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**MINISTRY OF EDUCATION
BAHAMAS JUNIOR CERTIFICATE
EXAMINATION 2013**

0047 GENERAL SCIENCE

**PAPER I (MULTIPLE CHOICE QUESTIONS)
(40 Marks)**

Wednesday **29 May 2013** 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 **13** printed pages.

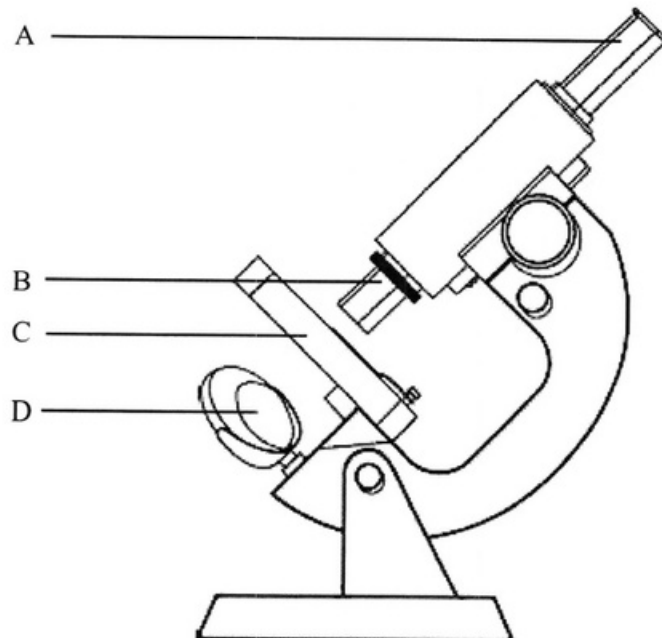
1. Which branch of science is the study of plants?

- A Archaeology
- B Anthropology
- C Botany
- D Zoology

2. Which organism is **NOT** an endangered species?

- A Bahama Parrot
- B Black Crab
- C Iguana
- D Spiny Lobster

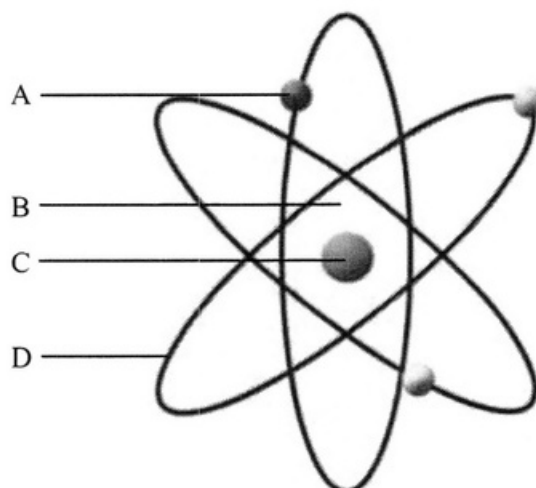
3. Which part of the microscope holds the slide?



4. Which of these simple plants have **NO** chlorophyll?

- A algae
- B ferns
- C fungi
- D mosses

5. Where are the **protons** and **neutrons** found?



6. How many atoms are in the formulae $2\text{C}_6\text{H}_{12}\text{O}_6$?

A 24
B 26
C 48
D 96

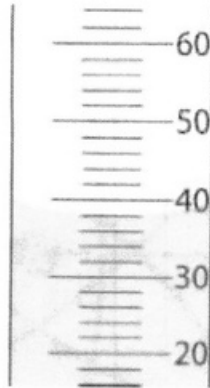
7. Which of the following does **NOT** transmit sound?

A gases
B liquids
C solids
D vacuums

8. Which gas is taken from the atmosphere by bacteria and converted into nitrates for plants to use?

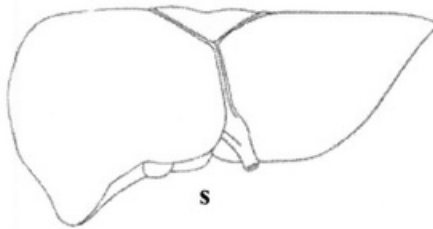
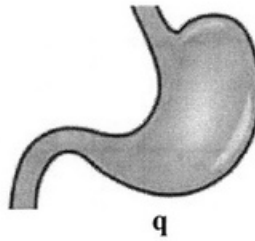
A carbon dioxide
B nitrogen
C oxygen
D water vapour

9. What is the volume of liquid in the measuring cylinder?



- A 40 cm³
B 39 cm³
C 38 cm³
D 34 cm³
10. Which structure cushions and protects the developing fetus?
- A amniotic sac
B placenta
C stomach
D umbilical cord
11. Which organism causes AIDS and influenza?
- A bacterium
B fungus
C protozoan
D virus
12. When is the hurricane season in The Bahamas?
- A June 1st, November 30th
B June 31st, November 1st
C June 31st, December 31st
D June 31st, November 30th

13. Which **TWO** organs are from the same system?



- A p and t
- B q and s
- C r and t
- D s and r

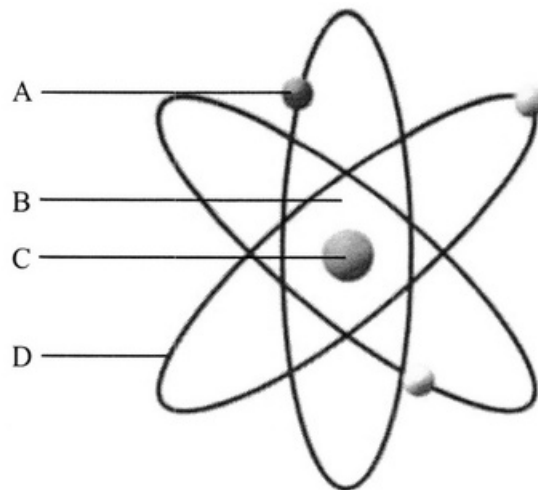
14. Which temperature value is 50° higher than the freezing point of pure water?

