornea nerve



(5 marks)

b. Underline the correct answer:

- i. On entering a dark room, the pupil (**gets bigger** / stays the same / gets smaller).
- ii. The (**lens** / cornea / retina) is the surface on which an image is formed.
- iii. The (**nerve** / cornea / lens) carries messages to the brain.

(3 marks)

3. Sort these substances into ACIDS and ALKALIS.

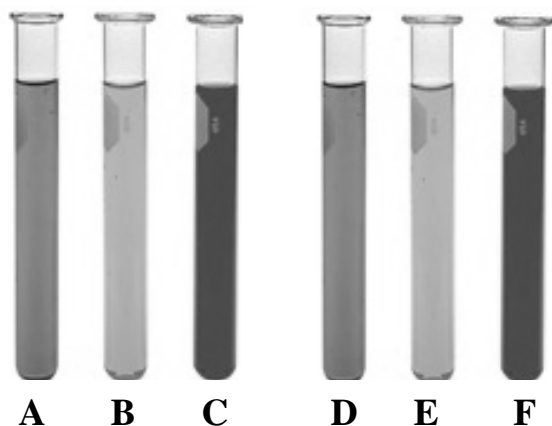
vinegar lemon juice oven cleaner washing up liquid
tomato sauce fizzy water bleach

Acids	Alkalis

(7 marks)

4. This question is about acids and alkalis.

The diagram shows six different test tubes containing water samples from six places. The pH of each water sample is shown in the table below.



Water sample	pH
A	8.0
B	7.0
C	6.0
D	7.5
E	5.5
F	6.5

- a. Which water sample is the **most acidic**? _____ (1 mark)
- b. Which water sample is **neutral**? _____ (1 mark)
- c. Which **TWO** samples are **alkaline**? _____ (2 marks)
- d. Fill in the blanks by using some of the following words. Each word can be used once, more than once or not at all.

colour green neutral red blue pH shape weak

- (i) Indicators are used to find the _____ of a chemical by changing their _____.
- (ii) Litmus paper is _____ in acids and _____ in alkalis.
- (iii) A solution which is neither an acid nor an alkali is called a _____ solution.

(5 marks)

5. The following are important nutrients in a balanced diet.

minerals proteins fats vitamins water

A student has a sweet, juicy orange to eat.



a. Complete the following sentences using words from the list above.

(i) An orange is a **good** source of _____ and _____ (2 marks)

(ii) An orange is a **poor** source of _____ and _____ (2 marks)

b. Give the name of **two** other nutrients in a balanced diet which are **not** shown in the list above.

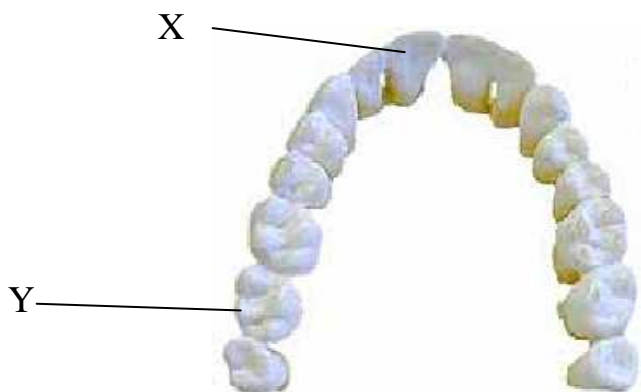
1. _____ 2. _____ (4 marks)

c. Extra protein is needed for making new cells as a child grows. Underline the best two sources of protein.

apple fish sugar beans banana sweets

(2 marks)

6. This is a diagram of an adult's set of teeth. An adult has four different types of teeth.



a. What is the name of teeth marked X and Y?

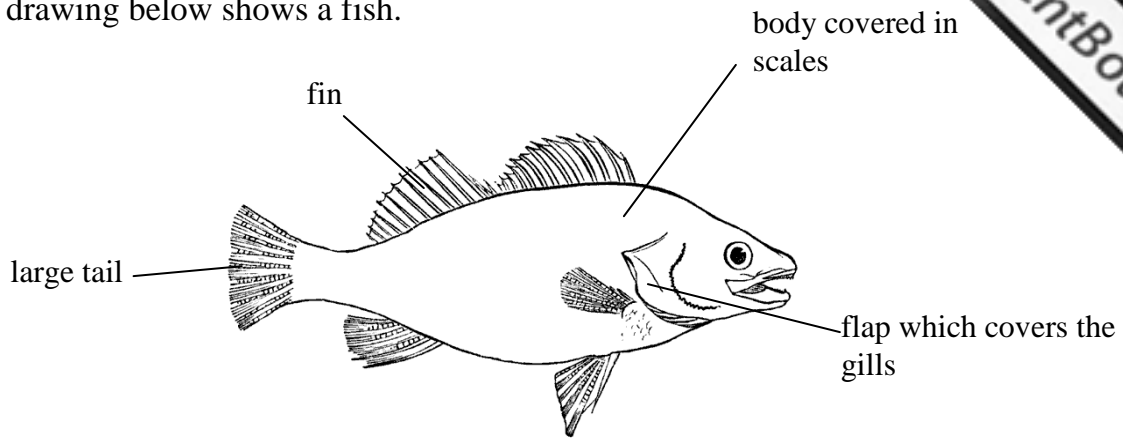
X: _____ Y: _____ (4 marks)

b. What is tooth X used for? _____ (2 marks)

c. Give one reason why it is important to chew food.

