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TOTAL MARKS	

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**MINISTRY OF EDUCATION
BAHAMAS JUNIOR CERTIFICATE
EXAMINATION**

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

Wednesday **28 May 2014** 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**.

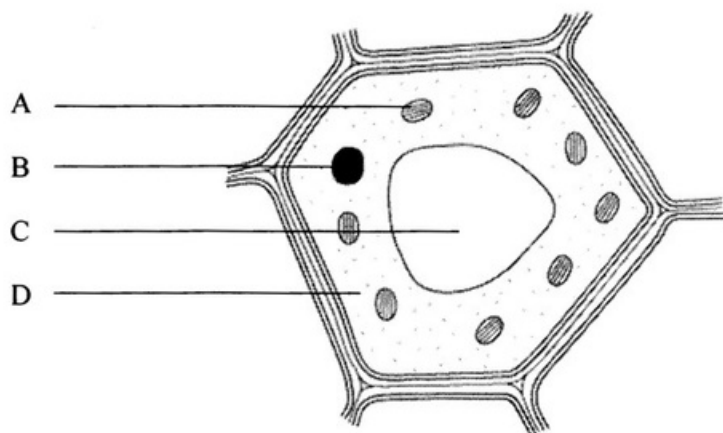
Answer **ALL** the questions in this booklet. Do any necessary rough work and calculations in your booklet.



This question paper consists of **12** printed pages.

1. The diagram shows a cell.

Which labelled structure is the vacuole?



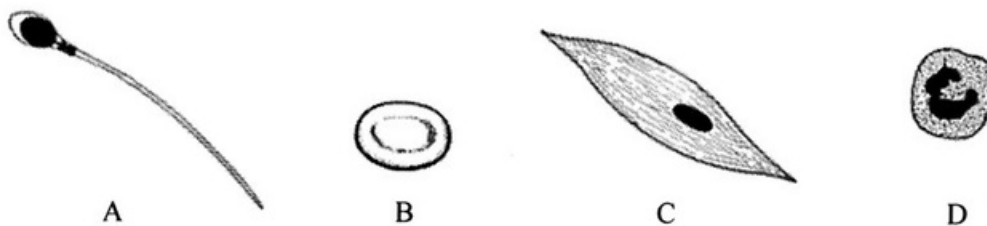
2. Which characteristic of living things obtains and uses oxygen to produce energy?

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

3. Which formulae show a molecule of water?

- A HO
- B H_2O
- C HO_2
- D H_2O_2

4. Which cell protects the human body from disease?

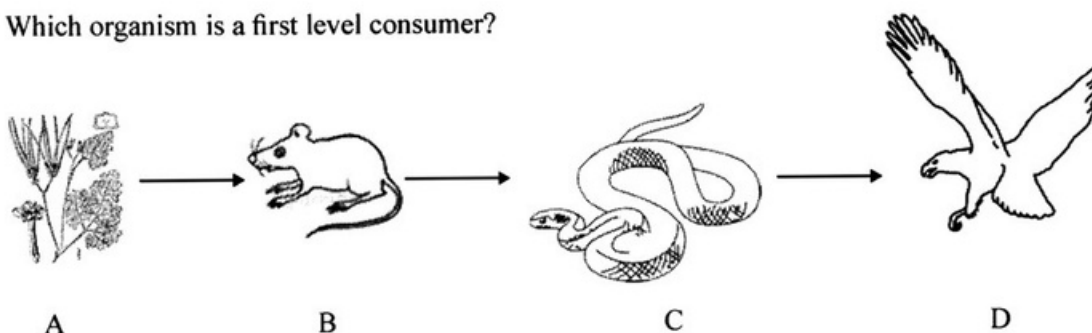


5. Which substance gives the plant its green colour?

A chlorophyll
 B iris
 C melanin
 D oxyhaemoglobin

6. The diagram shows a food chain.

Which organism is a first level consumer?



