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**MINISTRY OF EDUCATION
BAHAMAS JUNIOR CERTIFICATE
EXAMINATION**

**0047 GENERAL SCIENCE
PAPER 1 MULTIPLE CHOICE QUESTIONS
(40 Marks)**

Wednesday **30 May 2018** 1:00 P.M.–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 which you have chosen.

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



This question paper consists of **11** printed pages and **1** blank page.

1. Which class of organism is cold-blooded with scales and gills?

- A an amphibian
- B a bird
- C a fish
- D a reptile

2. Which cells make up human blood?



- A w and x
- B w and z
- C y and x
- D y and z

3. Which science is the study of plants?

- A astronomy
- B botany
- C chemistry
- D zoology

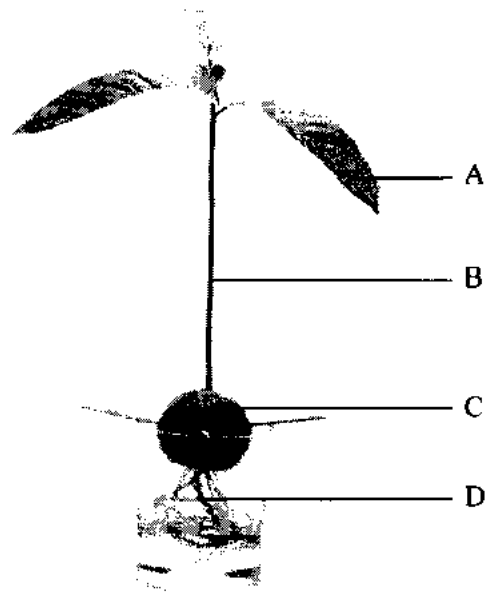
4. Which organism is an endangered species in The Bahamas?

- A Bahama Parrot
- B Nassau Grouper
- C Queen Conch
- D Spiny Lobster



The picture shows a plant growing in water.

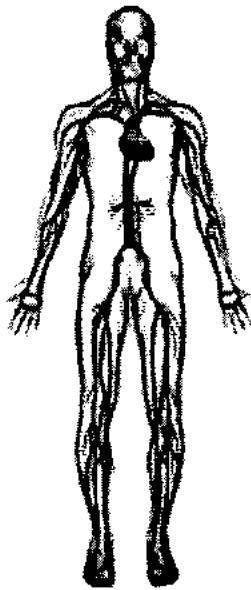
Use the picture to answer questions 5 and 6.



Which structure

5. is the seed; A B C D
6. transports food and water to all other structures of the plant? A B C D
7. Where does peristalsis take place?
 - A alimentary canal
 - B gall bladder
 - C liver
 - D pancreas
8. What is hypertension?
 - A high blood glucose
 - B high blood pressure
 - C lack of iron
 - D lack of iodine
9. Which action results in the chemical digestion of food?
 - A breakdown of food into nutrients by enzymes
 - B chewing food in the mouth
 - C churning of food in the stomach
 - D peristaltic waves of the alimentary canal

10. During which process is an ovum released from the ovary?
- A fertilisation
 - B menstruation
 - C ovulation
 - D pregnancy
11. Which organ nourishes and maintains the fetus during pregnancy
- A amniotic sac
 - B ovary
 - C placenta
 - D umbilical cord
12. The diagram shows a human body system.

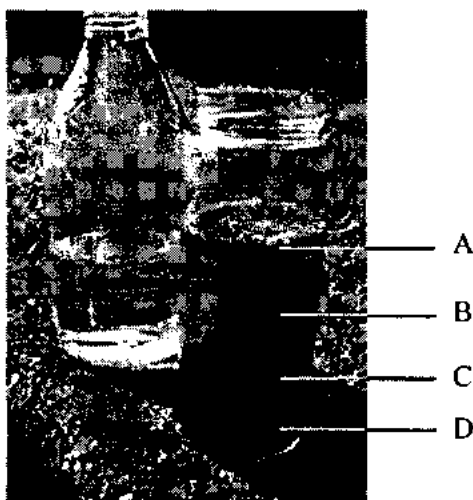


Which system is shown?

