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**MINISTRY OF EDUCATION
BAHAMAS JUNIOR CERTIFICATE
EXAMINATION 2007**

0047 GENERAL SCIENCE

**PAPER 1 MULTIPLE CHOICE QUESTIONS
(40 MARKS)**

Wednesday **6 JUNE 2007** 1:00–2:00 P.M.

INSTRUCTIONS TO CANDIDATES

Do not open this booklet until you are told to do so.

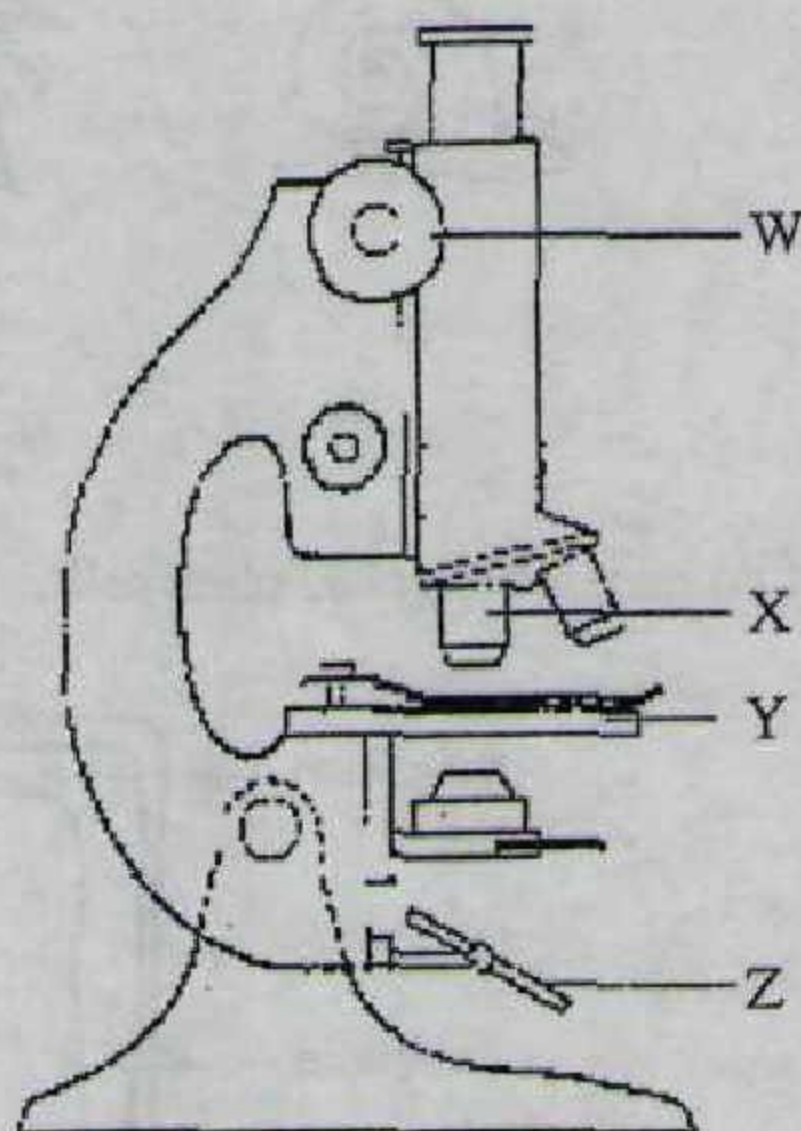
Write your school number, candidate number, surname and initials in the spaces provided at the top right hand side of this page.

For each question, there are four suggested answers A, B, C and D. When you have selected an answer to a question, **circle the letter by the answer you have chosen.**

Answer **ALL** the questions in this booklet. Do any necessary rough work and calculations in your booklet.

The diagram shows a microscope.

Use the diagram to answer questions 1 and 2.



1. Which part of the microscope is used to reflect light onto the slide?

- A W
- B X
- C Y
- D Z

2. Which part of the microscope magnifies the object?

- A W
- B X
- C Y
- D Z

3. What is the correct procedure to follow when diluting an acid?

- A add acid to unknown chemicals
- B add acid to water
- C add water to acid
- D add acid to known chemicals

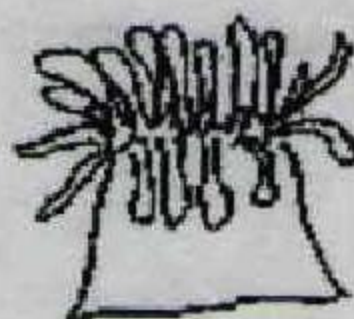
4. Which animal is a mollusc?



A



B

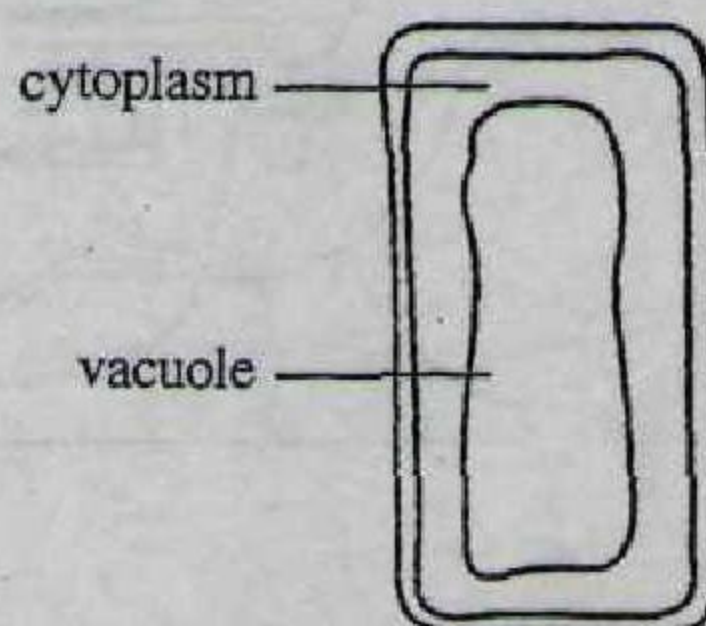


C



D

5. The diagram shows two parts of a typical plant cell.



What are found in the labelled parts?

	in the cytoplasm	in the vacuole
A	chloroplasts	nucleus
B	chloroplasts and nucleus	sap
C	nucleus	chloroplasts
D	sap	chloroplasts and nucleus

6. Why do flowering plants need light?

- A to absorb water
- B to help produce food
- C to help pollinate flowers
- D to reduce water loss

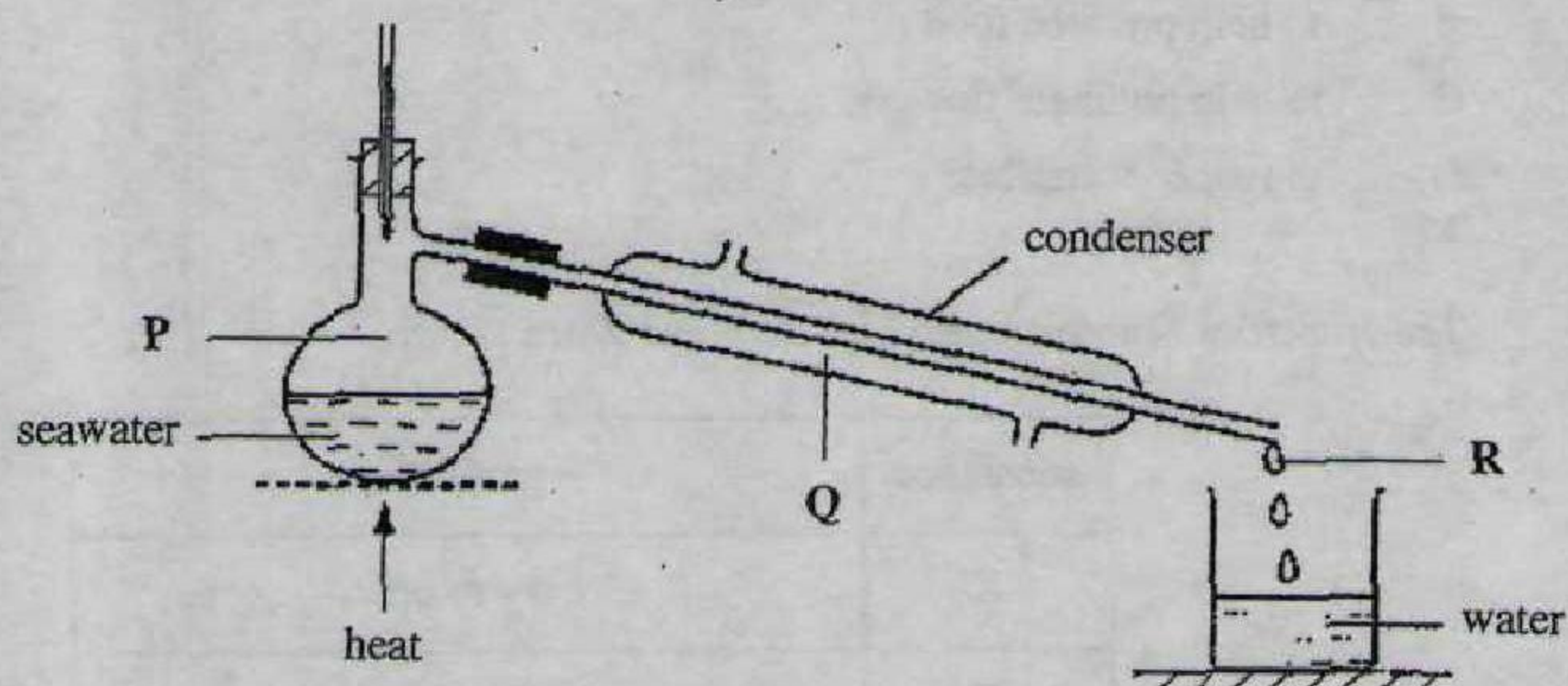
7. The properties of three substances X, Y and Z are shown.

substance	property
X	easy to pour
Y	diffuses to fill all the space available
Z	has a definite shape

What are the states of the substances X, Y and Z?

	X	Y	Z
A	gas	gas	liquid
B	gas	liquid	solid
C	liquid	gas	solid
D	liquid	liquid	solid

Tamare takes a sample of seawater and heats it using the apparatus shown. Use the diagram to answer questions 8, 9, and 10.



8. What processes are taking place at **P** and **Q**?

	P	Q
A	boiling	evaporation
B	condensation	boiling
C	condensation	evaporation
D	evaporation	condensation

9. Which natural cycle has similar processes as shown in the diagram?

- A carbon
- B oxygen
- C nitrogen
- D water

10. What would **R** represent in this natural cycle?

- A absorption
- B cloud formation
- C dew formation
- D precipitation

11. What are the correct symbols for the elements copper, nitrogen and potassium?

	copper	nitrogen	potassium
A	C	N	K
B	C	Ni	P
C	Cu	N	K
D	Cu	Ni	P

12. Which gas is returned to the atmosphere when dead organisms decompose?

- A carbon dioxide
- B nitrogen
- C oxygen
- D water vapour

13. Fertilizers contain compounds rich in chemicals needed for plant growth.

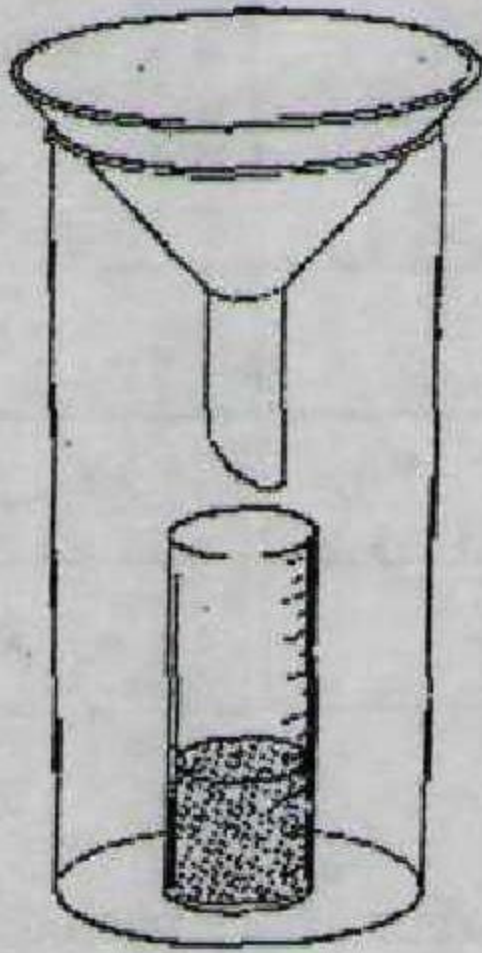
Which chemical is found in fertilizers?