7. To which group does this animal belong?



A arthropoda
 B echinodermata
 C mollusca
 D reptilian

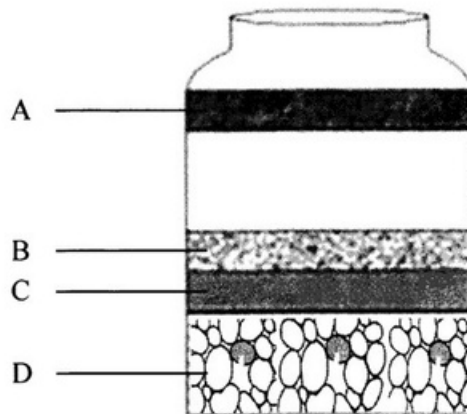
8. Which ecosystem is **NOT** a marine habitat?

A coral reefs
 B pine forests
 C mangrove swamps
 D rocky shores

9. Which science includes the study of the structure and properties of matter?

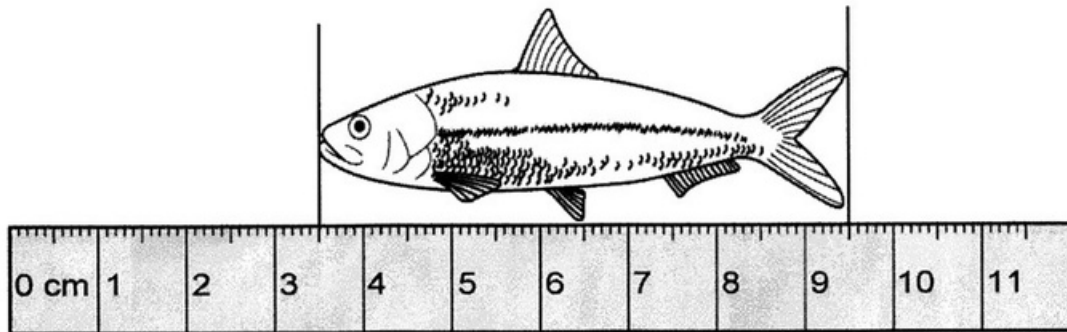
A Biology
 B Chemistry
 C Meteorology
 D Physics

10. Which component of this soil sample contains particles that weigh the **least**?



11. The diagram shows a ruler used to measure length.

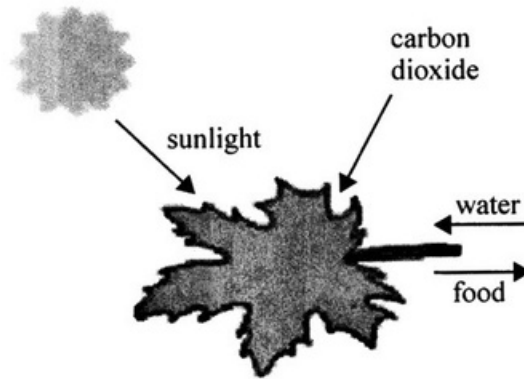
How long is the fish?



- A 3.5 cm
 B 7.0 cm
 C 6.0 cm
 D 9.5 cm
12. At which temperature does water freeze on the Celsius scale?

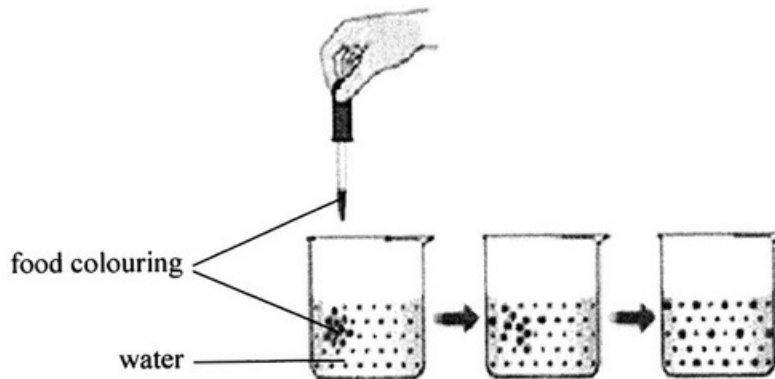
- A 0°
 B 32°
 C 100°
 D 212°

13. The diagram shows a process taking place in a green leaf.



What is the name of this process?

- A absorption
 - B germination
 - C photosynthesis
 - D respiration
14. Mr. White places several drops of food colouring into a beaker with water.
The results are shown in the diagram.



Which process is Mr. White demonstrating?