- A 0°C
- B 50°C
- C 82°C
- D 162°C

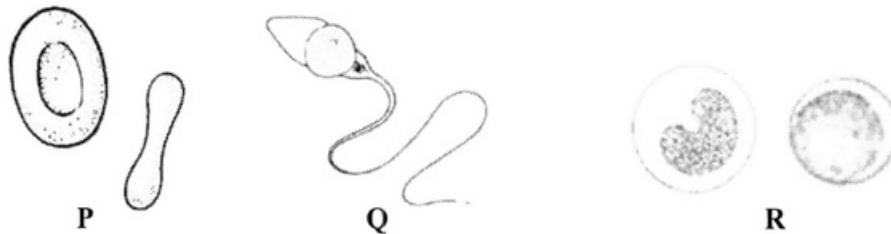
15. Which of the following is responsible for children usually looking like their parents?

- A fertilization
- B genes
- C gestation
- D pregnancy

16. Where are the **protons** and **neutrons** found?



17. The diagram shows **THREE** specialised cells found in the human body.



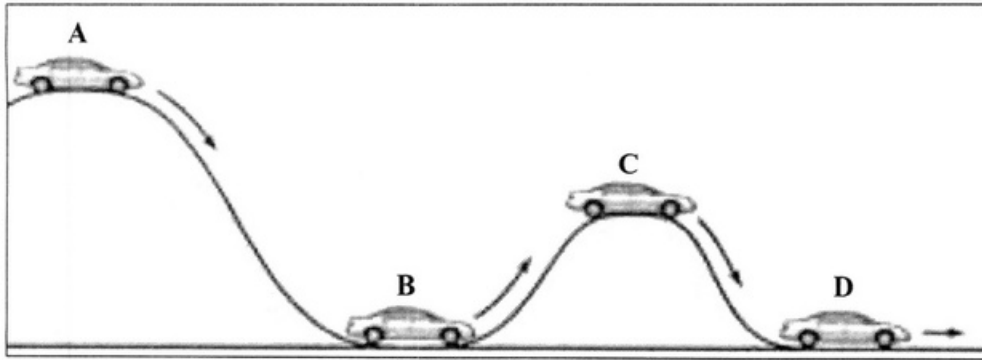
Which row of the table gives the correct function of each cell?

	P	Q	R
A	fertilises ovum	transports oxygen	produces energy
B	produces energy	protects the body	fertilises ovum
C	protects the body	produces energy	transports oxygen
D	transports oxygen	fertilises ovum	protects the body

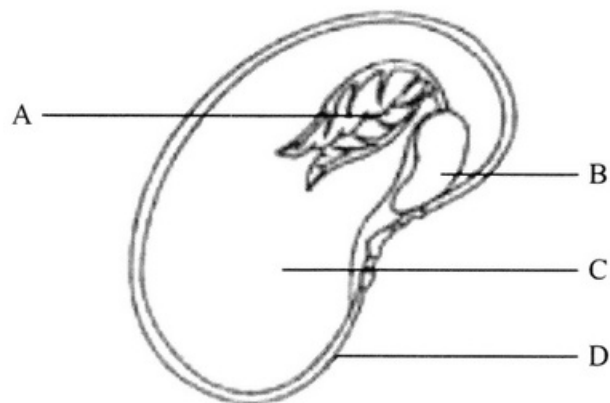
18. Which process requires optimum conditions for the growth of seeds and spores?

- A gestation
- B germination
- C fertilisation
- D photosynthesis

19. At which position does the car have the most potential energy?



20. Which labelled structure shows the radicle?



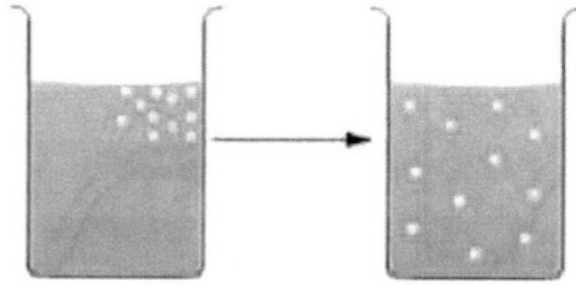
21. Which **natural** substance can be added to soil to make it yield more crops?