(2 marks)

7. The drawing below shows a fish.



Four parts of a fish are written in the list below. Draw a line from each part to the way it helps a fish to live in water. Draw only **four** lines.

Part of a fish

How the part helps a fish to live in water

tail

takes oxygen from the water

gills

helps the fish to find its food

scales

protects the body of the fish

fins

pushes the fish forward

stops the fish rolling over

(4 marks)

8. Below is a food chain from a valley in Malta.

pondweed → **insect** → **frog** → **hedgehog**

a. Underline the correct answer: The pondweed plants are the producers in the food chain. All the animals are (carnivores / consumers / herbivores).

(1 mark)

b. Which of the above living things is a herbivore? _____ (2 marks)

c. From the above food chain name:

i. one animal which is a predator _____

ii. one animal which is both a predator and a prey _____

(4 marks)

9. This question is about forces.

Nicholas is holding a balloon full of helium gas. He feels an upward force.

a. On the diagram, draw an arrow to show:

- this upward force. **Label this arrow U.**
- the force made by Nicholas holding the balloon. **Label this arrow D.**

(4 marks)



b. As Nicholas was walking around, he slipped. He decided to measure how slippery different floor surfaces are. He measured the force needed to start his shoe moving on different surfaces. These are his results



Floor surface	Force needed
Polished tiles	1.2N
Carpet	5.0N
Concrete	2.5N

Use the above information to answer the following questions:

- The most slippery surface is _____. (1 mark)
- Most accidents are likely to occur on _____. This is because friction is _____. (3 marks)

10. This question is about forces.

Fill in the blanks. Each word can be used once, more than once or not at all.

push newtons Newton meter kilograms pull friction metre ruler

- A force may _____ or _____ something, making it move.
- Forces are measured in units called _____.
- A _____ is used to measure forces.
- _____ is a type of force that can slow things down.

(5 marks)

11. Read this paragraph and then answer the following questions.

Daniela is camping. She makes a wood fire to cook her food. Before Daniela goes to sleep, she pours water on the fire to put it out. In the morning, all that is left is a pile of ash. She has to collect more wood to cook food for breakfast.



- a. Is the burning of wood a physical or a chemical change? _____ (2 marks)
- b. Fill in the blanks. Each word can be used once, more than once or not at all.

carbon dioxide hydrogen oxygen nitrogen oxides water

During burning, wood reacts with the _____ of the air. This produces a number of gases, for example _____. During burning, compounds called _____ are produced.

(3 marks)

- c. Draw the fire triangle to show the **THREE** things which are needed to produce fire.

(3 marks)

The Fire Triangle

12. New materials are made by chemical reactions. Tick (✓) the correct column, to show whether these are chemical or physical changes.

	Chemical change	Physical change
Cooking a burger		
Turning water into ice in the freezer		
Melting chocolate		
Boiling water to make steam		
Burning gas in a cooker		
Digesting food		

(6 marks)

13. There are 8 planets orbiting the Sun.

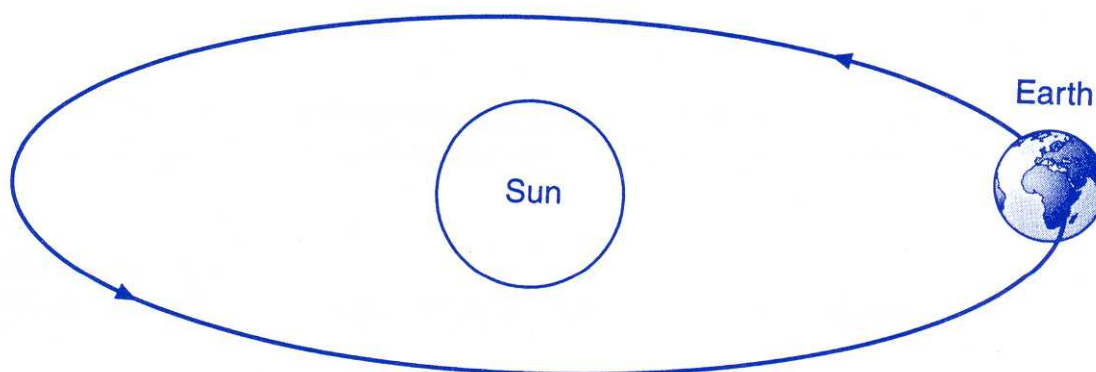
a. Underline the correct statement about each of the following planets.

Planet	Facts about the planet
Mercury	It has a rocky surface. / It is made of ice.
Venus	It is a very cold planet. / It is the hottest planet.
Jupiter	It is the largest planet. / It has no moons.
Saturn	It has large beautiful rings. / It is a hot planet.
Uranus	It is a small planet. / It is made of frozen hydrogen and helium.

(5 marks)

b. Write down the name of ONE other planet. _____ (1 mark)

14. The following diagram shows the Earth going round the Sun (not to scale)



a. What do we call the line marked with arrows? _____ (1mark)

b. How long does the Earth take to move round the Sun once? _____ (1 mark)

c. On the diagram draw the Earth's Moon and show the path along which it moves.
Label the Moon M. (2 marks)

d. How long does the Moon take to move round the Earth once? _____ (1 mark)

e. On the diagram draw and label the planet Venus and the path along which it travels around the sun. Label Venus V. (2 marks)