- A absorption
 - B diffusion
 - C melting
 - D mixing
15. Which substance is neutral?

	substance	pH
A	chalk	8
B	hair relaxer	14
C	orange juice	5
D	water	7

16. Which gas is used in a fire extinguisher?



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

17. What is the method of purification used to make the city's water supply safe for drinking?



- A boiling
- B chlorination
- C distillation
- D filtration

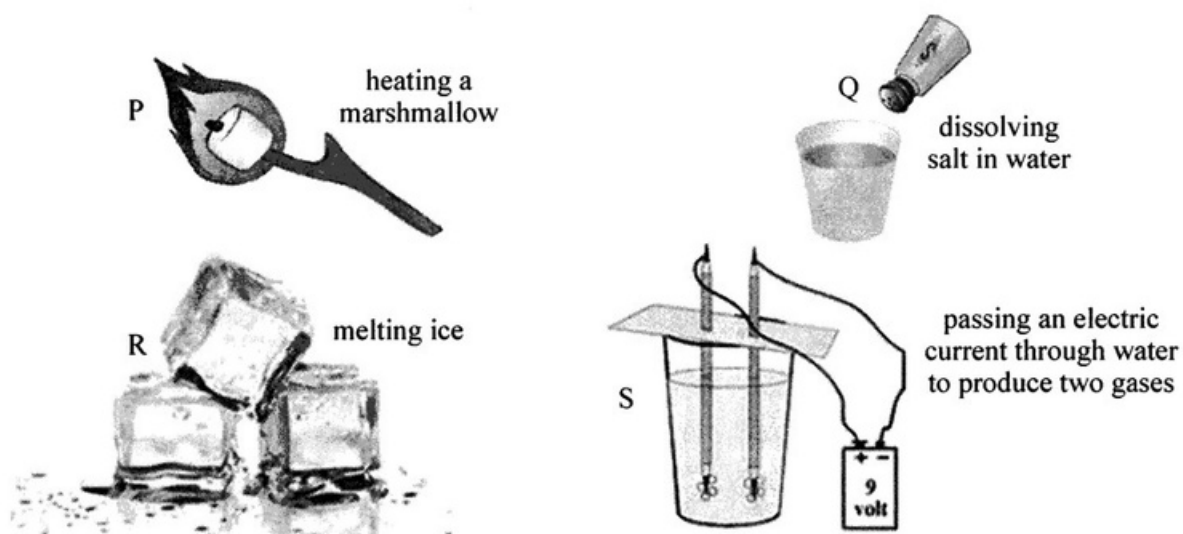
18. Which gas occupies about 20% of the air?

- A CO_2
- B H_2
- C N_2
- D O_2

19. Which property of air causes atmospheric pressure?

- A its compressibility
- B its weight
- C its invisibility
- D its mixture of gases

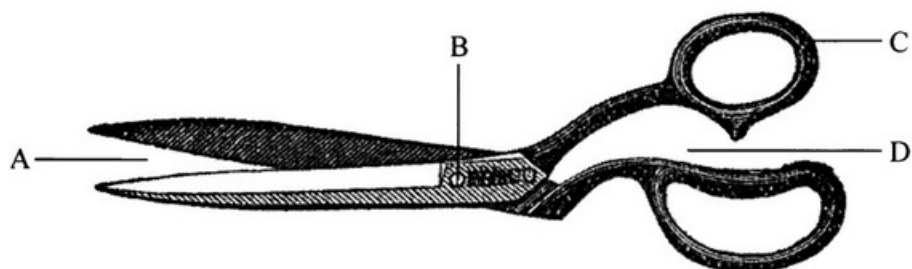
20. The pictures show four different reactions.



Which **two** reactions are physical reactions?

- A P, R
 - B Q, S
 - C R, Q
 - D S, P
21. The diagram shows a pair of scissors.

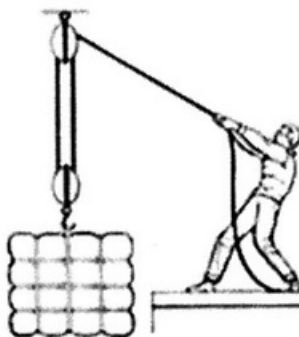
Where is the effort applied?