- A commercial fertiliser
- B limestone
- C plant and animal manure
- D potash

22. Which of the following is the main source of energy for the Earth?

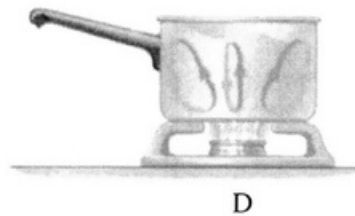
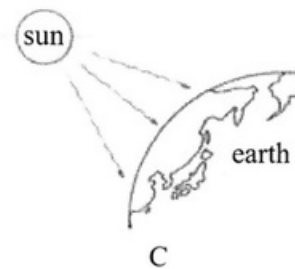
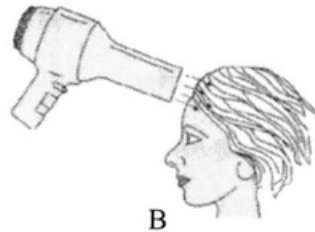
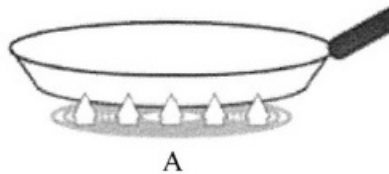
- A electricity
- B Moon
- C Stars
- D Sun

23. Mrs. Sweeting placed a sugar cube in a beaker of coloured water. After a while the students observed that the sugar cube had seemingly disappeared.

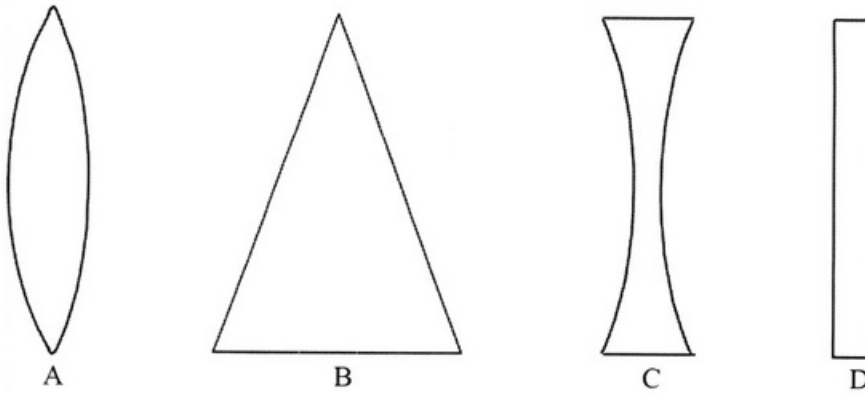


Which process explains what happened to the sugar cube?

- A diffusion
 - B evaporation
 - C homeostasis
 - D osmosis
24. What is caused by the gravitational forces exerted by the Moon and the Sun and the rotation of the Earth?
- A phases of the moon
 - B solar and lunar eclipses
 - C temperatures
 - D the tides
25. Which diagram shows heat transfer by conduction **ONLY**?



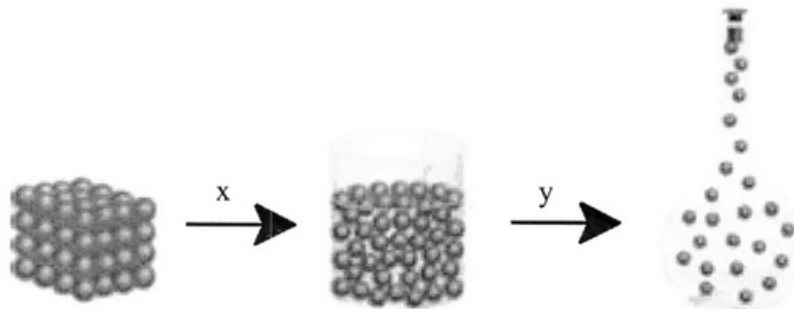
26. Which diagram shows a concave lens?



27. Which planet is characterised by its many moons?

- A Earth
- B Jupiter
- C Mercury
- D Venus

28. Water can exist as a solid, a liquid or a gas. When energy is added or subtracted, a change of state occurs.



Which processes are taking place at **x** and **y**?

	process	
	x	y
A	condensation	freezing
B	evaporation	melting
C	freezing	condensation
D	melting	evaporation

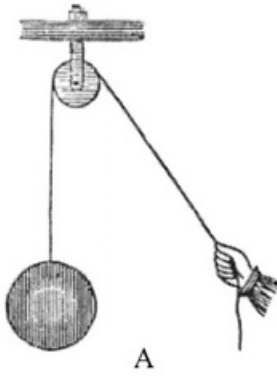
29. Mrs. Sweeting placed a pencil in a glass of water. The students observed that the pencil appeared bent.



Which process describes what happens to the light rays from the pencil as they pass from air into water?