- A carbon dioxide
- B nitrogen
- C oxygen
- D water vapour

14. Which phrase describes the formation of a cold front?

- A a mass of warm air moves toward and over a slower mass of cold air causing the warm air to rise and cool forming clouds
- B a cold air mass moves quickly under a warm air mass causing the warm air to rise rapidly, resulting in high winds and thunderstorms
- C the place where a cold air mass and a warm air mass meet
- D two air masses meet but neither is displaced

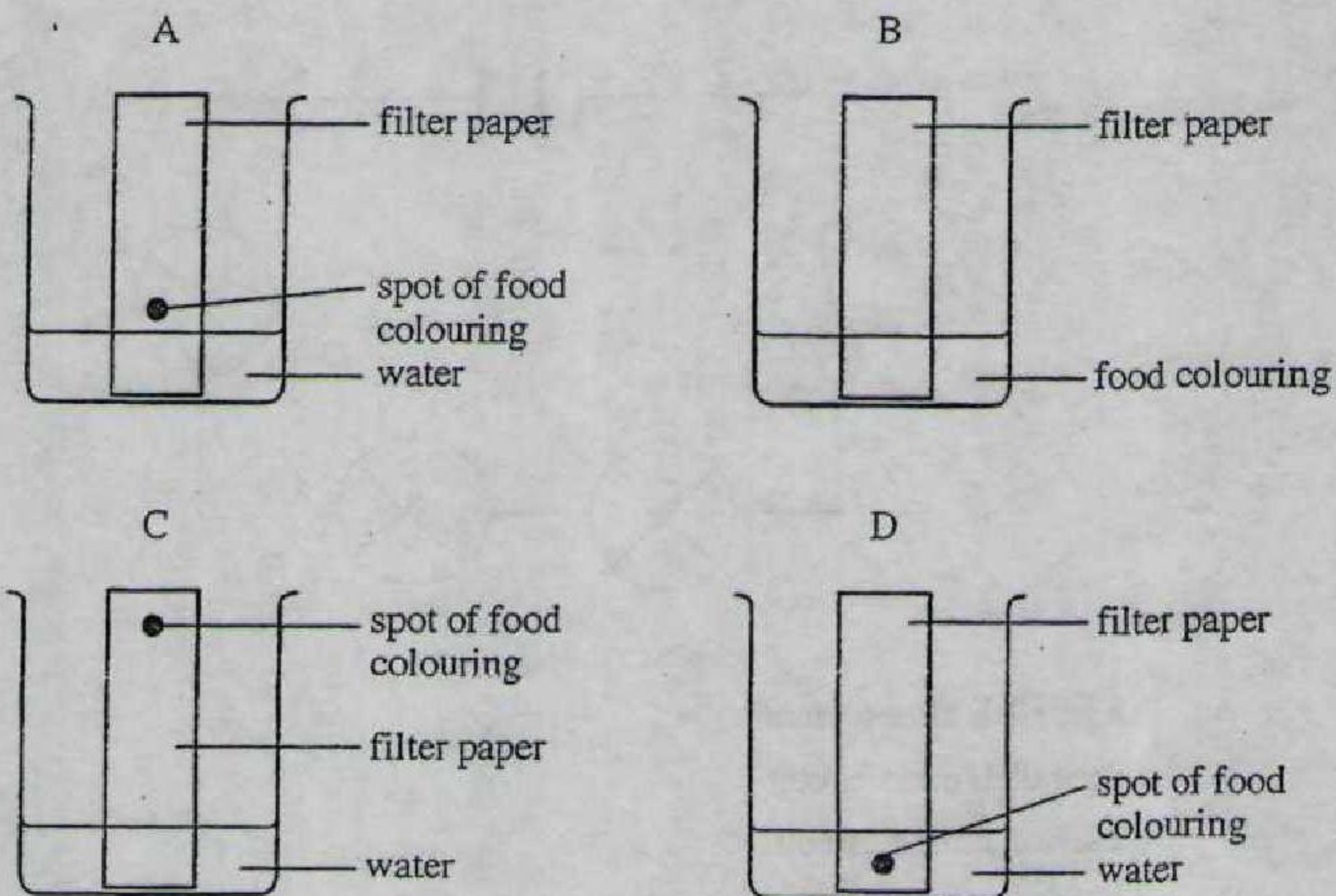
15. The diagram shows an instrument found in a weather station.



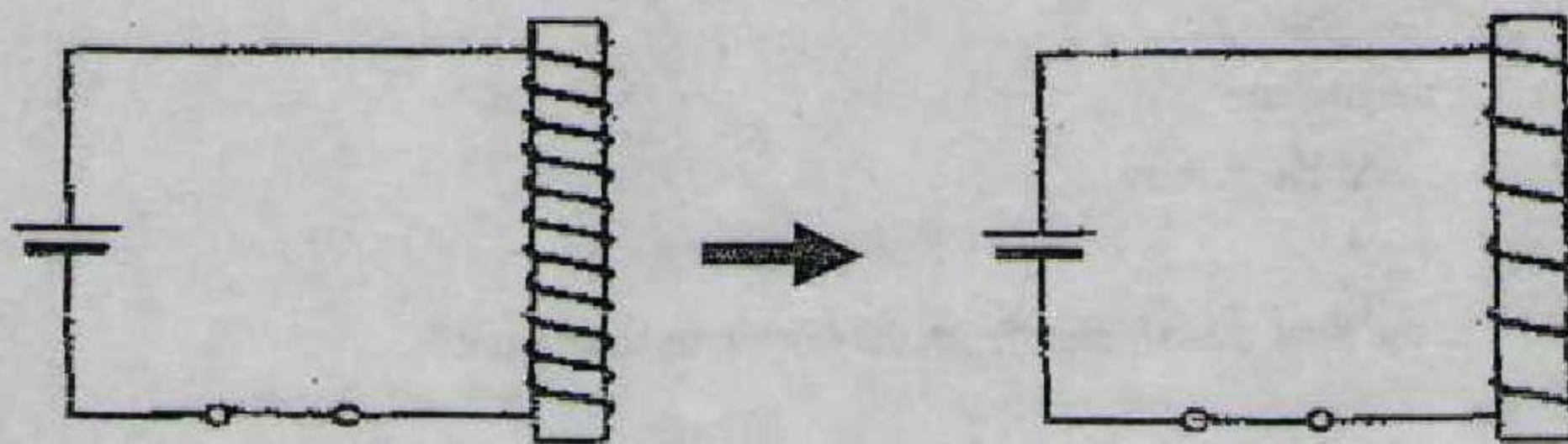
What does it measure?

- A air pressure
 - B air temperature
 - C rainfall
 - D wind speed
16. The diagram shows a simple food chain found on a coral reef.
- algae → queen conch → spiny lobster → Nassau grouper
- Which organism is a herbivore?
- A algae
 - B Nassau grouper
 - C queen conch
 - D spiny lobster
17. Which device converts chemical energy into electrical energy?
- A a battery
 - B an electric motor
 - C an electrical switch
 - D a generator

18. Which diagram shows how a mixture of dyes in food colouring can be separated?

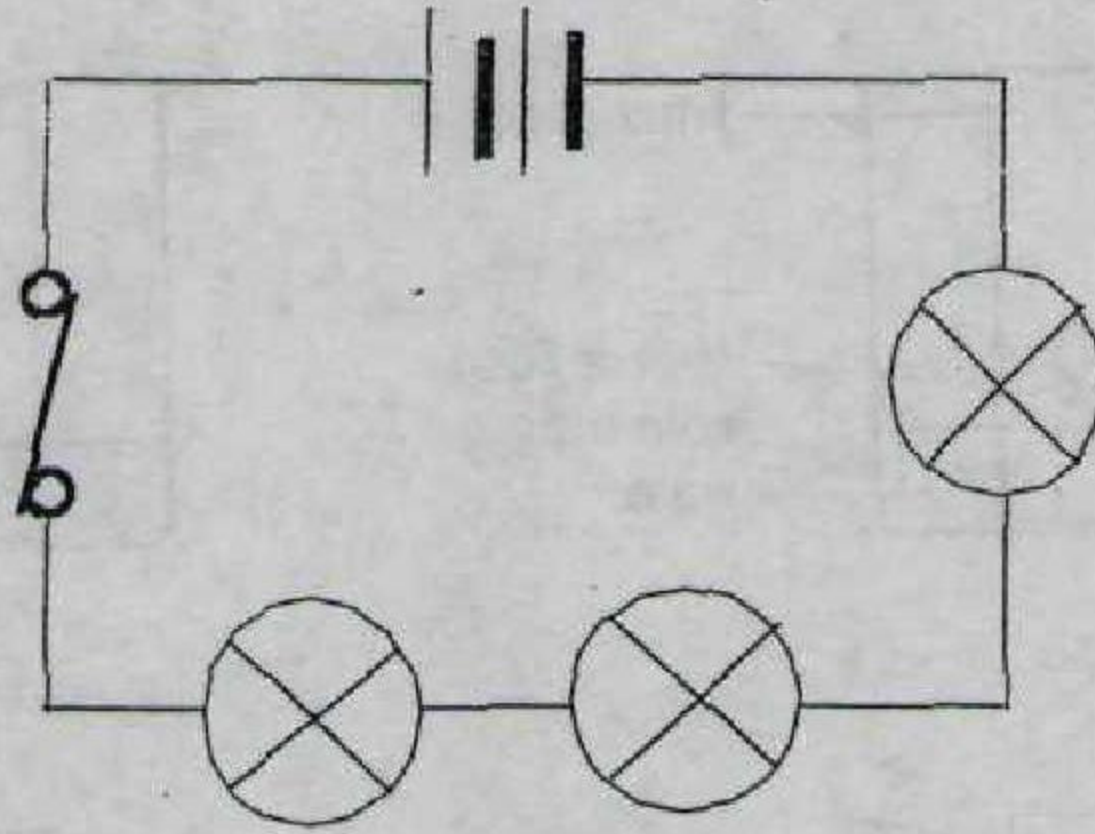


19. What happens to the strength of an electromagnet when the number of turns of the wire on the magnet is decreased?

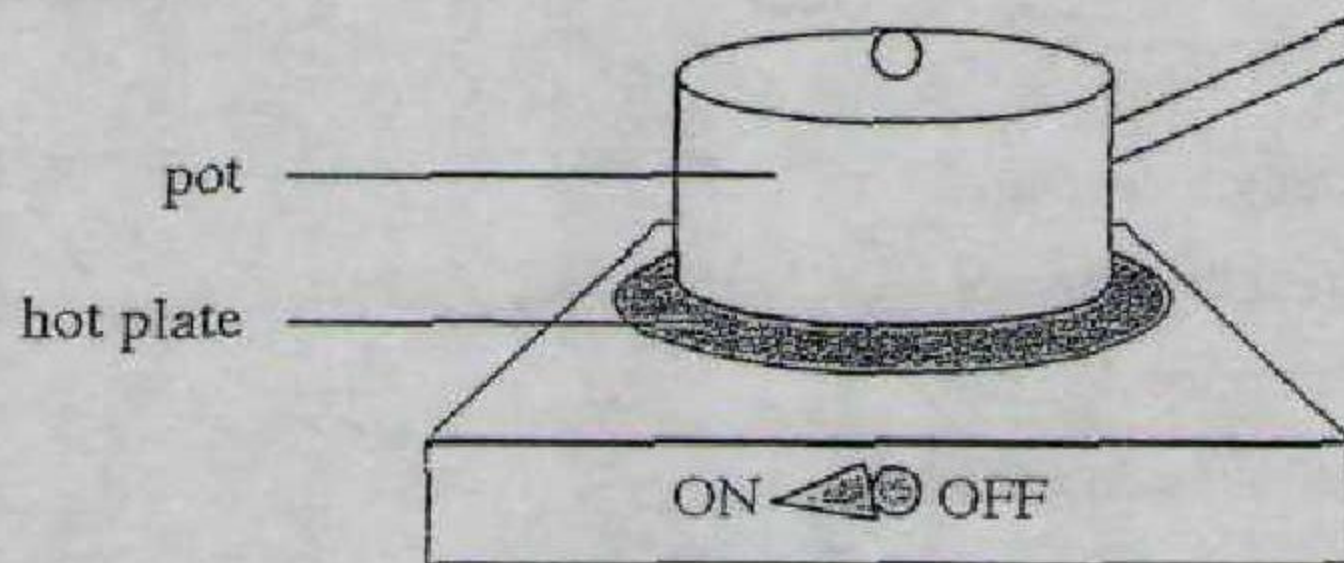


- A its strength decreases
- B its strength increases
- C its resistance decreases
- D its resistance increases

20. Which describes the electric circuit shown?



- A a parallel, closed circuit
 - B a parallel, open circuit
 - C a series, closed circuit
 - D a series, open circuit
21. What causes a woollen sock to cling to a silk shirt after drying in the clothes dryer?
- A current electricity
 - B friction
 - C magnetism
 - D static electricity
22. How is the heat transferred from the hot plate to the pot?