22. Which force causes an object to fall to the Earth?

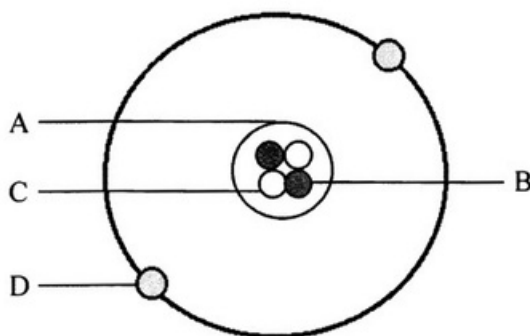
- A atmospheric pressure
- B friction
- C magnetic attraction
- D gravity

23. A construction worker uses a simple machine to lift a pallet 4 m. The pallet weighs 30 N.



How much work is done?

- A 7.5 Nm
 - B 26.0 Nm
 - C 34.0 Nm
 - D 120.0 Nm
24. What is the name of the simple machine used by the construction worker to lift the pallet?
- A block and tackle pulley system
 - B fixed pulley
 - C moveable pulley
 - D single pulley system
25. Which atomic particle has a negative charge?



26. What device protects appliances from an electrical overload or electrical surge?



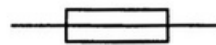
A



B

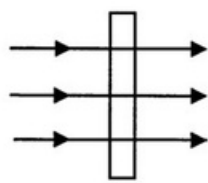


C

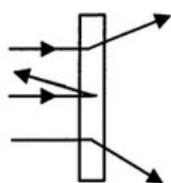


D

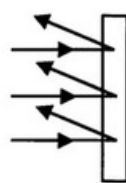
27. Which diagram shows what happens to light as it hits a **transparent** material?



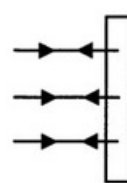
A



B



C



D

28. In which activity will **no** work be done?



A



B



C



D

29. Which form of energy is produced when you rub your hands together?

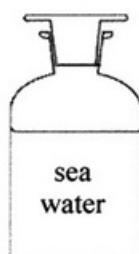


- A friction
- B heat
- C magnetic induction
- D static cling

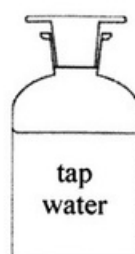
30. Which water sample is likely to have a high **salinity**?



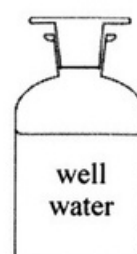
A



B



C

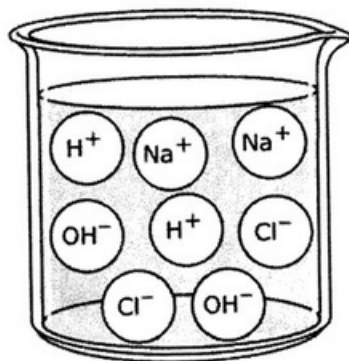


D

31. Which process is an example of oxidation?

- A boiling water
- B breathing air
- C melting ice
- D rusting iron

32. The diagram shows a saltwater solution.



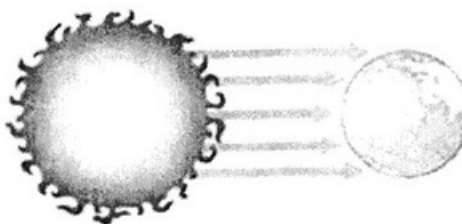
Which compound is the solute?