- A dispersion
 - B diffraction
 - C refraction
 - D reflection
30. Which number indicates the pH of a neutral substance?
- A 1
 - B 3
 - C 5
 - D 7
31. Why is the smoke from the firing of a gun seen before the sound of the gunshot is heard?
- A light is faster than sound
 - B smoke is seen but sound cannot be seen
 - C smoke and sound are not produced instantaneously
 - D the eye reacts faster than the ear
32. What is the strongest part of a magnet?
- A both poles
 - B middle
 - C North Pole
 - D South Pole

33. Which diagram shows a complex machine?



34. Which process involves the skin, kidneys, liver and lungs?

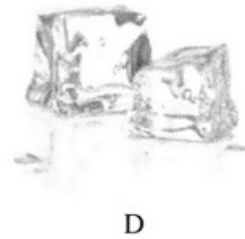
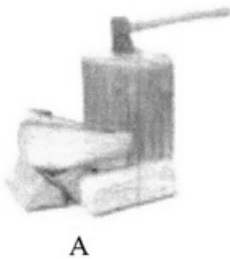
- A digestion
- B excretion
- C reproduction
- D respiration

35. Which material is most likely to be used as the prongs in the plug shown?

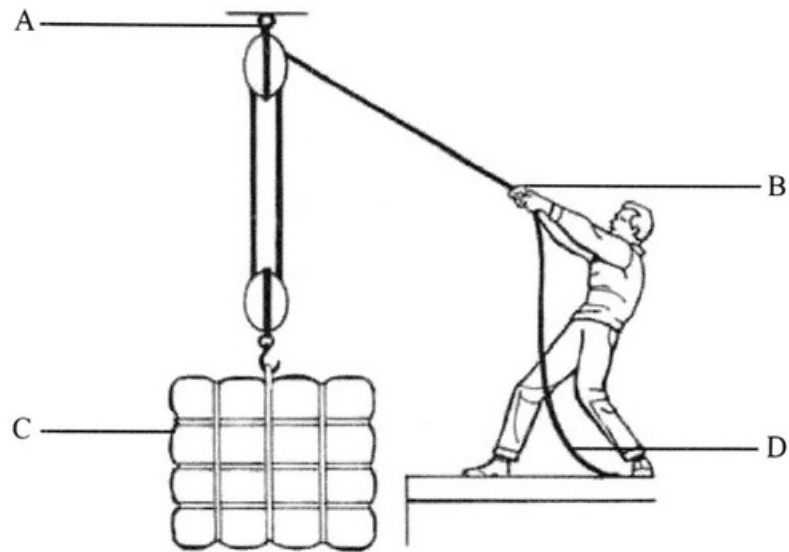


- A aluminum
- B copper
- C gold
- D iron

36. Which picture shows a chemical change taking place?

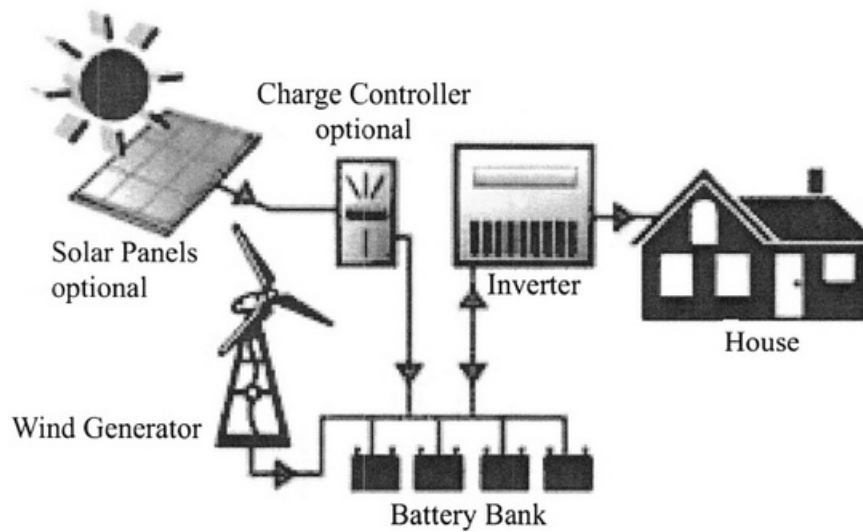


37. The diagram shows a construction worker using a simple machine to lift an object. Which labelled part is the fulcrum?

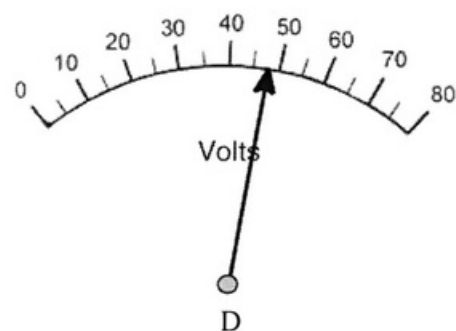
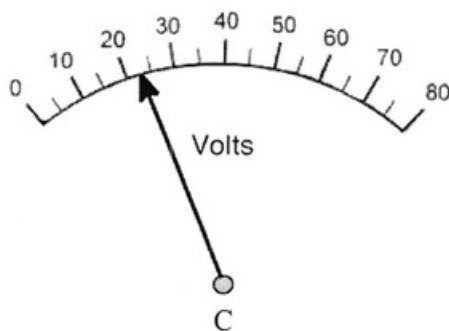
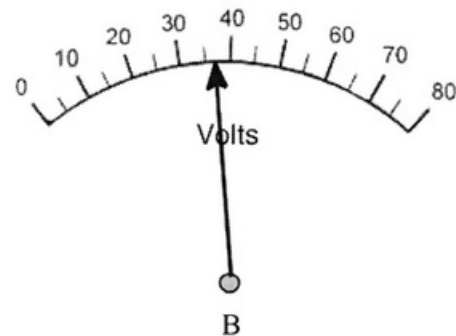
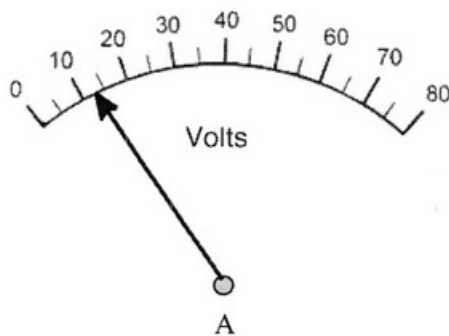