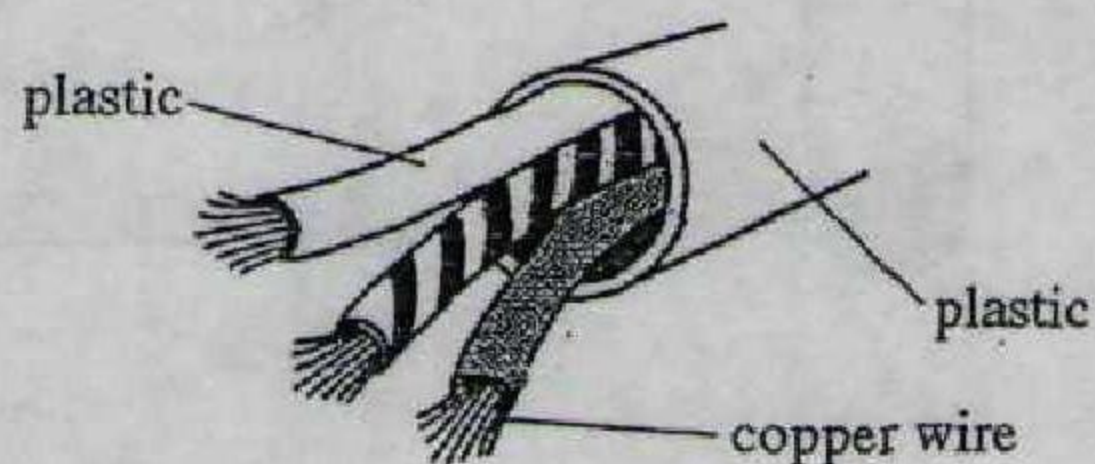


- A by conduction
- B by convection
- C by evaporation
- D by radiation

23. What is the temperature of boiling water on the Fahrenheit scale?

- A 0 °F
- B 32 °F
- C 100 °F
- D 212 °F

24. Copper wires in an electricity cable are covered in plastic.



Why is plastic used?

- A It is a conductor
- B It is an insulator.
- C It is flexible.
- D It melts easily.

25. Which vertebrate's body temperature does not change when the outside temperature changes?

- A amphibians
- B birds
- C fish
- D reptiles

26. Which statement describes the Solar System?

- A the Sun and its planets
- B the Sun and the Earth
- C the Earth and the Moon
- D the Moon and the planets

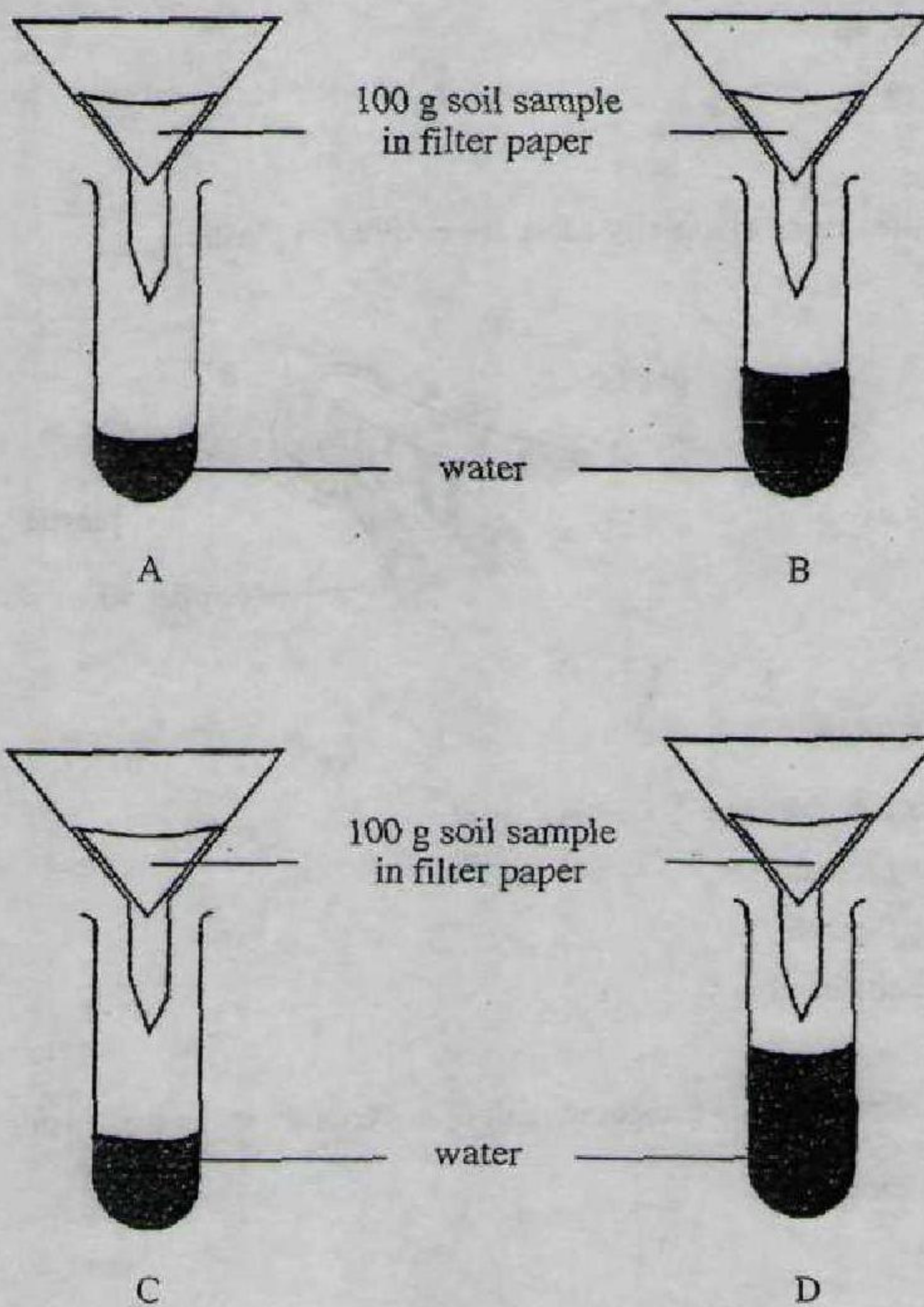
27. The daily rise and fall of the sea level is called the tides.

What causes the daily rise and fall of the sea level?

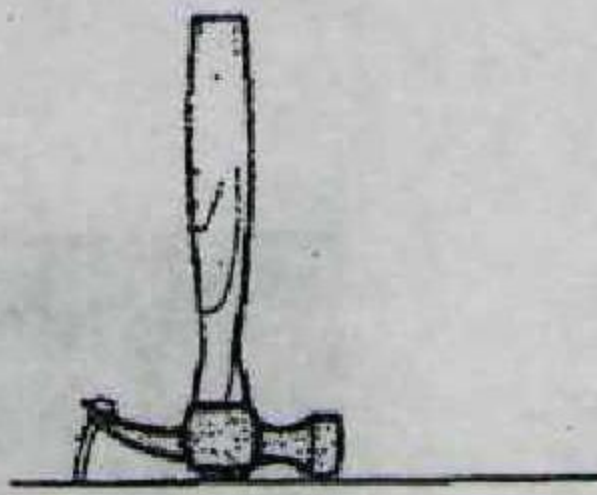
- A air pressure
- B the Moon's gravitational pull on the Earth
- C the magnetism of the Earth at the poles
- D water pressure

28. Equal amounts of water are poured into four different soil samples.

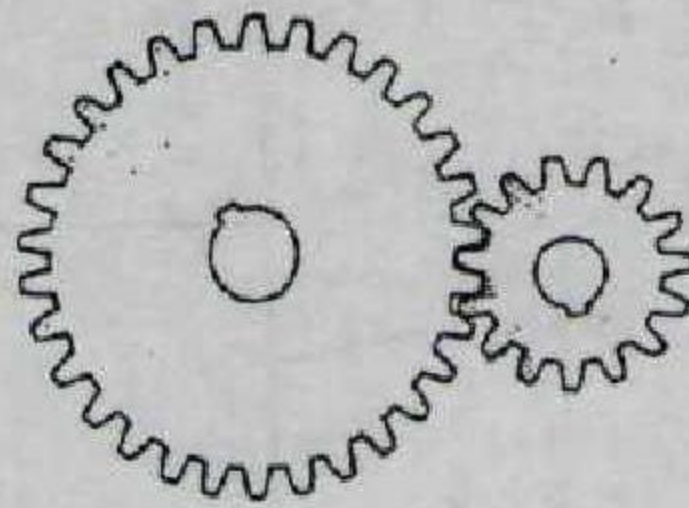
Which soil sample contains the largest air spaces?



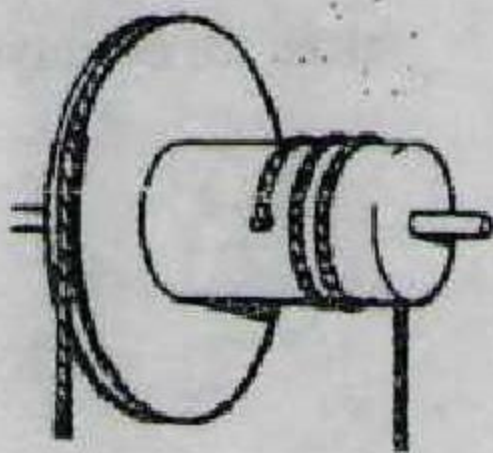
29. Which of the following is an example of a wheel and axle?