- A circulatory
 - B digestive
 - C endocrine
 - D nervous
13. Which fuel is classified as an alternative fuel?
- A coal
 - B ethanol
 - C kerosene oil
 - D petroleum oil



14. Which phrase states the law of conservation of energy?
- A ability to do both physical and mental work
 - B can neither be created nor destroyed only converted from one form to another
 - C causes an object to move faster in a straight line or slow down
 - D microscopic particles that are always in random, rapid motion
15. Which equation represents photosynthesis?
- A $\text{C}_2\text{H}_6 + \text{O}_2 \longrightarrow \text{CO}_2 + \text{H}_2\text{O}$
 - B $\text{CH}_4 + 2\text{O}_2 \longrightarrow \text{CO}_2 + 2\text{H}_2\text{O}$
 - C $\text{C}_6\text{H}_{12}\text{O}_6 + \text{O}_2 \longrightarrow \text{CO}_2 + \text{H}_2\text{O}$
 - D $6\text{H}_2\text{O} + 6\text{CO}_2 \longrightarrow 6\text{O}_2 + \text{C}_6\text{H}_{12}\text{O}_6$
16. Which of the following does not transmit sound?
- A gas
 - B liquid
 - C solid
 - D vacuum
17. Which soil layer is made up mainly of organic matter?



18. What is a solution?
- A a solute dissolved in a solvent
 - B a solute that does not dissolved in a solvent
 - C the amount of solute that can be dissolved by the solvent
 - D the amount of solute suspended in a solvent
19. What is the importance of the ozone layer of the Earth's atmosphere?
- A absorbs solar ultraviolet radiation
 - B burns meteors in the atmosphere
 - C makes radio communications possible
 - D supports satellites in the atmosphere

20. Brian found some rusty nails on the ground, near a construction site.



Which type of change did the nails undergo?

- A chemical
 - B metamorphosis
 - C physical
 - D sublimation
21. Which statement about acids and bases is **not** true?
- A acids and bases react with metals
 - B acids and bases have pH values
 - C acids and bases are corrosive substances
 - D acids and bases are hard, solid compounds
22. What is produced when soundwaves are reflected from a solid surface?
- A a beam
 - B an echo
 - C an image
 - D a shadow
23. Which force causes wear and tear on the tyres of vehicles and the soles of our footwear?
- A friction
 - B gravity
 - C magnetism
 - D weight
24. The diagram shows the appearance of a pencil in a clear glass of water.

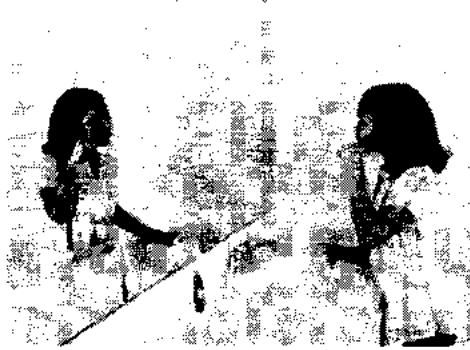


Which characteristic of light is shown?