38. If the object is 340 N and is lifted 2 m. How much work does the construction worker do?
- A 28 J
 - B 328 J
 - C 352 J
 - D 4 080 J

The diagram shows the components for collecting and storing renewable sources of energy. **FOUR** batteries which make up a battery bank stores the energy. Each battery stores 12 volts.



39. Which component collects energy from the sun?
- A battery
 - B charge controller
 - C solar panel
 - D wind generator
40. Which voltmeter shows the reading for the voltage stored in the **FOUR** batteries?



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MINISTRY OF EDUCATION BAHAMAS JUNIOR CERTIFICATE EXAMINATION 2013

0047 GENERAL SCIENCE PAPER II (STRUCTURED QUESTIONS) (60 Marks)

Wednesday **29 May 2013** 2:15 P.M.–3:15 P.M.

INSTRUCTIONS TO CANDIDATES

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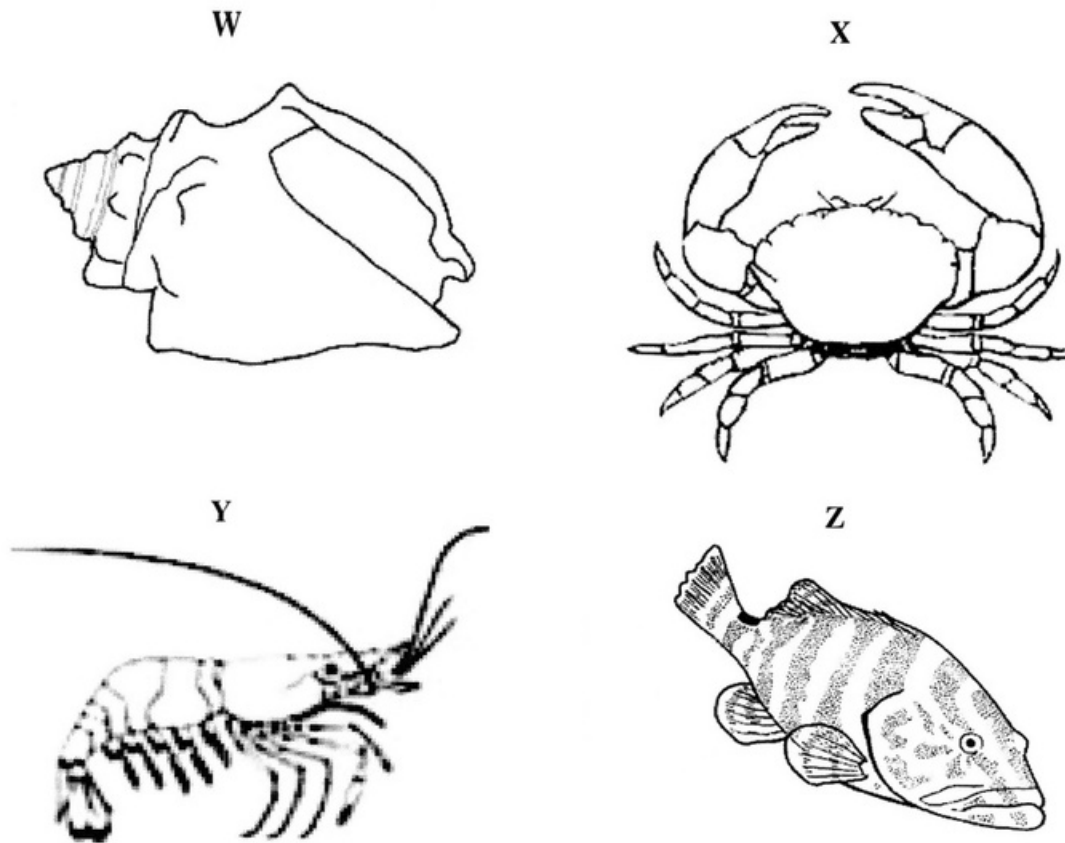
Write your school number, candidate number, surname and initials in the spaces provided at the top right hand side of this page.

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



This question paper consists of 10 printed pages.

1. The diagram shows **FOUR** organisms.



- (a) Complete the table by naming the organisms **W**, **X**, **Y** and **Z** and classifying each organism named into its **class**.

	organism	class
W		
X		
Y		
Z		

[4]

- (b) Write **ONE** external feature of organism **W** and organism **Z**.

(i) **W** _____

(ii) **Z** _____ [2]

- (c) (i) Name the phylum to which organism **Y** belongs.

_____ [1]

- (ii) Write a brief description of the outer body covering of organism **Y**.

_____ [1]

- (d) (i) State **ONE** difference between the **outer** body coverings of organism **W** and organism **Y**.