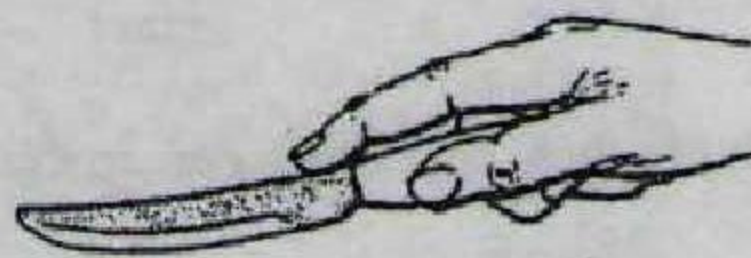
A



B



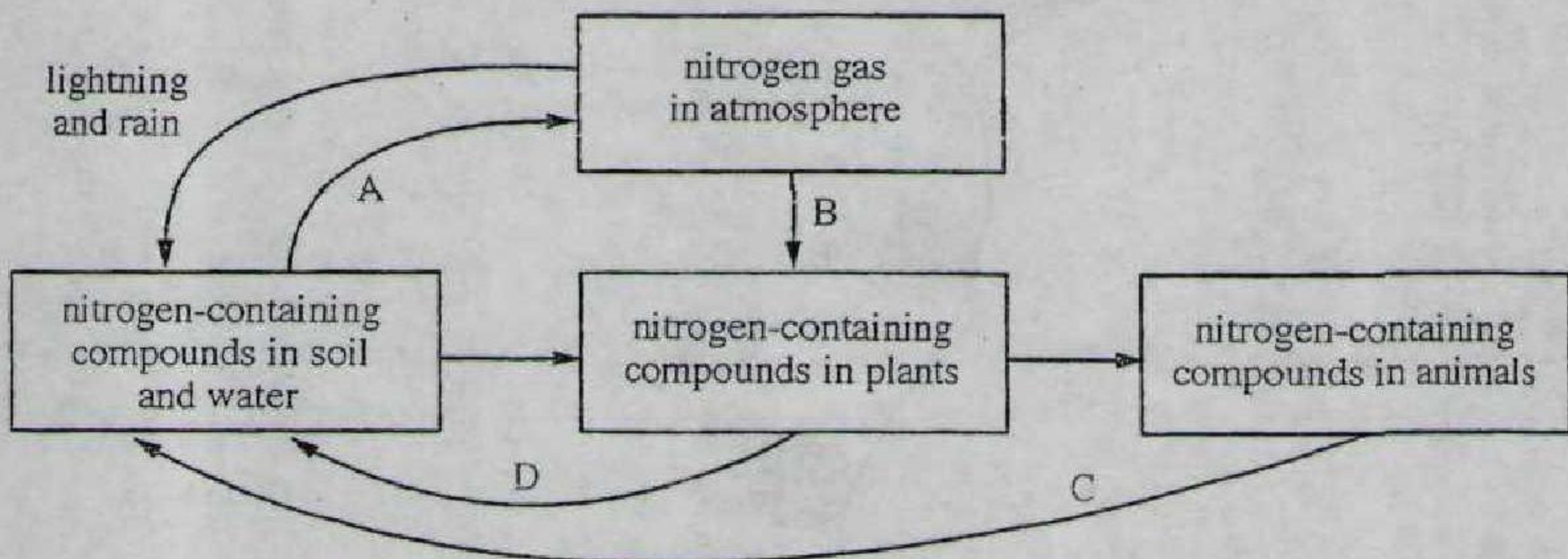
C



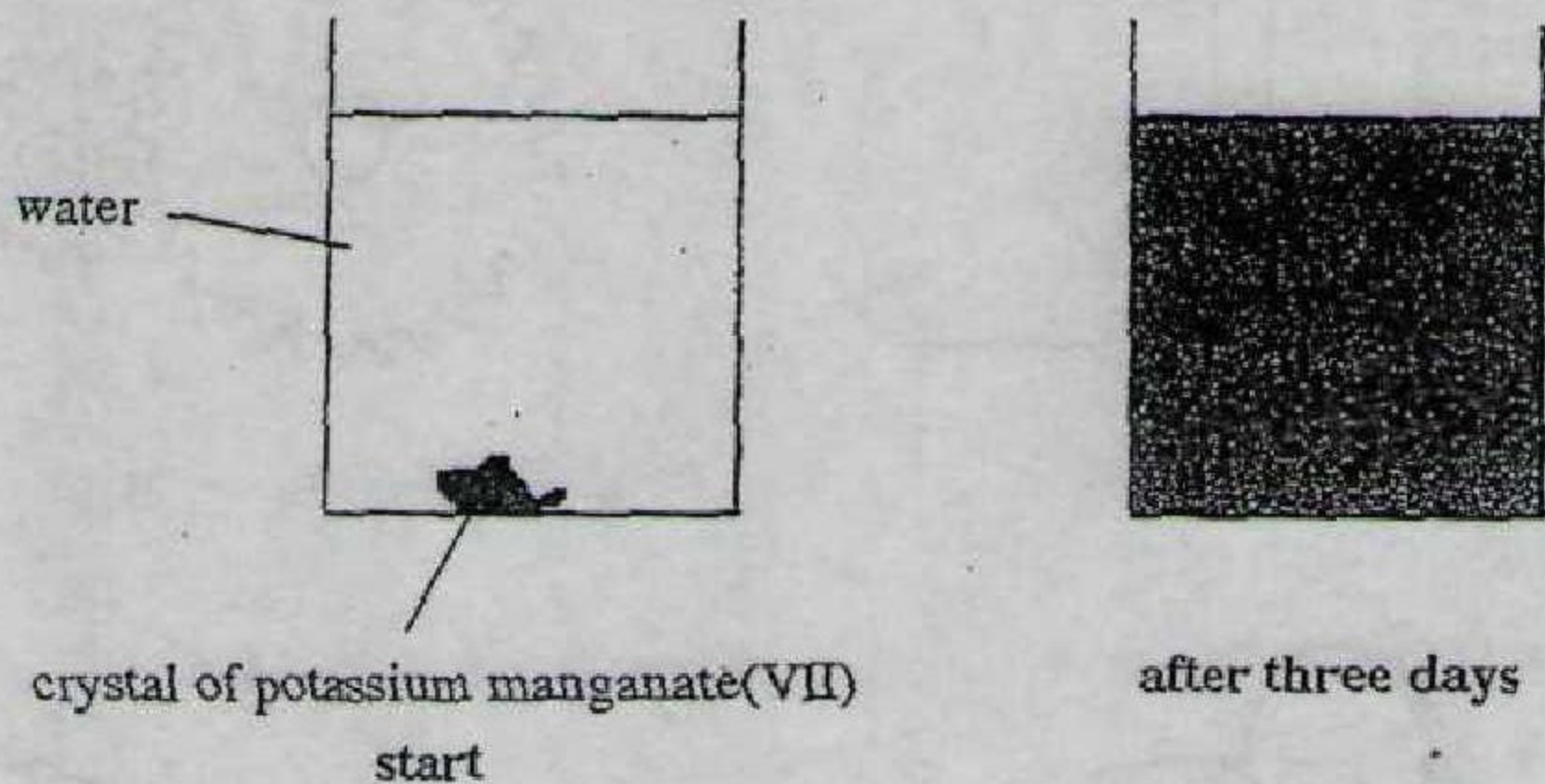
D

30. The diagram shows part of the nitrogen cycle.

Where do human waste materials enter the cycle?

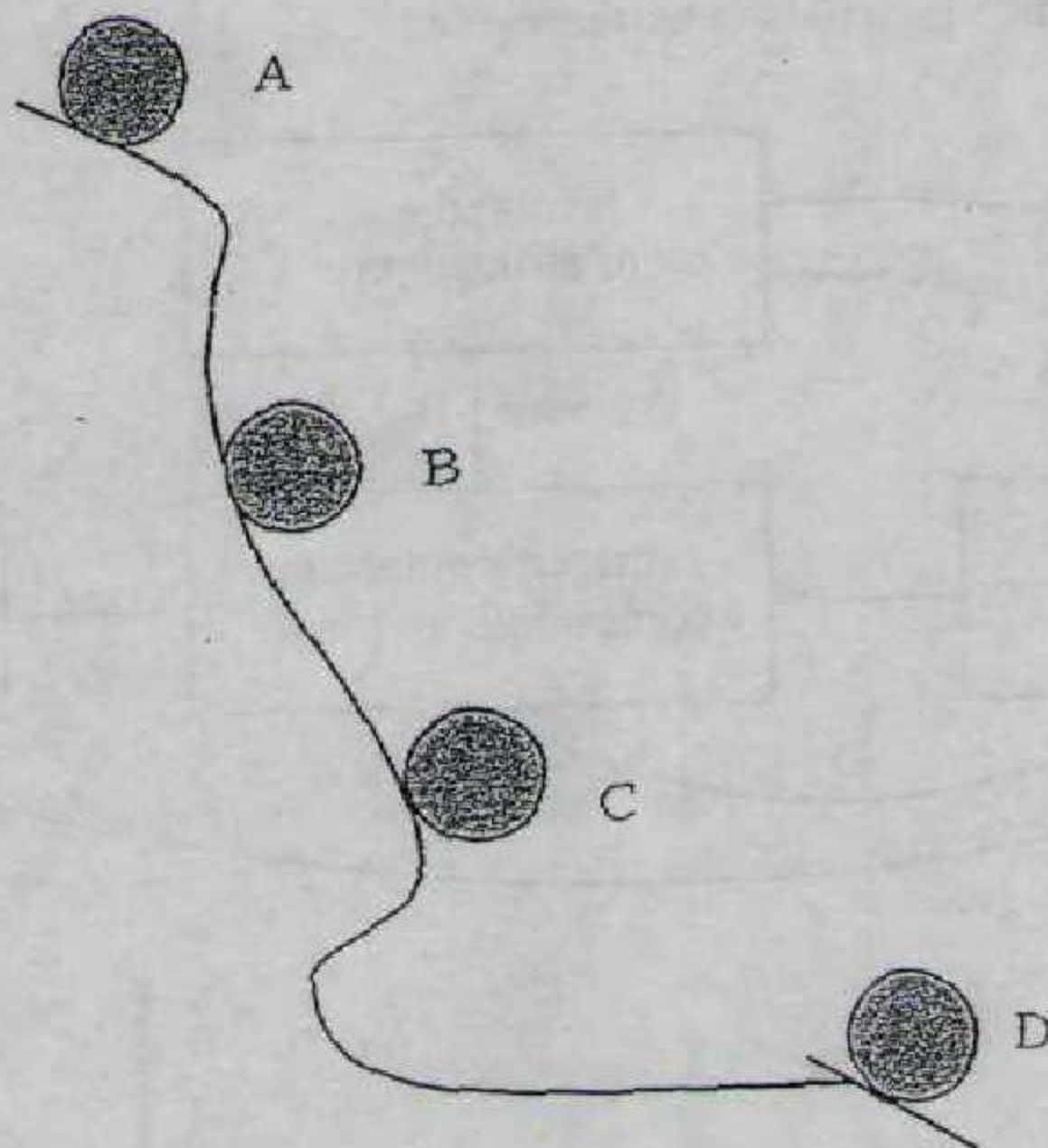


31. Tamare drops a purple crystal of potassium manganate into a beaker of water. The beaker was left for three days without shaking.

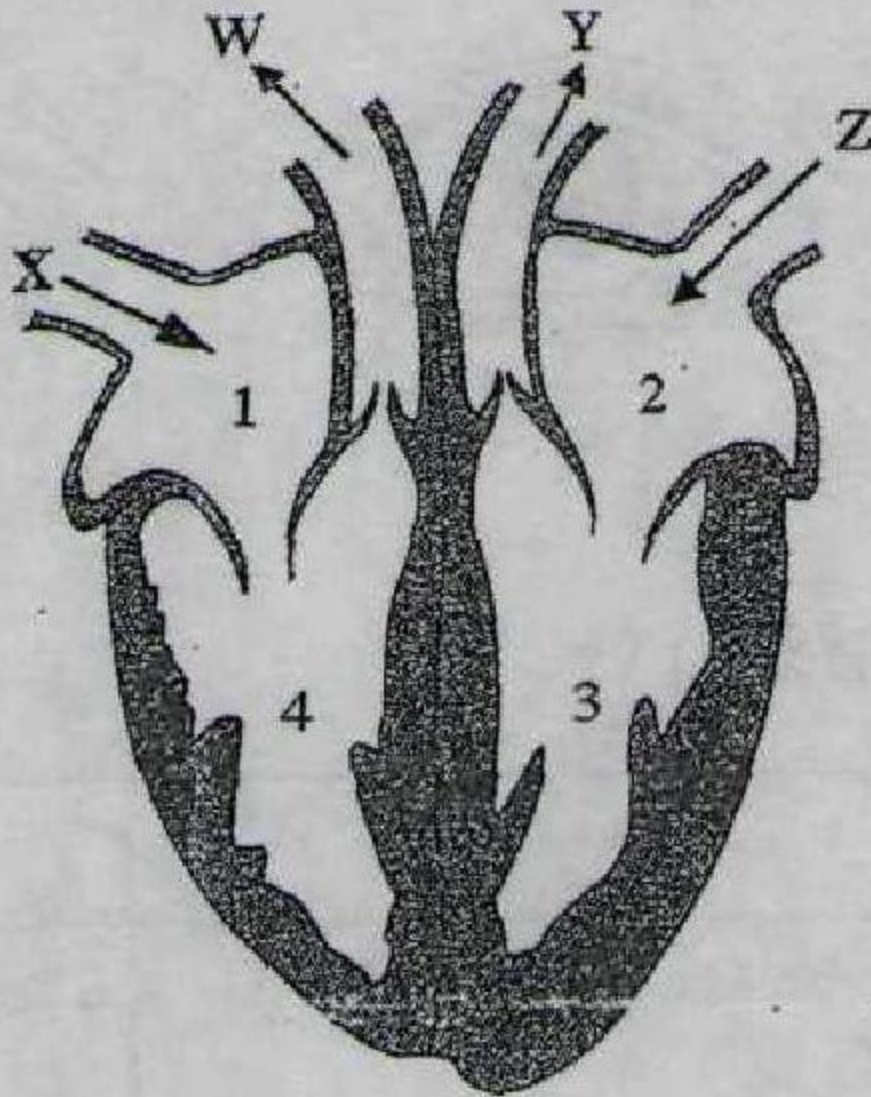


Which process did Tamare demonstrate?

- A conduction
 - B diffusion
 - C expansion
 - D radiation
32. At which position does the ball have its greatest potential energy?



33. The diagram shows a section through the human heart.

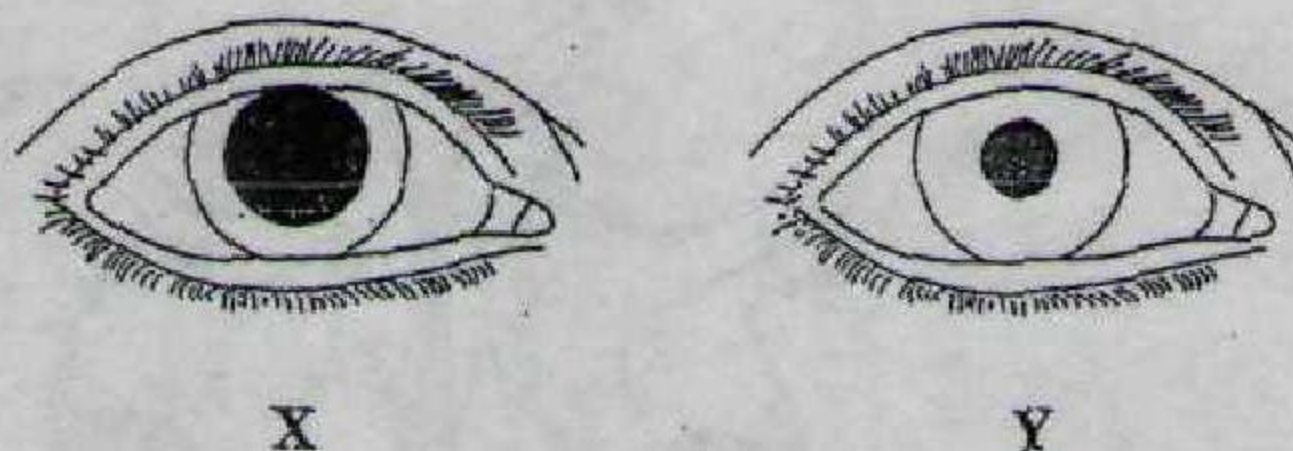


The blood enters at X and Z and leaves at W and Y.

