

SECONDARY SCHOOLS ANNUAL EXAMINATIONS 2000

Educational Assessment Unit – Education Division

FORM 2

INTEGRATED SCIENCE

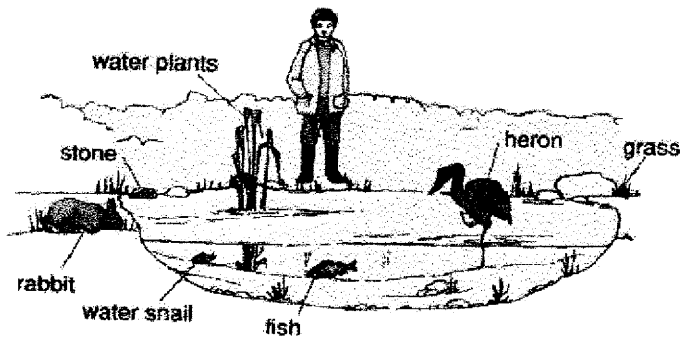
Time 1hr 30 min

Name _____

Class _____

ANSWER ALL QUESTIONS

1. The drawing shows plants and animals around a pond. The living things here depend on each other for their food.



The following living things make up one **food chain** in the above drawing.



heron



water plants



fish



snails

- a. Write this **food chain** in the right order.



(4)

An animal that kills another animal for its food is a **predator**.
The animal that is killed and eaten is the **prey**.

- b. Name a **predator** and its **prey** from the above food chain.

_____ (2)

- c. From where are the **plants** getting their **energy**?

_____ (1)

- d. Plants make their own food by **photosynthesis**.
Does it take place during the day or during the night?

_____ (1)

- e. **Pollution** of the pond kills all of the fish. What might happen to the heron?

_____ (2)

2. Read the following description of **water** and then answer the questions that follow?

Water

Water is a transparent, colourless liquid. On our earth we can find water as a solid in the form of ice, as a liquid in the form of water and as a gas in the form of water vapour.

Ice melts at 0°C and water boils at 100°C. It is a very good solvent.

Water is a compound made of hydrogen and oxygen. Water is very useful to us. Our body contains a lot of water and we need to take in water regularly. We also use water for cleaning purposes.

a. Write down a phrase from the passage which describes:

i. the **appearance** of water.

_____ (2)

ii. a **property** of water.

_____ (2)

iii. a **use** of water.

_____ (2)

b. Water is a **compound**. Why?

_____ (2)

c. Name the two **elements** that make up water. Write their symbol.

element	symbol

(4)

d. Name an **element** that can be used for each of the following.

- Wedding ring _____
- Thermometer _____
- Disinfecting swimming pools _____
- Electrical wiring _____

(4)

3. Our body is made up of different **organ systems**, which work well together when we are fit and healthy.

a. Fill in the following table using the following words or phrases.

breathing system: **pumps blood:** **digestive system:**
supply the body with oxygen: **heart:** **Stomach.**

Organ	Organ System	Job that the organ does.
	Circulatory system	
		Digests food
Lungs		

(6)

b. Ann read a leaflet at the Health Centre. She read:

- Wash your hands before touching food.
- Never smoke cigarettes.
- Do not eat fatty foods.
- Get your babies vaccinated.

Each of these can help to prevent an illness.

Write the correct phrase from the above list by each illness.

illness	prevention
Measles	Get your babies vaccinated.
Lung cancer	
Food poisoning	
Heart attack	

(3)

4. Five of the seven **basic food substances** are water, minerals, fibre, vitamins and carbohydrates.

a. Name the other two basic food substances.

(2)

b. What is a diet, which contains the correct amount of all the basic food substances called?