_____ [1]

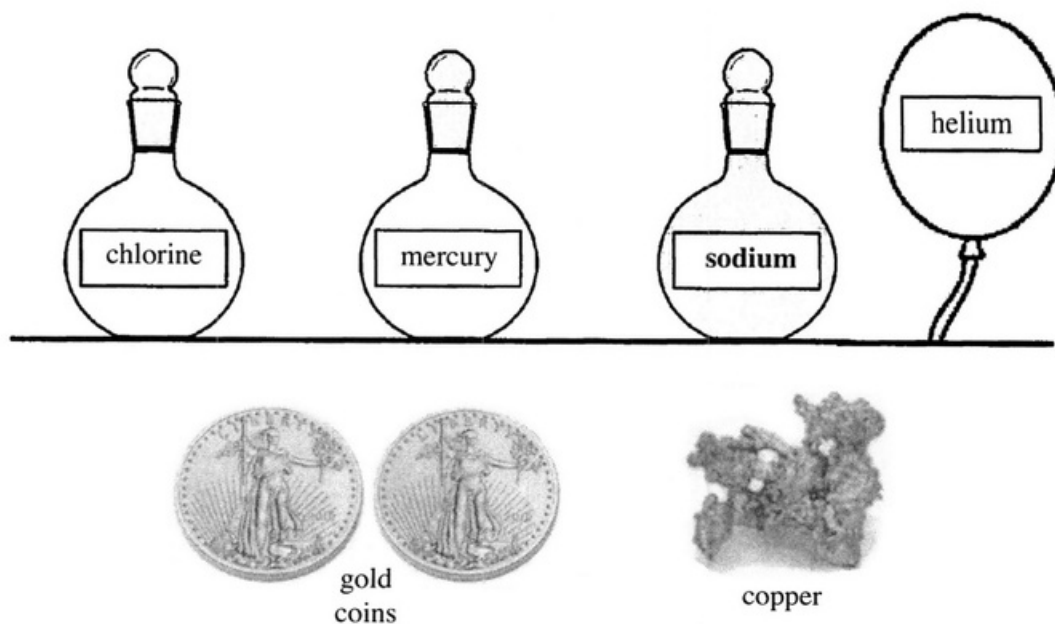
Organism **W** belongs to a class of organisms which are classified as either **bivalves** or **univalves**.

- (ii) Is organism **W** a **bivalve** or a **univalve**?

_____ [1]

TOTAL MARKS [10]

2. The diagrams show a sample of various elements set out in a laboratory.



- (a) Classify **ALL** the elements as either metals or non-metals to complete the table.

metals	non-metals

[3]

- (b) Write the **symbol** for the element that is

(i) part of an electric circuit; _____

(ii) the lightest gas; _____

(iii) used in a thermometer. _____

[3]

- (c) State **ONE** difference in property between copper and mercury.

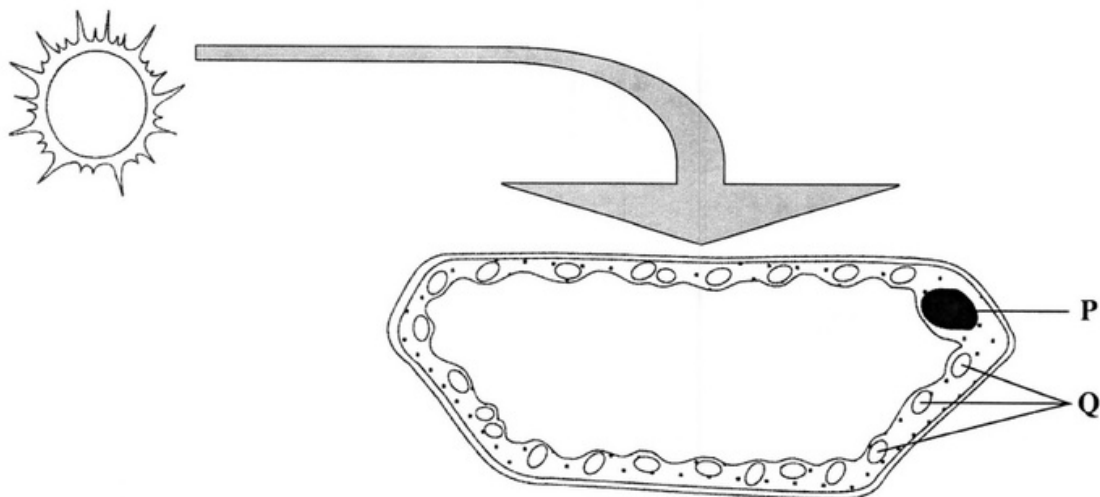
 _____ [1]

- (d) Use the symbols from the elements shown to write the equation for table salt.

_____ + _____ → _____ [3]

TOTAL MARKS [10]

3. The simplified diagram shows energy from sunlight being absorbed by the organelle in a cell.



- (a) Green plants absorb light energy to produce food.

- (i) Identify and name the structure in the cell which absorbs the energy from sunlight.

letter	name

[2]

- (ii) Give the name of the green pigment found in green plants.

_____ [1]

- (iii) Name the food-making process by green plants.