What is the name of Y?

- A aorta
 - B pulmonary artery
 - C pulmonary vein
 - D vena cava
34. Which force may be **reduced** with the use of a lubricant/oil?
- A friction
 - B gravity
 - C magnetism
 - D weight
35. Which layer of the atmosphere contains particles which reflect radio waves?
- A exosphere
 - B ionosphere
 - C stratosphere
 - D troposphere

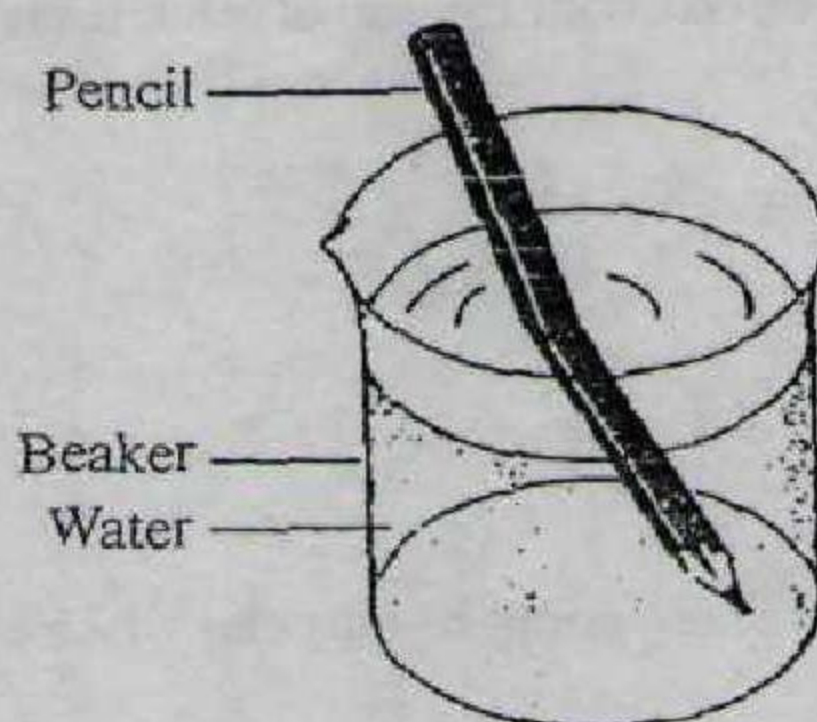
36. The diagram shows the human eye at two times, X and Y.



What is happening at X and Y?

	X	Y
A	a person walks out into bright sunshine	a person walks into a dark room
B	a person walks into a dark room	a person walks out into bright sunshine
C	the eye focuses on a distant object	the eye focuses on a near object
D	the eye closes and then opens	the eye becomes full of tears

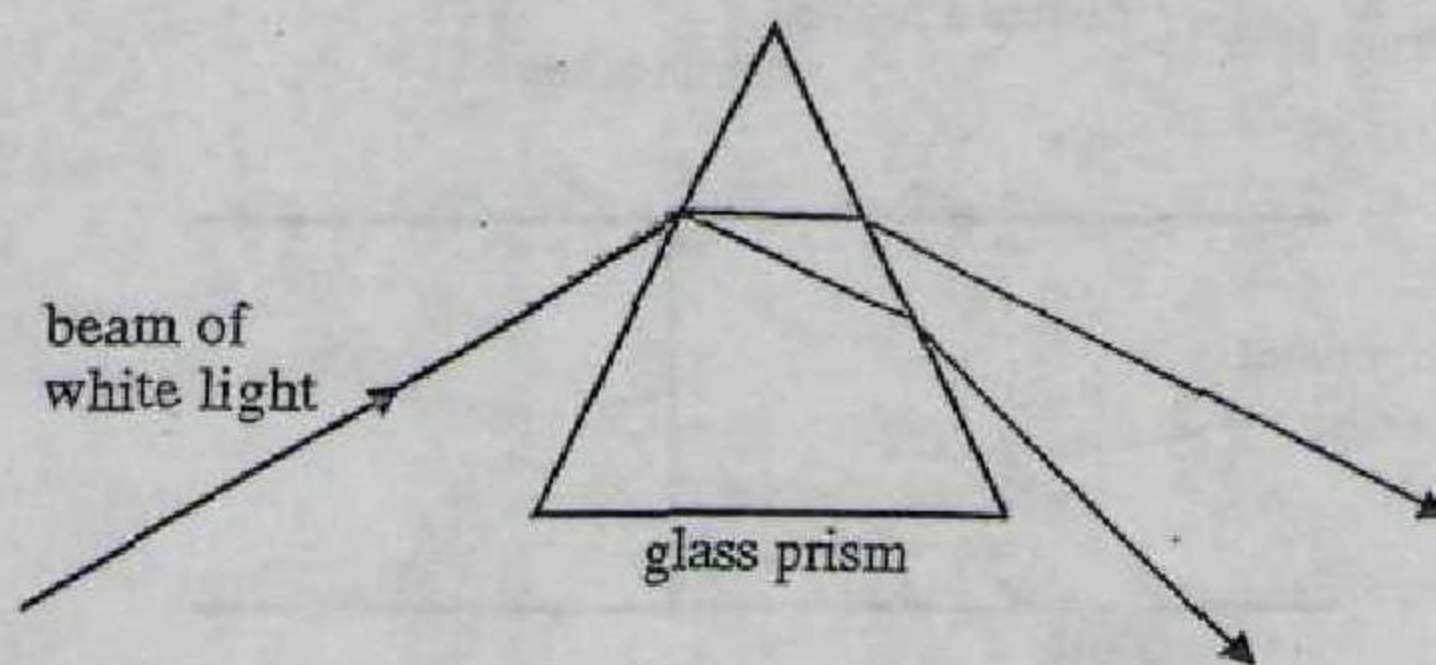
37. The diagram shows a pencil as it appears in a beaker filled with water.



Why does the pencil appear bent in the water?

- A the water absorbs light
- B the water reflects light
- C the water refracts light
- D the water repels light

38. The diagram shows a beam of white light passing through a prism.



What happens to the beam of white light in the glass prism?

- A It is reflected.
- B It is refracted.
- C It is absorbed.
- D It forms a shadow.

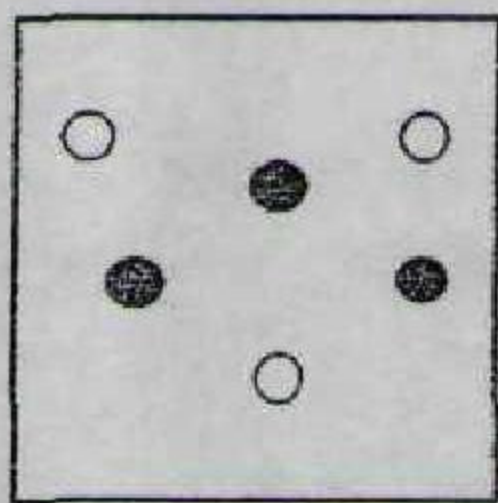
39. A liquid has the formula H_2O .

Which diagram shows molecules of the liquid?

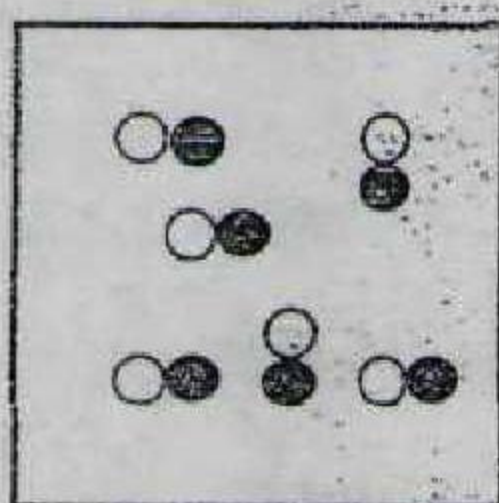
Key

○ H

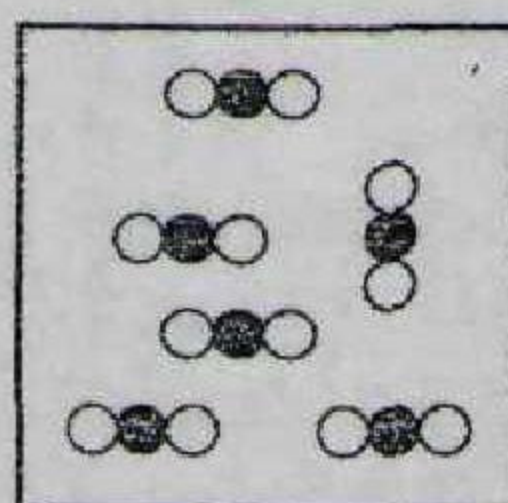
● O



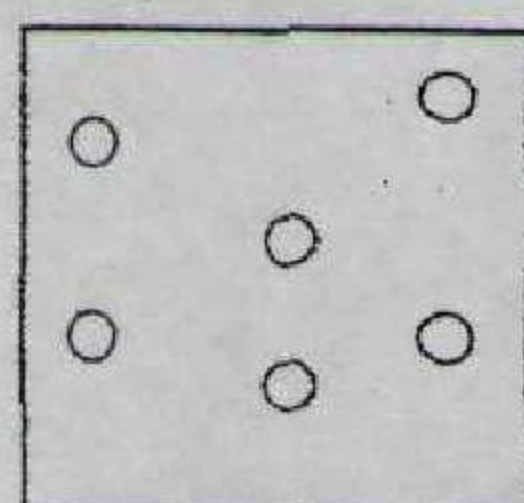
A



B



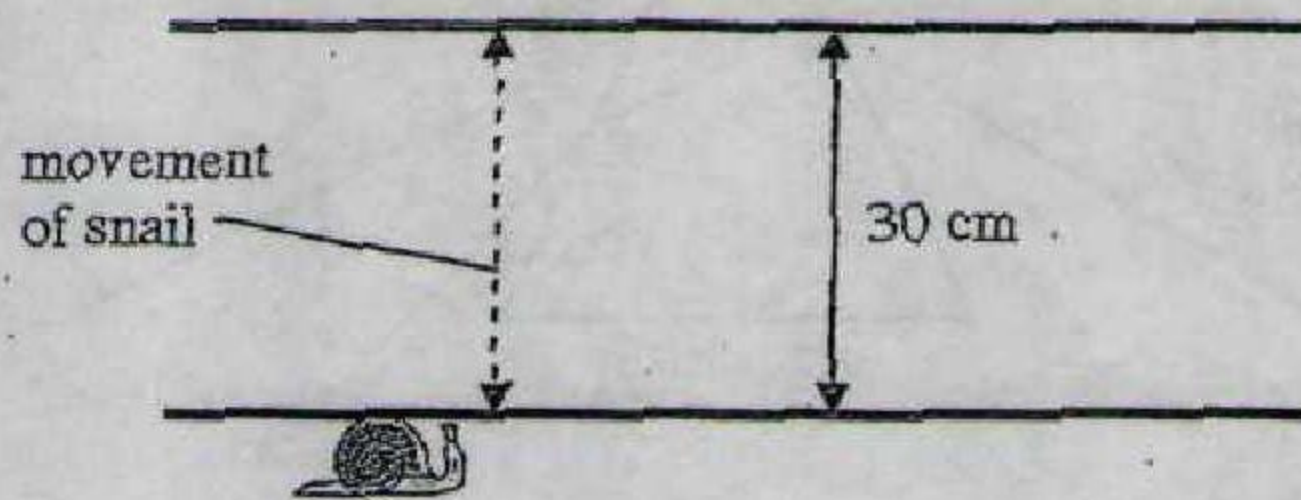
C



D

40. A snail crosses an alley 30 cm wide at a speed of 0.2 cm/s

$$\left(\text{average speed} = \frac{\text{distance moved}}{\text{time taken}} \right)$$



How long does the snail take?

- A 0.0067 s
- B 6.0 s
- C 15 s
- D 150 s

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QUESTION	MARK
1	
2	
3	
4	
5	
6	
TOTAL	

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0047 GENERAL SCIENCE
PAPER 2 STRUCTURED QUESTIONS
(60 MARKS)

Wednesday **6 JUNE 2007** 2:10 – 3:10 P.M.