- A absorption
- B inversion
- C reflection
- D refraction



25. Amy is standing 75 cm in front of a plane mirror.

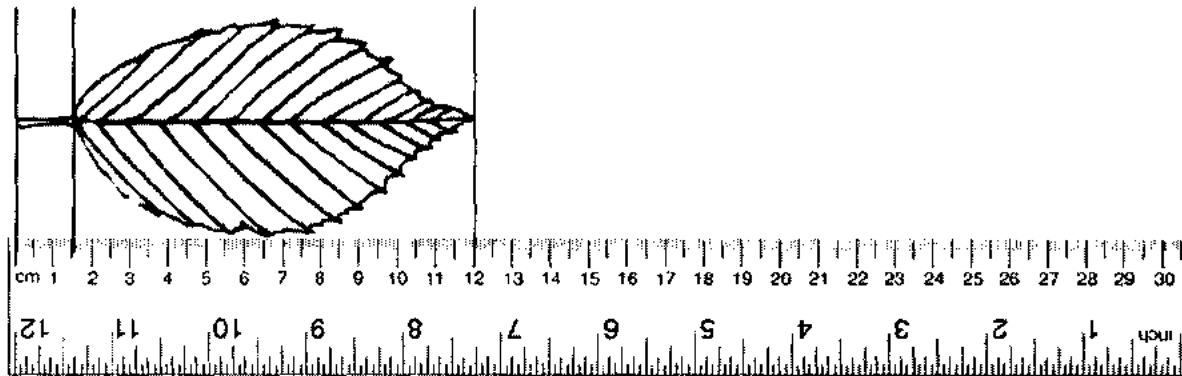


How far is Amy's image behind the mirror?

- A 38.0 cm
 - B 37.5 cm
 - C 75.0 cm
 - D 150.0 cm
26. When a piece of metal is heated it expands.

What happens to the metal once it cools?

- A it bends
 - B it contracts
 - C it dilates
 - D it inflates
27. Amanda is measuring the length of a leaf for an investigation.



What is the length of the leaf?

- A 11.0 cm
- B 11.5 cm
- C 12.0 cm
- D 12.5 cm

28. Air is a mixture of gases.

What is the percentage of CO_2 in the air?

- A 71
- B 21
- C 0.9
- D 0.03

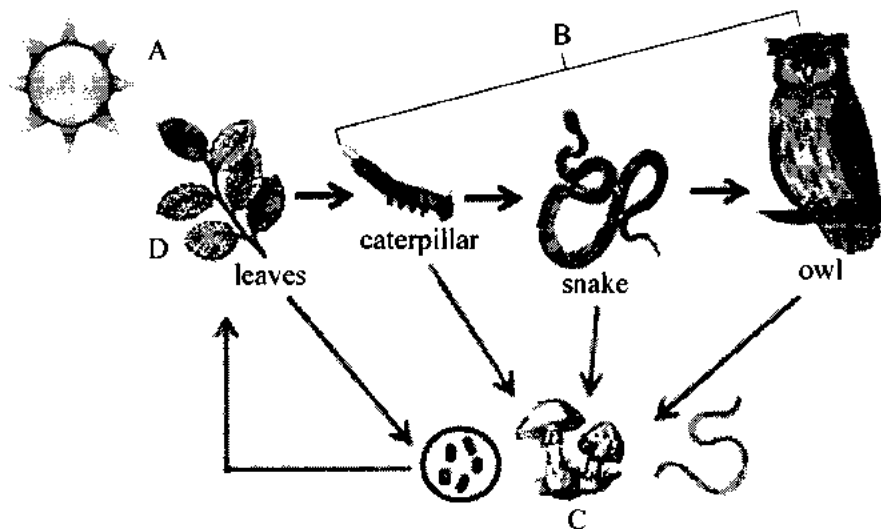
29. Which phrase describes current electricity?

- A attraction of a body toward the centre of the earth
- B attraction that pulls two objects toward each other
- C flow of charged particles through a conductor
- D repulsion or attraction of charged particles

30. Which plants have root nodules?

- A cedar tree
- B green algae
- C ferns
- D pea

31. The diagram shows the organisms in a food chain.



What is the **producer** in this food chain?



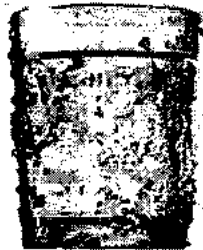
32. Which row describes the function of **xylem** and **phloem** vessels?

	xylem	phloem
A	absorbs light for photosynthesis	prevents excess loss of water
B	provides protection for soft inner layers	stores and supplies food for the seedling
C	regulates the rate of transpiration	allows for gaseous exchange
D	transports water with dissolved minerals	transports sugars to storage organs

33. What is the boiling point of pure water on the Celsius scale?

- A 0°
- B 32°
- C 100°
- D 212°

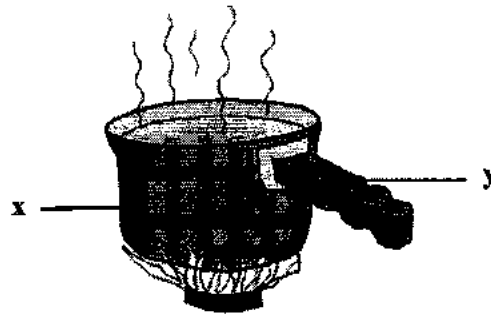
34. Which process causes water droplets to form on a glass of cold iced tea on a hot summer's day?