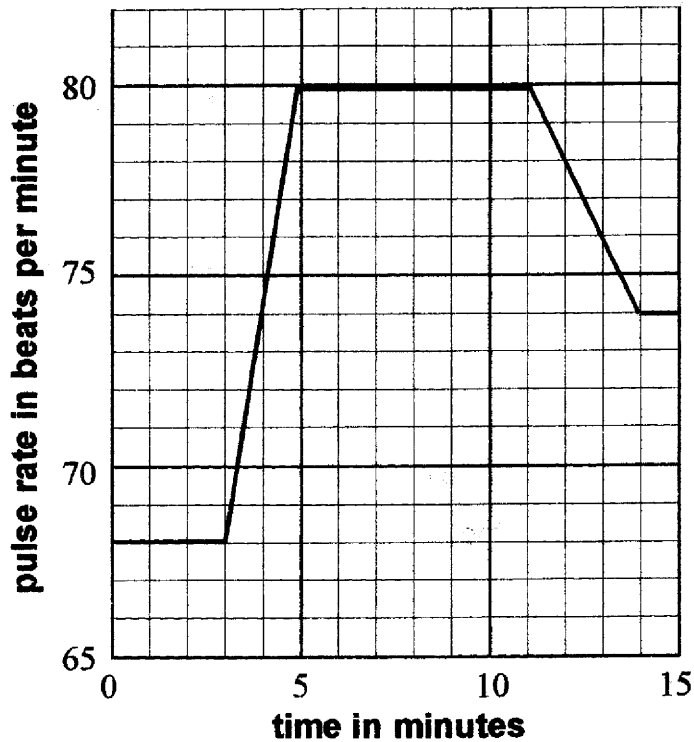
(1)

c. You are given a little soup in a test tube. You add a few drops of **iodine solution** to it. The colour of the soup becomes **blue-black**.

What does this show us about the soup?

(2)

5. Peter is fitted with an instrument that records his pulse rate. The chart shows his pulse rate at playtime



- a. At the beginning of playtime, Peter sat to have a drink and an apple. How long did he spend sitting down?

(1)

- b. After having his drink, Peter played football with his friends. How can you tell from the graph when Peter started to play football?

(2)

- c. Why did Peter's pulse rate change when he started to play football?

(2)

- d. Eleven minutes into playtime Peter's pulse started to go down. Suggest why this happened.

(2)

- e. What was Peter's pulse rate at the end of playtime?

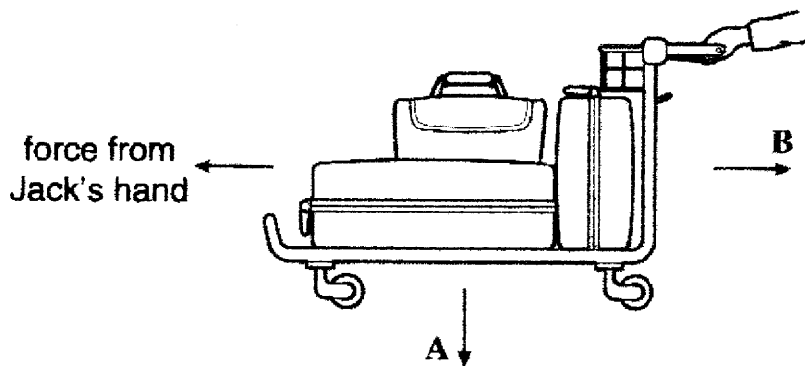
(1)

6a. Forces are used everyday. What **force** is used in these everyday activities?

Activity	Force
i. Cutting a piece of cheese.	
ii. Picking up pins with a magnet.	
iii. An orange falling from a tree.	
iv. Tug of war	

(4)

b. Jack is pushing a luggage trolley along level ground at an airport.



There are three **forces** acting on the trolley.
The **push** from Jack's hands, **gravity** and **friction**.

i. Name the two **forces** labelled A and B in the diagram?

Force A _____

Force B _____

(2)

ii. Jack increases his **push** on the trolley.
What happens to the **speed** of the trolley?

(2)

iii. The trolley is moving forwards, and it is getting faster.
Jack's **push** and **friction** are now **unbalanced**.
Which of the two forces is bigger?

(1)

7a. Sandra wanted to find out what happens when some chemicals are put in a flame. The flame changed colour. This was her result.

Chemical	Colour of the flame
sodium carbonate	yellow
copper chloride	greenish blue
potassium chloride	lilac
sodium sulphate	yellow

i. Why do **sodium carbonate** and **sodium sulphate** both give the same colour?

(1)

ii. What will be the flame colour if she puts copper sulphate in the flame?

(1)

iii. Will potassium sulphate give a greenish blue colour?

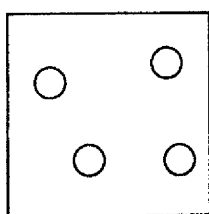
(1)

b. Fill in the blanks:

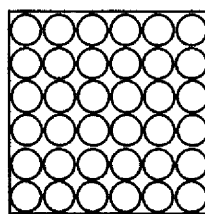
Everything is made of particles. These particles are always _____, they are very _____ and they have _____ between them.