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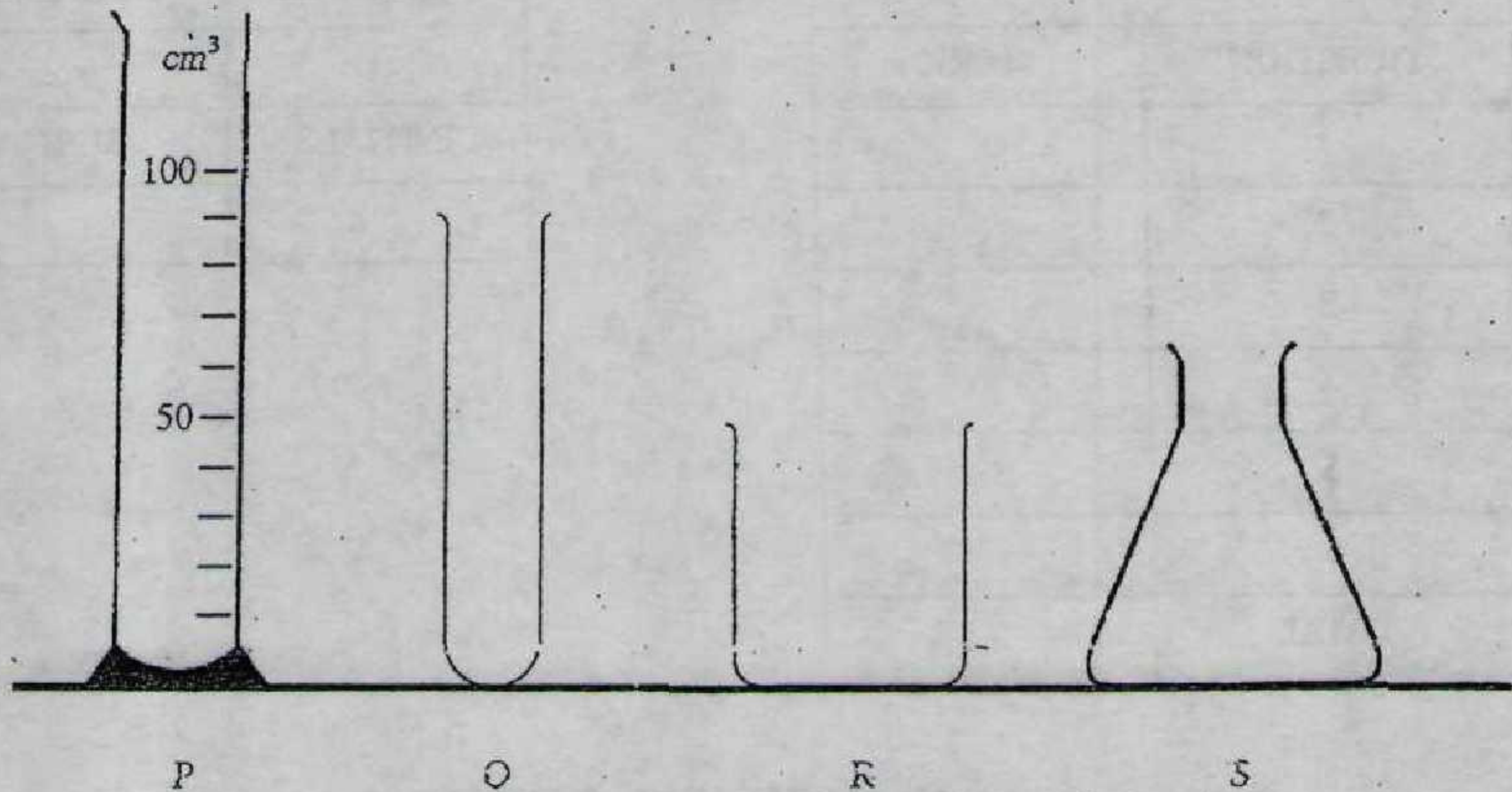
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Do not open this booklet until you are told to do so.

Write your school number, candidate number, surname and initials in the spaces provided at the top right hand side of this page.

Answer **ALL** questions in the spaces provided.

1. The diagram shows a variety of apparatus used in the science classroom.



- (a) (i) Name each piece of apparatus shown.

P _____

Q _____

R _____

S _____

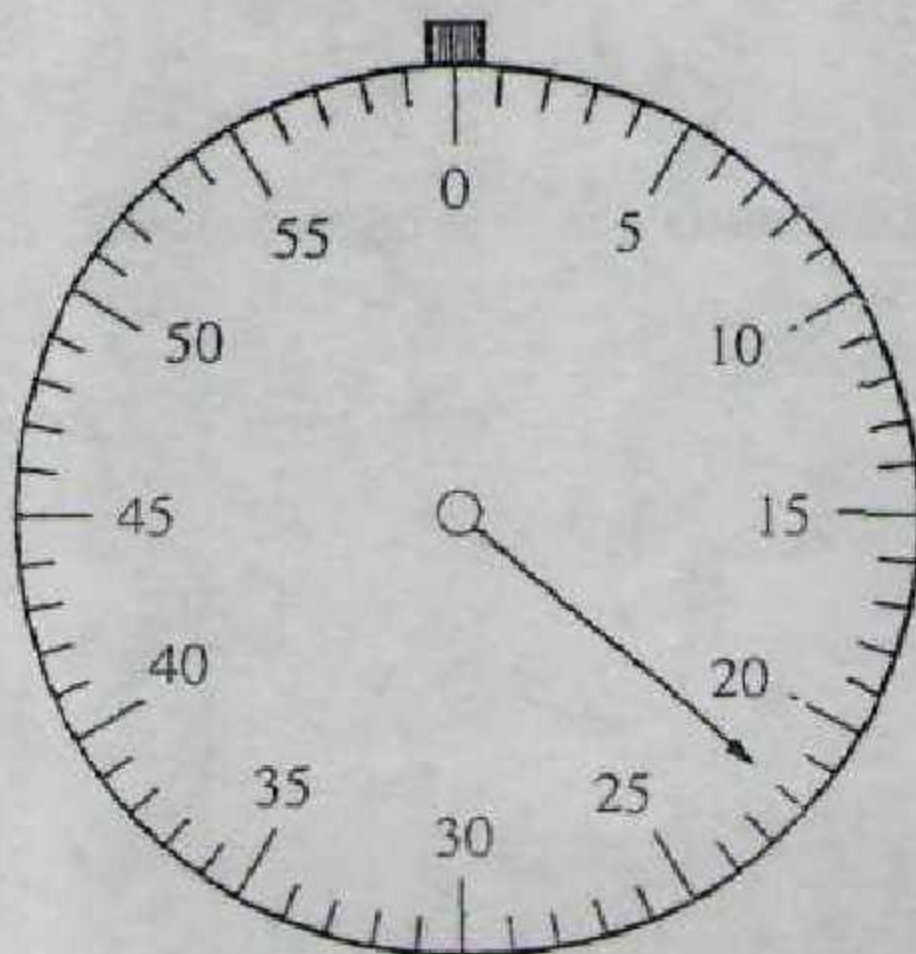
[2]

- (ii) Name the piece of apparatus which would best measure 75 cm of a liquid.

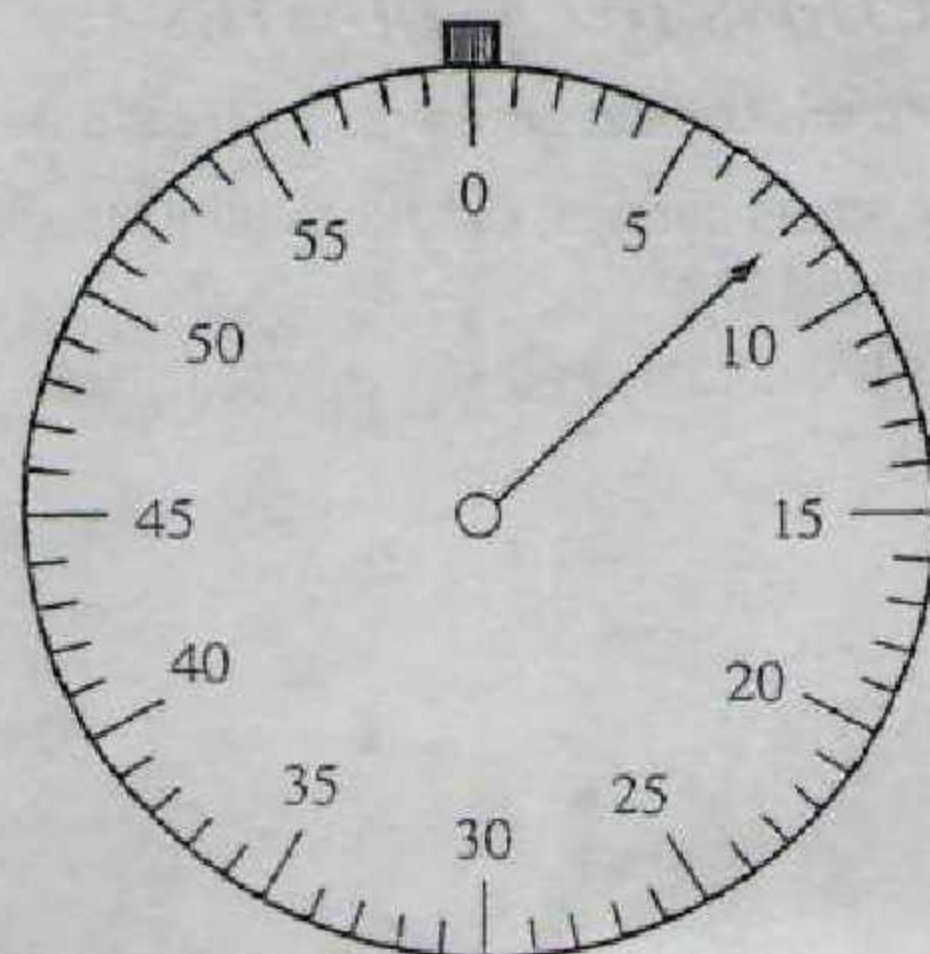
_____ [1]

- (b) These pieces of apparatus are used for taking measurements.

- (i) Calculate the difference in the readings on the stop watch.



first reading



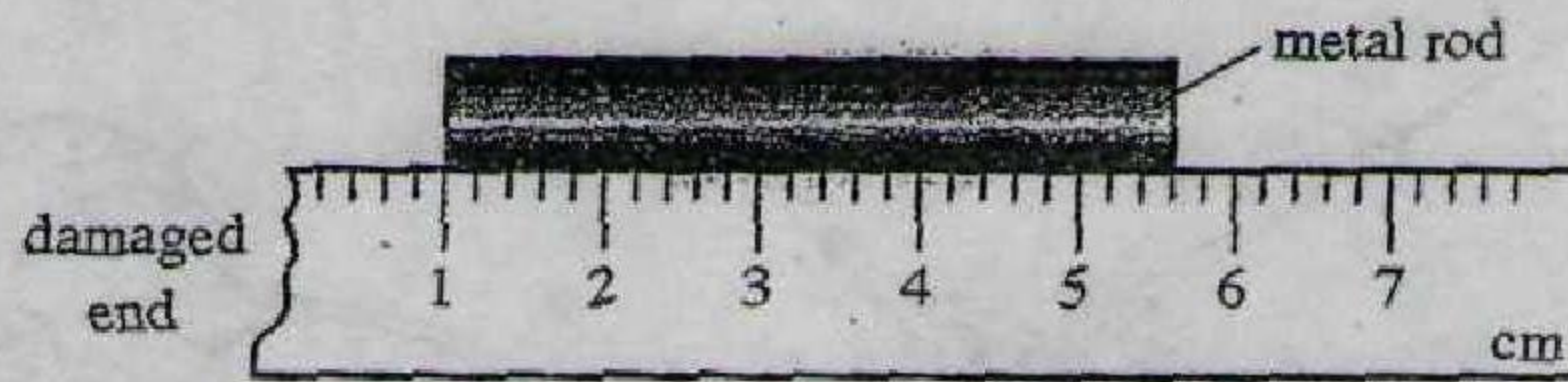
second reading

first reading _____ s second reading _____ s

difference in time _____ s

[3]

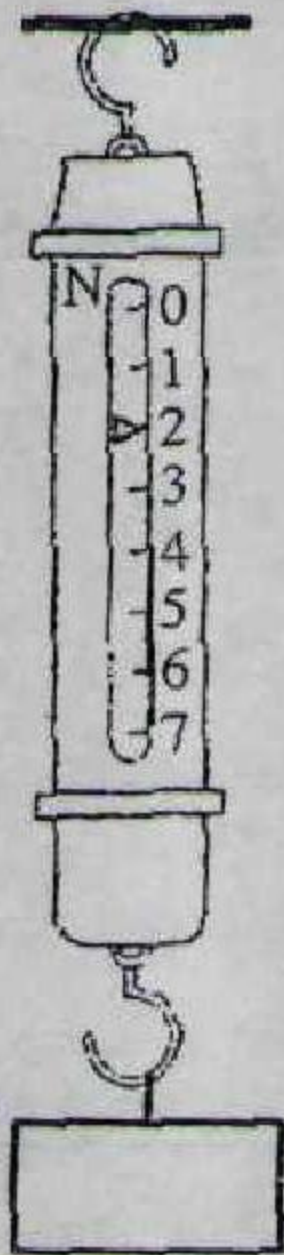
- (ii) Write the length of the iron rod in the space below.