_____ [1]

- (iv) Write the name of the part of the plant where this process takes place.

_____ [1]

- (b) In the presence of sunlight, green plants also need a supply of raw materials for the food-making process.

- (i) Give the **names** and the **formulae** of **TWO** raw materials needed by a green plant for the food-making process.

Name

Formulae

1. _____

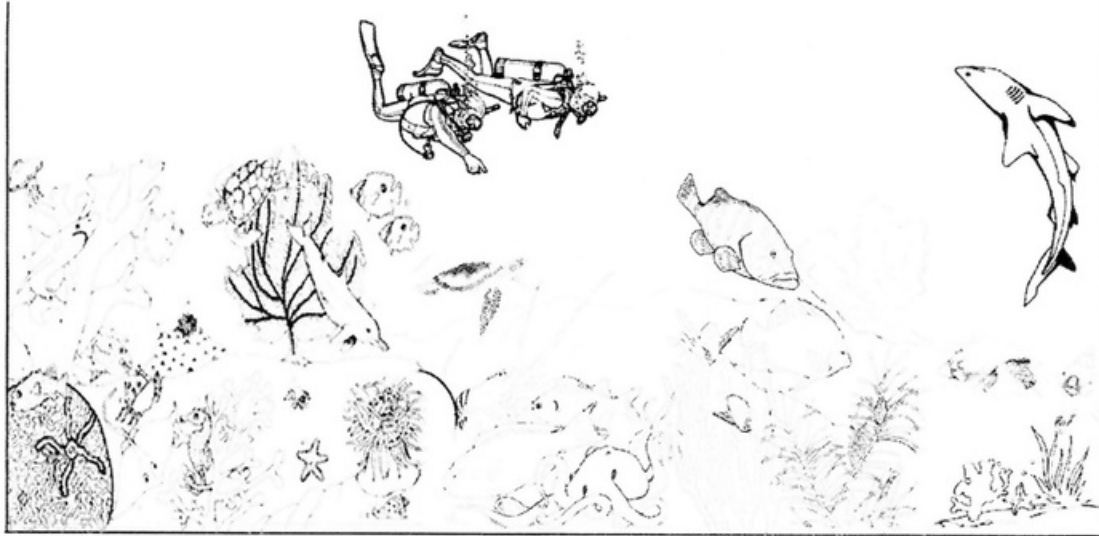
2. _____ [4]

- (ii) Name the useful gas which is given off as a by-product of the food-making process.

_____ [1]

TOTAL MARKS [10]

4. The picture represents a Coral Reef and the variety of organisms found there.



- (a) (i) Briefly explain how coral reef are formed.

 _____ [3]

- (ii) Use any **THREE** organisms from the diagram to complete the food chain.

seaweed → _____ → _____ → _____ [3]

Reef sharks are predators.

- (b) (i) Define the word **predator**.

_____ [1]

- (ii) Briefly explain what would happen to the reef fish population, if the population of reef sharks sharply increases.

 _____ [1]

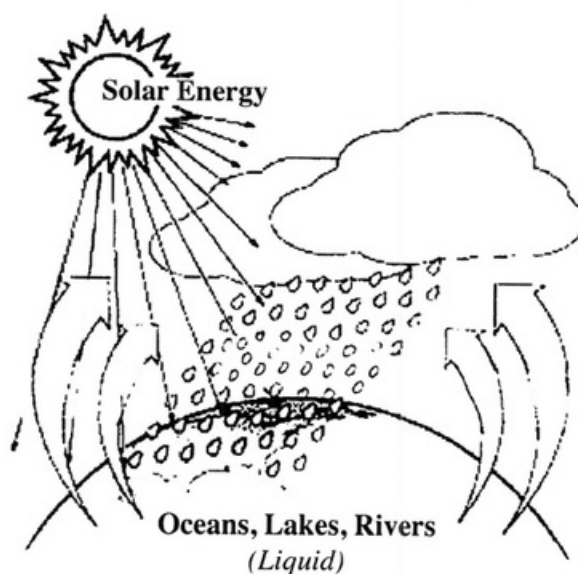
- (d) Give **TWO** factors which are likely to damage coral reefs in The Bahamas.

1. _____
 2. _____ [2]

TOTAL MARKS [10]

5. This question is about water and solutions.

Water is continually being recycled between the Earth and the atmosphere.



- (a) (i) The list shows the main stages in this recycling of water.

condensation

evaporation

form clouds

precipitation

Complete the table to place these processes into the correct sequence.

1	solar energy warms water from oceans, rivers and lakes
2	
3	((warm air with moisture rises))
4	
5	
6	
7	water runs off into oceans, rivers and lakes

[4]

- (ii) Give **ONE** example of precipitation.

[1]

During the summer we experience hot, humid weather conditions. Humidity can cause us to feel uncomfortable.

- (iii) Define **humidity**.