- A condensation
- B conduction
- C convection
- D evaporation

35. The diagram shows a pot of boiling water.

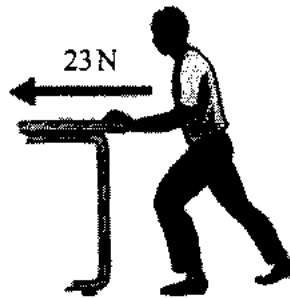
The pot, x is made of copper and the handle, y is made of wood.



Which row describes the properties of x and y which makes them suitable for their functions?

	x	y
A	good insulator	good conductor
B	good conductor	good insulator
C	good radiator	poor radiator
D	poor conductor	poor insulator

36. A laboratory technician uses a force of 23.0N to push a trolley a distance of 3.0m across a laboratory preparatory room.

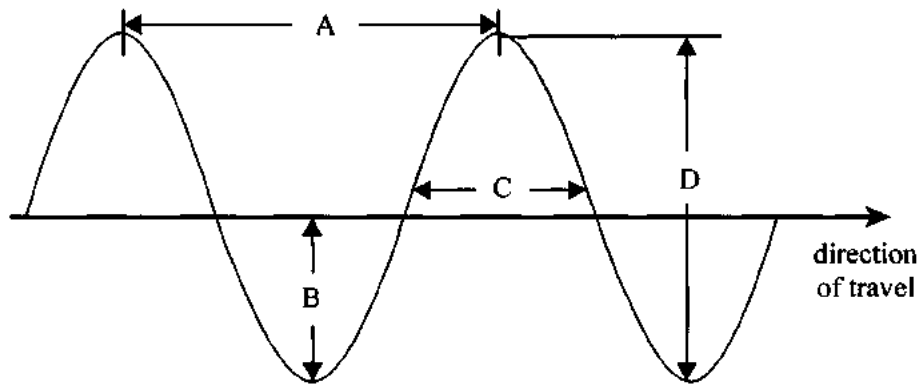


What is the work done by the laboratory technician?

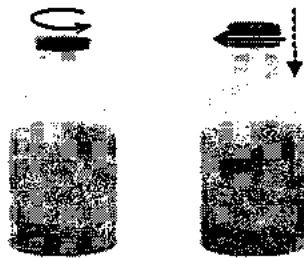
- A 7.6J
- B 20.0J
- C 26.0J
- D 69.0J



37. Which part is the wavelength?



38. Tony applies a turning action to the cap of a bottle to open it.



Which simple machine does the bottle and cap represent?

- A pulley
 - B screw
 - C wedge
 - D wheel and axle
39. Mary uses a nutcracker to crack open a walnut.



Which class of lever is a nutcracker?

- A 1st
- B 2nd
- C 3rd
- D 4th

40. Nuclear energy is the energy in the nucleus of an atom. Nuclear reactions release heat energy which is used to turn turbines to generate electricity.



What is a **disadvantage** of using nuclear energy?

- A clean energy causes no air pollution
- B reliable and constant power generation
- C small amount of fuel produces a large amount of energy
- D waste will remain toxic for a long period after use



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QUESTION	MARK
1	
2	
3	
4	
5	
6	
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SCHOOL No.	CANDIDATE No.
INITIALS	SURNAME

MINISTRY OF EDUCATION BAHAMAS JUNIOR CERTIFICATE EXAMINATION

0047 GENERAL SCIENCE PAPER 2 STRUCTURED QUESTIONS (60 Marks)

Wednesday **30 May 2018** 2:15 P.M.–3:15 P.M.