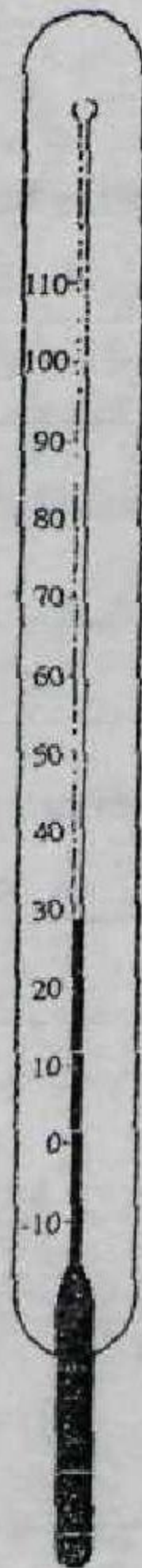
length _____ cm

[1]

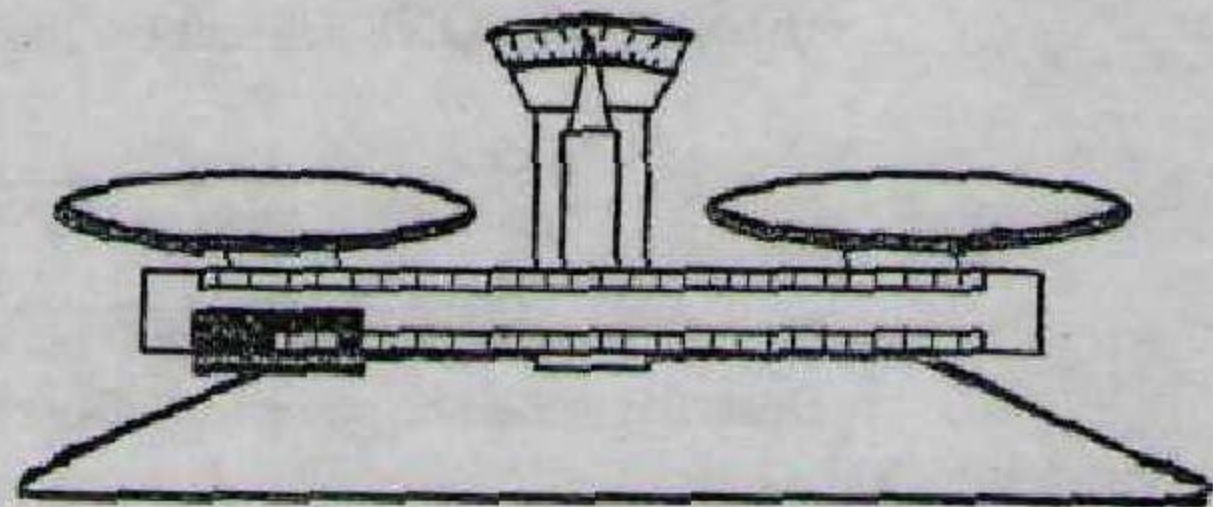
- (iii) From the diagrams select the letter and name the piece of apparatus which measures mass, temperature and weight. Write your answer in the spaces below.



W



X



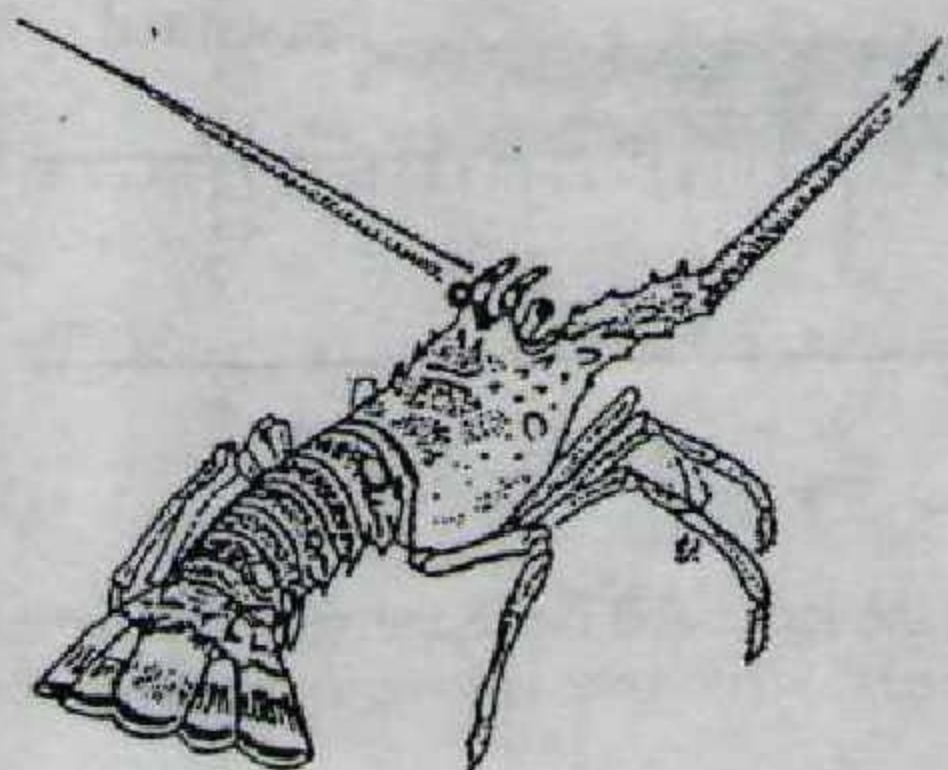
Y

	letter	name of apparatus
mass	_____	_____
temperature	_____	_____
weight	_____	_____

[3]

Total marks [10]

2. The diagram shows two living organisms.



lobster



mouse

- (a) (i) Name the class to which these organisms belong.

lobster _____

mouse _____

[2]

- (ii) Name **ONE** animal belonging to the same class as the animals shown above.

lobster _____

mouse _____

[2]

- (b) Describe the outer covering of each of these animals.

lobster _____

mouse _____

[2]

- (c) State **TWO** differences between these animals.

1 _____

_____ [1]

2 _____

_____ [1]

- (d) The lobster is an endangered species.

- (i) Define the term **endangered species**.

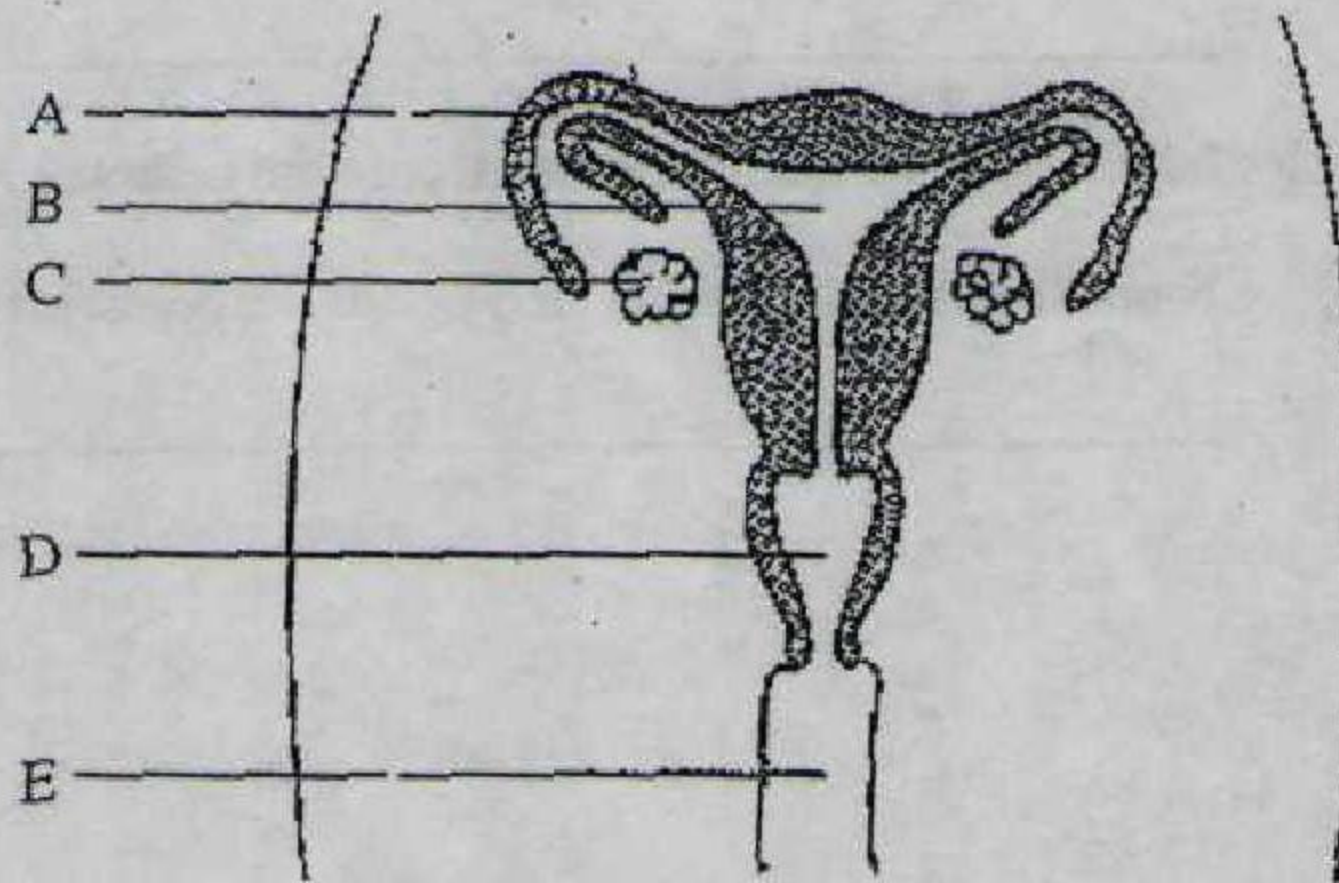
_____ [1]

- (ii) Name **ONE** other endangered animal species.

_____ [1]

Total marks [10]

3. The diagram shows a human body system.



- (a) Name the body system shown.

_____ [1]

- (b) Identify the letter of the structure where

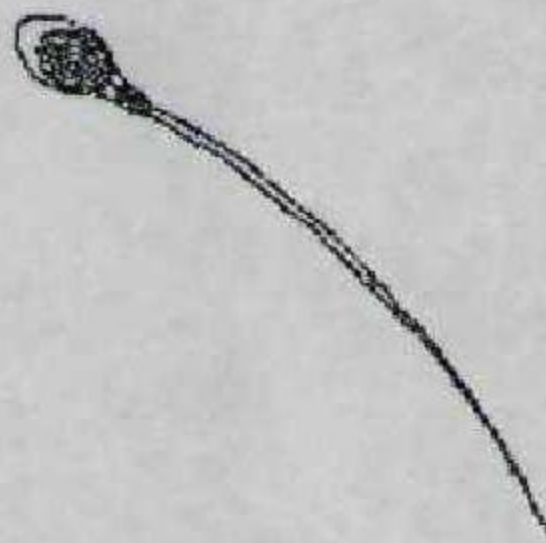
(i) the ova (eggs) are made, _____

(ii) an ovum (egg) is fertilized, _____

(iii) an embryo develops. _____

[3]

The diagram shows a human cell.



- (c) Name the cell shown and the organ where it is produced.

name of cell _____ [1]

organ where produced _____ [1]

- (d) Fertilization can be **external** or **internal**.

- (i) State whether fertilization in humans is **external** or **internal**.

Human fertilization is _____ [1]

The time taken for the baby to develop is the **gestation** period.

- (ii) Give another word that means the same as **gestation**.

_____ [1]

- (iii) State the time for the **normal gestation** period in humans.