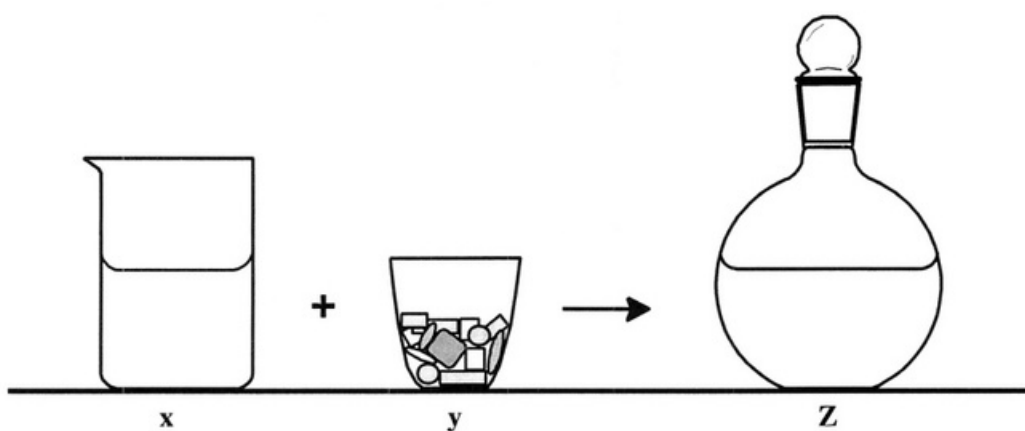
_____ [1]

- (iv) Name the method of purification used to make a city's water supply safe for consumer use.

_____ [1]

- (b) A student is given an assignment to investigate solutions.

The diagram shows the apparatus used for the investigation.

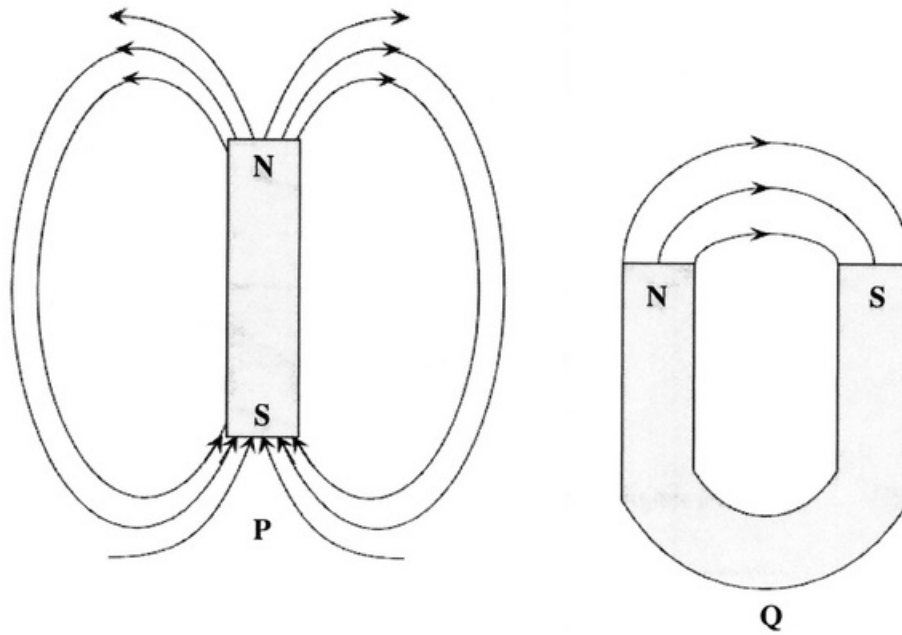


Suggest the materials that may be used to represent x and y and give the name of the solution Z which results.

x _____ + y _____ → Z _____ [3]

TOTAL MARKS [10]

6. The diagram shows the magnetic fields of two magnets **P** and **Q**.



- (a) Name the types of magnet shown.

(i) **P** _____ [1]

(ii) **Q** _____ [1]

- (b) (i) Name the poles on a magnet.

_____ and _____ [1]

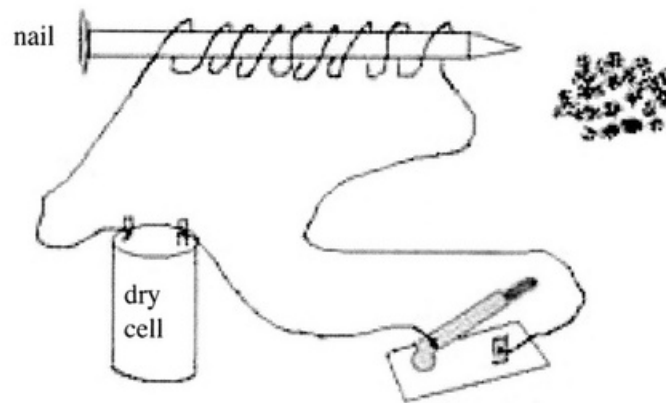
- (ii) The direction of the magnetic field of both magnets is from

_____ to _____. [1]

- (c) Give the name of the naturally occurring magnet.

_____ [1]

- (d) The diagram shows a simple electric circuit with an iron nail wrapped in coils of wire. When the circuit is closed a magnet is produced.



- (e) (i) Name the magnet that is produced by this circuit.
 _____ [1]
- (ii) Suggest **ONE** way to make this magnet stronger.
 _____ [1]
- (iii) Briefly describe how this magnet can be activated.

 _____ [2]
- (iv) Suggest **ONE** way to show that this magnet works.

 _____ [1]

TOTAL MARKS [10]

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