INSTRUCTIONS TO CANDIDATES

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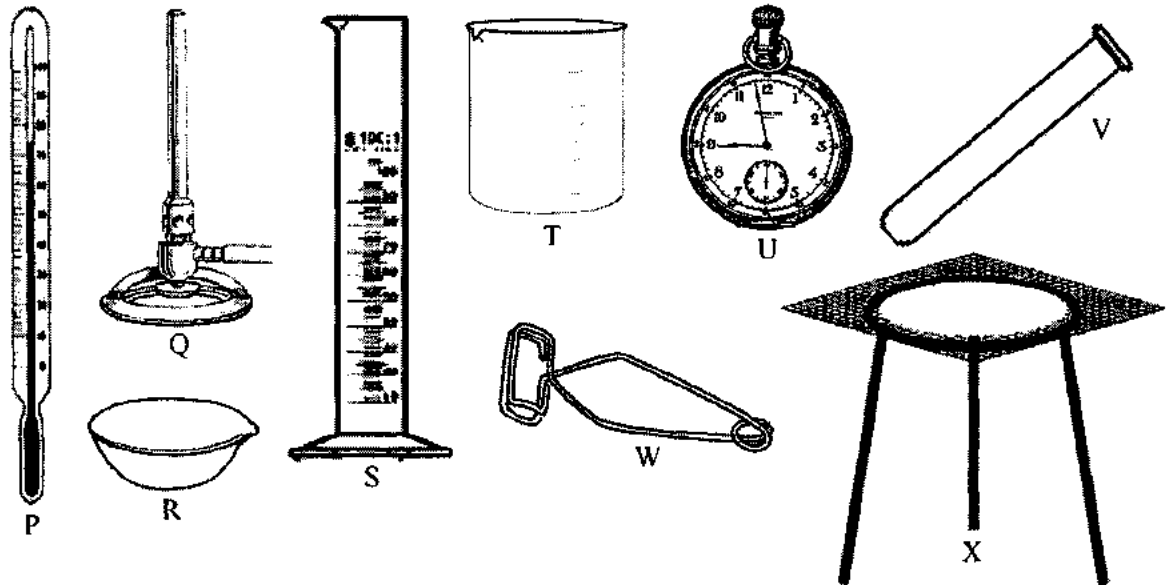
Write your school number, candidate number, surname and initials in the spaces provided at the top right hand side of this page.

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



This question paper consists of **10** printed pages and **2** blank pages.

1. The diagram shows a variety of apparatus found in a science laboratory.

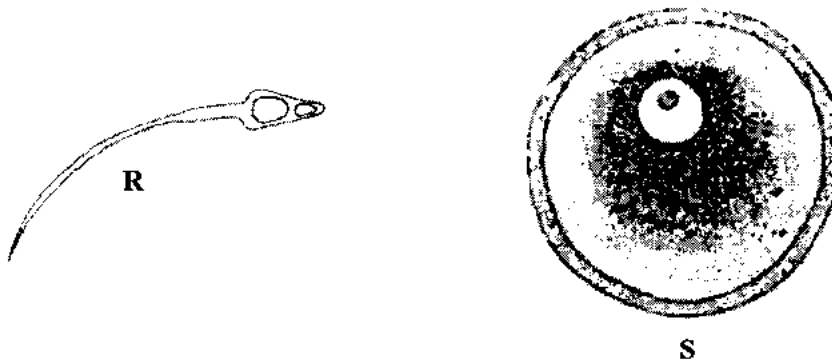


- (a) Write the **letter** of the apparatus that is most suitable for
- use as a platform for glassware during heating _____
 - measuring a precise volume of a liquid _____
 - measuring the temperature of substances _____
 - producing a single open gas flame for heating _____
 - holding or pick up a hot test-tube _____ [5]
- (b) Mara wants to separate a solution of salt and water in the science laboratory. She has the solution. Name 3 pieces of apparatus, from the diagram, that she would need to conduct this experiment.
- _____
 - _____
 - _____ [3]
- (c) Suggest **TWO** safety precautions Mara should follow during this experiment.
- _____
 - _____ [2]

TOTAL MARKS [10]



2. The diagram shows **TWO** specialised human body cells labelled **R** and **S**.



- (a) (i) Name the cells labelled **R** and **S**.

cell **R** _____

cell **S** _____ [2]

- (ii) Give the one **name** for both cell **R** and cell **S**.