_____ [1]

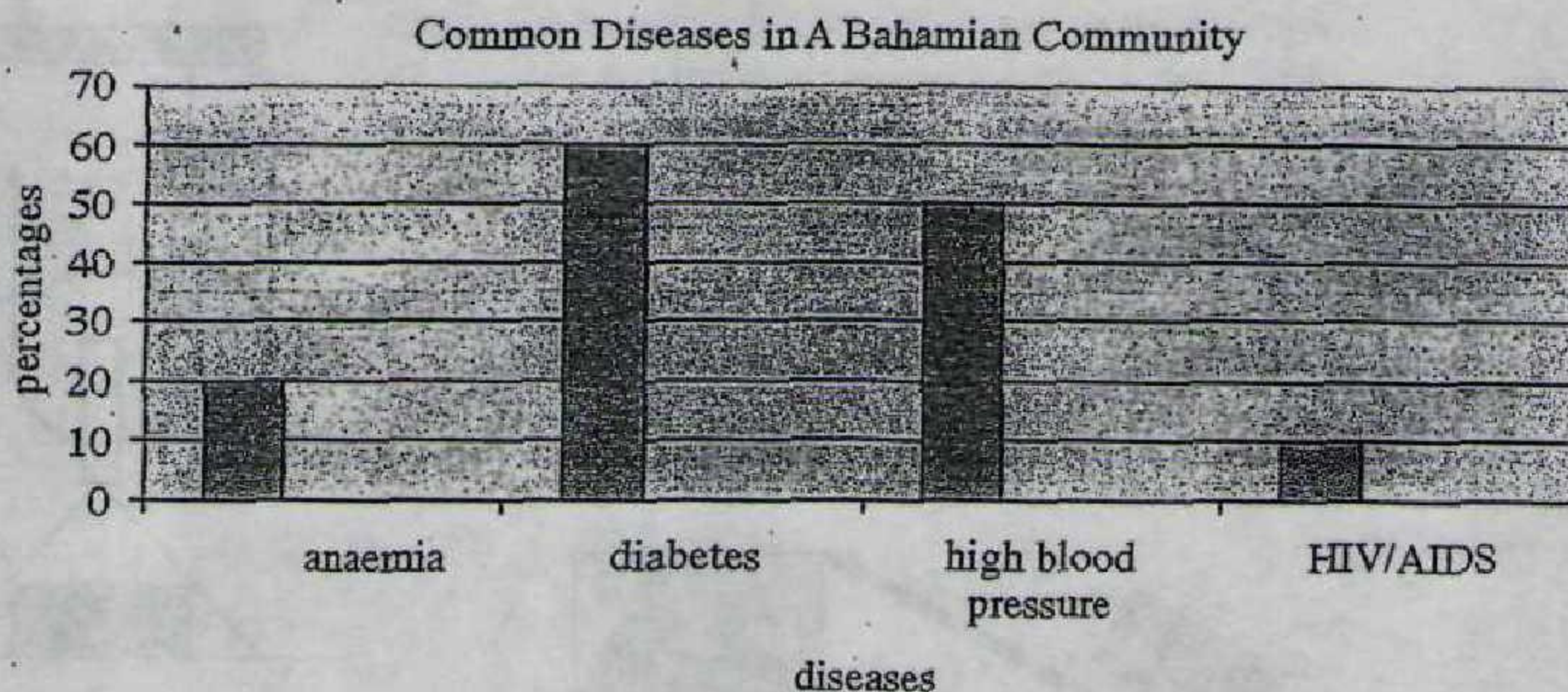
Babies inherit physical characteristics from both parents.

- (iv) Name the structure, inside the nucleus, responsible for these inheritable characteristics.

_____ [1]

Total marks [10]

4. The graph shows percentages of four different diseases in a Bahamian community.



- (a) Give the total percentage of the population which accounts for the **TWO** diseases, which affect a **majority** of the inhabitants in this community.

_____ [2]

- (b) Identify the disease from the graph which may be caused by

- (i) accumulation of sugar in the blood; _____
- (ii) fatty deposits on the walls of arteries; _____
- (iii) lack of iron in the diet; _____
- (iv) unprotected sex with an infected partner. _____

[4]

- (c) (i) What do the letters in the word **AIDS** stand for?

_____ [1]

- (ii) Identify the type of organism which transmits this disease.

_____ [1]

- (iii) Suggest **TWO** ways of decreasing the number of new HIV infections in this community.

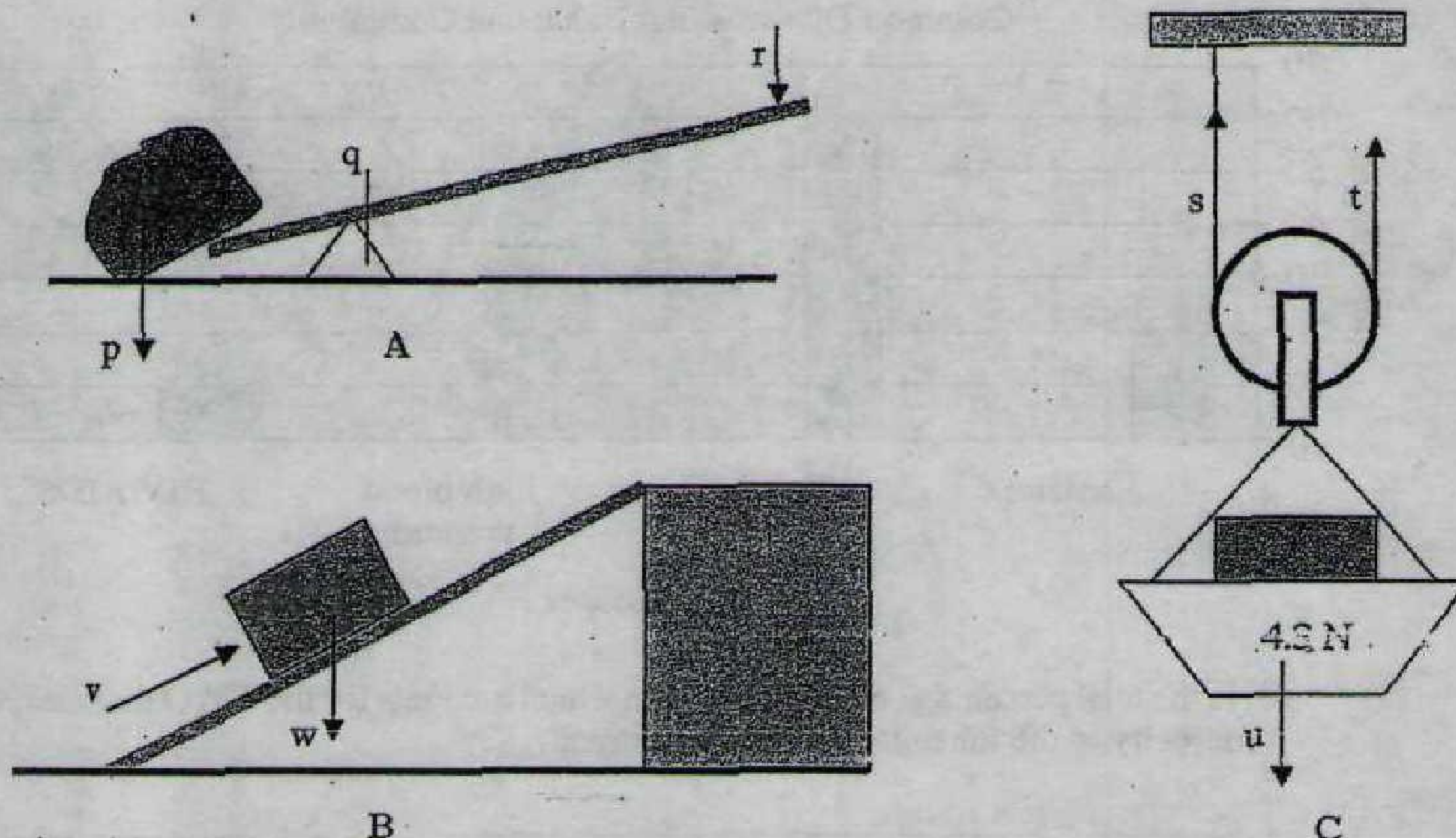
1 _____

2 _____

_____ [2]

Total marks [10]

5. The diagrams show **THREE** types of simple machines labelled A, B and C.



- (a) (i) Name the type of simple machine shown in A and B.

A _____

B _____ [2]

- (ii) Give **ONE** example of each of the simple machines named.

example

A _____ [1]

B _____ [1]

- (b) For the type of machine shown in diagram B, write the letter which represents the

(i) effort, _____

(ii) load. _____ [2]

- (c) (i) Name the simple machine with a **fulcrum**.

name _____ [1]

- (ii) Identify the letter which represents the fulcrum.

fulcrum _____ [1]

- (d) Diagram C shows a single moving pulley. Both strings, s and t, share the load equally.

Calculate how much effort will be needed, in each string, to support a load of 4.3 N? (Show working and give answer with the units).

[2]

Total marks [10]

6. A molecule of water is made of hydrogen and oxygen.

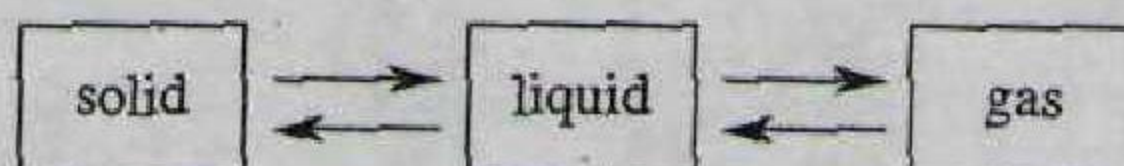
- (a) (i) Define a molecule.

_____ [1]

- (ii) Draw and label a molecule of water.

[2]

(b) Water can exist as a solid, liquid or gas.



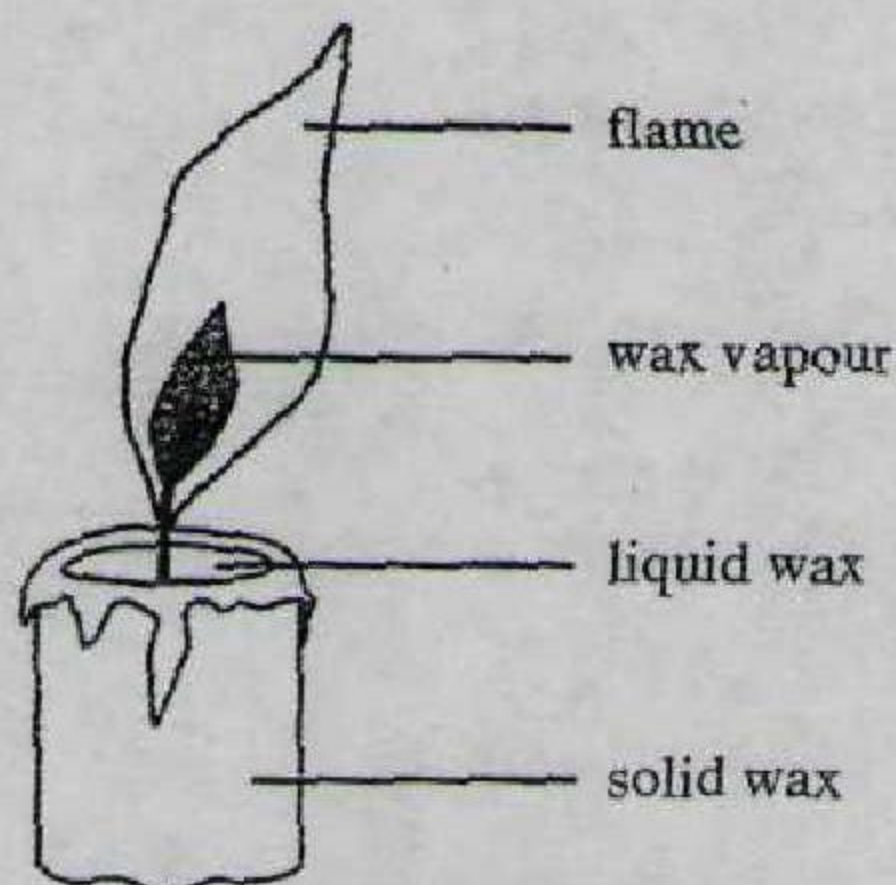
- (i) Name the form of energy which must be added or removed to bring about a change of state.

form of energy _____ [1]

- (ii) Name the process which occurs when water changes from a **liquid** to a **gas**.

name of process _____ [1]

(c) The diagram shows part of a burning candle.



Describe the changes which happen as the candle burns and the wax turns from **solid** to **liquid**,

- (i) the speed of the movement of the wax particles

_____ [1]

- (ii) the distance between the wax particles

_____ [1]

- (iii) Describe what happens to the liquid candle wax when the flame is put out.

_____ [2]

- (d) The candle shown is cinnamon-scented. As it burns the scent of cinnamon fills the room.

Name the process which allows this to happen.

_____ [1]

Total marks [10]