(3)

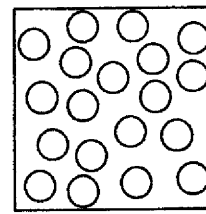
c. These diagrams show how **particles** can be arranged in different substances.



A



B



C

Fill in the blanks:

(1)

The **particles** of oxygen are arranged like those in diagram _____.

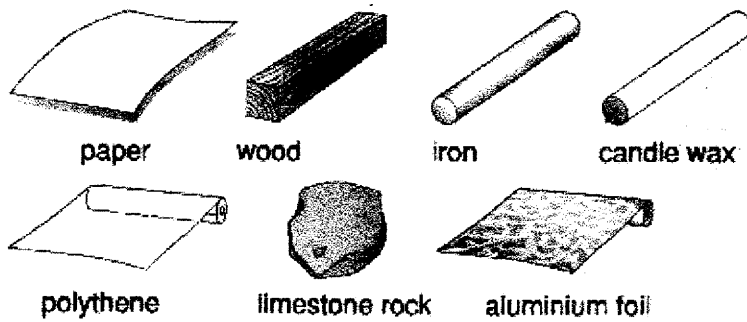
The **particles** of oil are arranged like those in diagram _____.

(1)

Two substances whose **particles** are arranged like those in diagram B are

(2)

8. We use many different materials in everyday life. Here are some of them.



a. Complete the table that shows the properties of these objects.

objects	easy to bend	attracted to a magnet	see-through	conductor of electricity
candle wax	✓	×	×	×
tissue paper				
polythene bag				
aluminium foil				
limestone rock				
iron rod				

(10)

b. Which two objects in the table are **metals**?

(2)

c. What **property** from the above table do the **metals** have in common?

(1)

d. Which **metal** rusts?

(1)

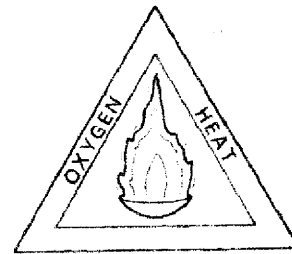
e. The following list shows the main **groups of materials**.

Write down an **object** made from each material, which you find in the **kitchen**.

Groups of material	Object
metals	
fibres	
plastics	
glass	
ceramics	

(5)

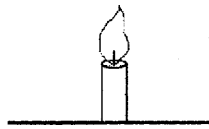
9. The diagram shows the **fire triangle**.
The **fire triangle** shows what is needed to have a **fire**.



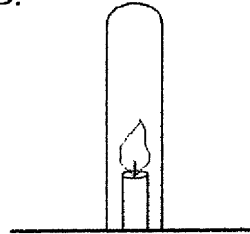
a. What is the missing word in the fire triangle?

(2)

b. You have a burning candle as shown in diagram A. You invert a test tube and put it over the burning candle as shown in diagram B.



A



B

Underline the correct statements.

- i. The candle in diagram B continues to burn.
- ii. The candle in diagram B goes out.
- iii. Oxygen in the test tube has been used up.
- iv. The test tube breaks.

(2)

c. Burning a piece of paper is a **chemical change**.

The following is a list of changes. Underline the **chemical changes**.

- | | |
|------------------------------------|-------------------------------|
| • Breaking glass | • Boiling water |
| • Cooking an egg | • Eating chocolate |
| • Iron going rusty | • A coal fire giving out heat |
| • An electric fire giving out heat | • Tearing a piece of paper |

(4)

10. A **telecommunication system** has three parts, a **transmitter**, a **carrier** and a **receiver**.

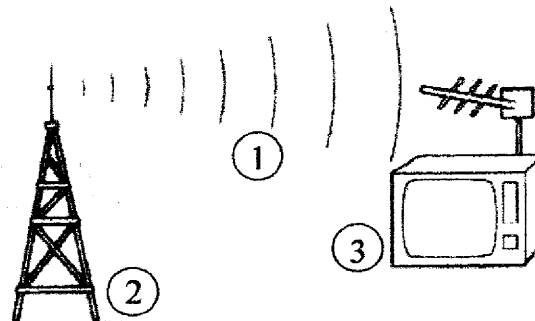
The diagram shows a television system.

a. Which part of the diagram is the:

i. transmitter _____

ii. carrier _____

iii. receiver _____



(3)

b. Underline three other **telecommunication systems**.

- | | |
|----------------|------------|
| i. calculator | ii. radio |
| iii. telephone | iv. letter |
| v. fax | vi. robot |

(3)