_____ [1]

- (iii) Name the **organs** where each of these cells are produced.

cell **R** _____

cell **S** _____ [2]

- (b) (i) Name the **process** that happens when cell **R** fuses with cell **S**.

_____ [1]

- (ii) Name the cell which results from this union.

_____ [1]

- (c) A typical cell is made up of **three** basic structures.

Other than the nucleus, name **two** other structures of a typical human cell.

1. _____

2. _____ [2]

- (d) Name **one** contraceptive which prevents pregnancy and also gives some protection from sexually transmitted diseases.

_____ [1]

TOTAL MARKS [10]

3. Farmers use several methods to improve the yield from their crop.



- (a) One method is the use of fertilisers.

- (i) Give **one** example of a **natural** fertiliser.

_____ [1]

- (ii) Name **one** element found in the artificial **NPK** fertiliser.

_____ [1]

- (iii) Soils are classified based on the **size** and **texture** of its particles.

Give **one** reason why **sandy** and **clay** soils may not be suitable for growing a variety of food crops.

sandy _____

clay _____ [2]

- (b) In agriculture and gardening, a **beneficial organism** is any organism that benefits the growing process.

Identify **one insect** that is a beneficial organism and give its function.

name of insect _____

beneficial function _____ [2]

- (c) The number of cotyledons present in the seed is one characteristic used by scientists to classify angiosperms.

- (i) Identify the characteristic which makes a plant dicotyledonous.

_____ [1]

- (ii) Define the term **angiosperm**.

_____ [1]



(d) List **two** optimum conditions necessary for the **germination** of a seed.

1. _____
2. _____ [2]

TOTAL MARKS [10]

4. The food label on a box shows the nutritional information in its contents.

Nutrition Facts		
Serving Size 3/4 Cup (27g)		
Amount Per Serving	Cereal	With 1/2 Cup Skim Milk
Calories	90	130
Calories from Fat	10	10
% Daily Value		
Total Fat 1g*	2%	2%
Saturated Fat 0g	0%	0%
Trans Fat 0g	0%	0%
Cholesterol 0mg	0%	0%
Sodium 190mg	8%	11%
Potassium 85mg	2%	8%
Total Carbohydrate 23g	8%	10%
Dietary Fiber 5g	20%	20%
Sugars 5g		
Protein 2g		
Vitamin A	0%	4%
Vitamin C	10%	15%
Calcium	0%	15%
Iron	2%	2%

- (a) (i) Name the main **organic** food substance in this cereal that is absorbed by the body after digestion.

food _____ [1]

- (ii) State how this food is used in the body after digestion.

_____ [1]

- (iii) Find the number of calories in **two** servings of cereal with **one** cup of skimmed milk.

Show your working.

calories _____ [2]

- (iv) Name the food group to which cereals belong.

_____ [1]

- (b) Define a **balanced diet**.

 _____ [1]



- (c) Minerals and vitamins in food provide materials for growth, energy and health. A lack of minerals and vitamins in our food may cause deficiency diseases.

Identify the mineral or vitamin from the food label which may cause the deficiency disease listed and name the part of the body it affects to complete the table.

deficiency disease	mineral or vitamin	part of body affected
anaemia		
rickets		

[4]

TOTAL MARKS [10]

5. This question is about magnets.

- (a) (i) State the name given to **natural magnets**.

_____ [1]

- (ii) Use words from the box to complete the sentences. **Each word may be used once, more than once or not at all.**

force	magnetic force
magnetic field	pole

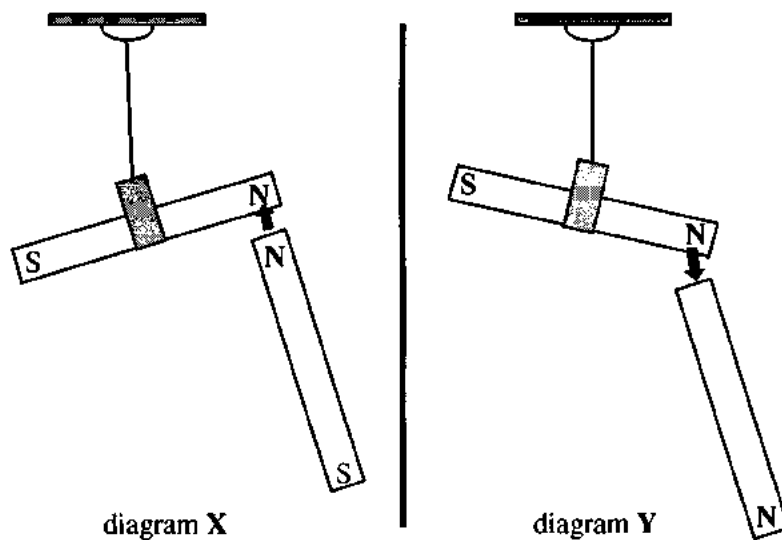
The strongest part of a magnet is the _____

A magnet is surrounded by an area called its _____ which exerts a force on other magnets or magnetic materials. [2]

- (iii) State one use of magnets.

_____ [1]

- (b) Diagrams X and Y show an activity using magnets. Different ends of a bar magnet are brought near to the end of a free-swinging magnet. The results are shown in the diagrams.



- (i) Identify the law that is being demonstrated by this activity.

_____ [1]

State what is happening in each diagram

- (ii) diagram X;

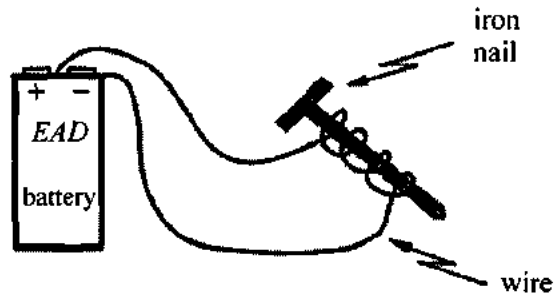
_____ [1]

diagram Y.

_____ [1]



- (c) The diagram shows a battery, wires coiled around an iron nail set up to form a simple circuit.



- (i) Name the type of magnet formed by this simple circuit.

_____ [1]

- (ii) State what will happen if one end of the wire is not connected to the battery.

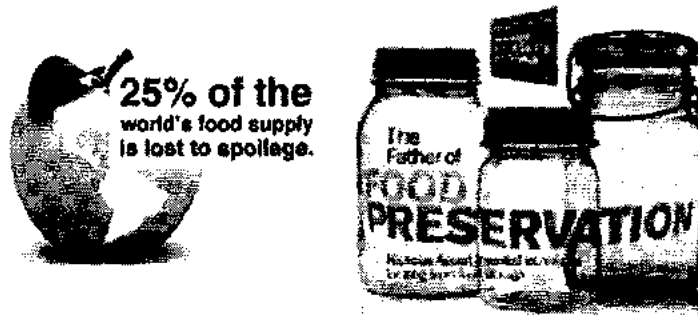
_____ [1]

- (iii) Suggest a way to find out if the nail is magnetised.

_____ [1]

TOTAL MARKS [10]

6. Michael's General Science class is given a project on food preservation.



- (a) Michael decides to start her project using the **web browser** on his laptop.

- (i) State what the **web browser** allows him to do.

_____ [1]

- (ii) While collecting information for his project, Michael discovers that there are groups of microscopic organisms responsible for food spoilage.

Name a **group** of microorganism that causes food to spoil.

_____ [1]

- (iii) Name **two** microorganisms that cause food spoilage.

1. _____

2. _____ [2]

- (iv) Describe a beneficial use of a microorganism in the food industry

_____ [1]

- (b) Suggest **three** methods of food preservation Michael is likely to have discovered.

1. _____

2. _____

3. _____ [3]

- (c) Michael learned a lot while researching his project. He is excited about sharing his findings.

Identify **two** social media or social networking services that is most suitable for sharing his research online.

1. _____

2. _____ [2]

TOTAL MARKS [10]



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