- A HCl
- B HOH
- C NaCl
- D NaOH

33. Which layer of the atmosphere contains charged particles?

- A ionosphere
- B mesosphere
- C stratosphere
- D troposphere

34. How does heat energy from the sun travel through space to the Earth?



- A conduction
- B convection
- C expansion
- D radiation

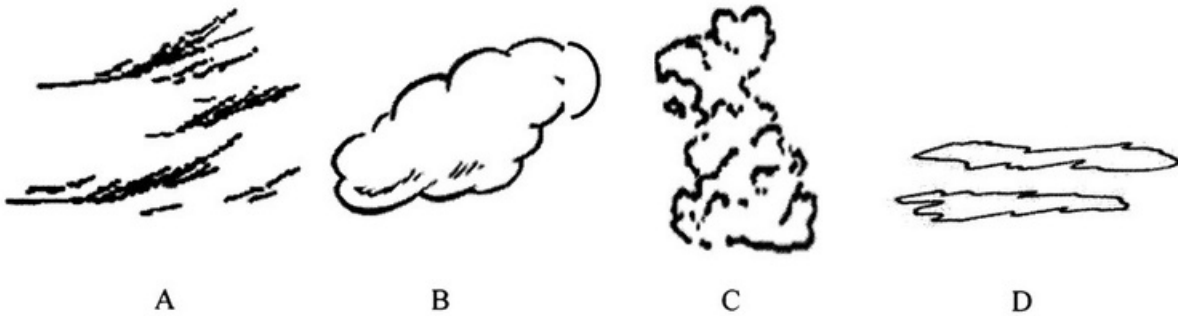
35. Which magnet is a temporary magnet?

- A bar magnet
- B electromagnet
- C lodestone
- D refrigerator magnet

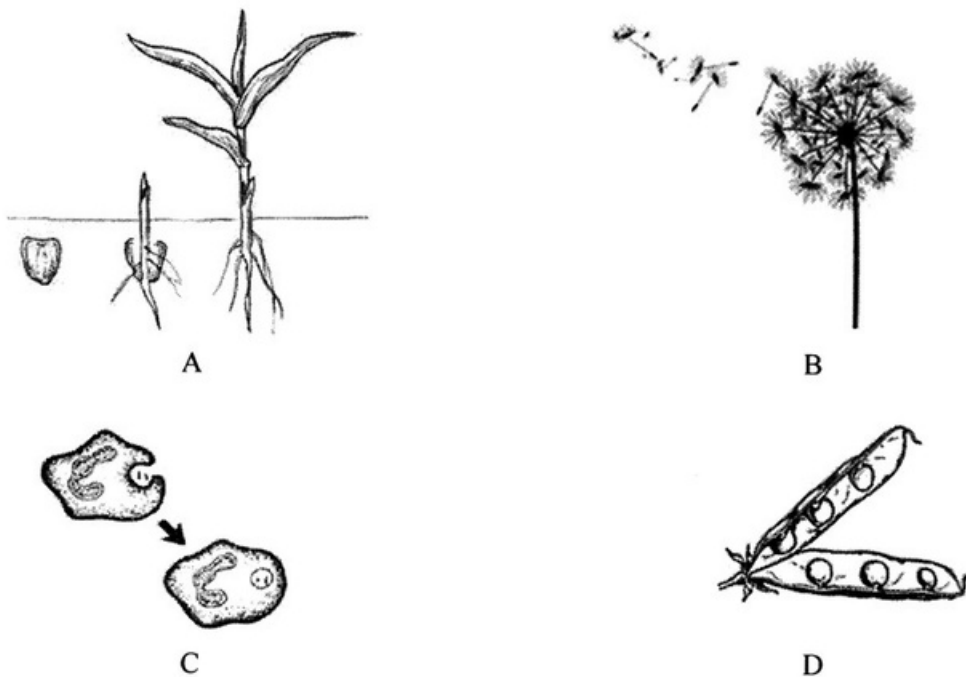
36. Which phrase does **not** describe a hurricane?

- A can be predicted and tracked by meteorologists
- B forms over water
- C is a funnel-shaped cloud
- D may cause storm surges, heavy rains and strong winds

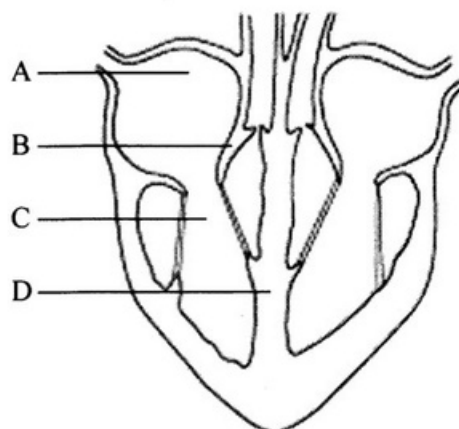
37. Which drawing represents cirrus cloud?



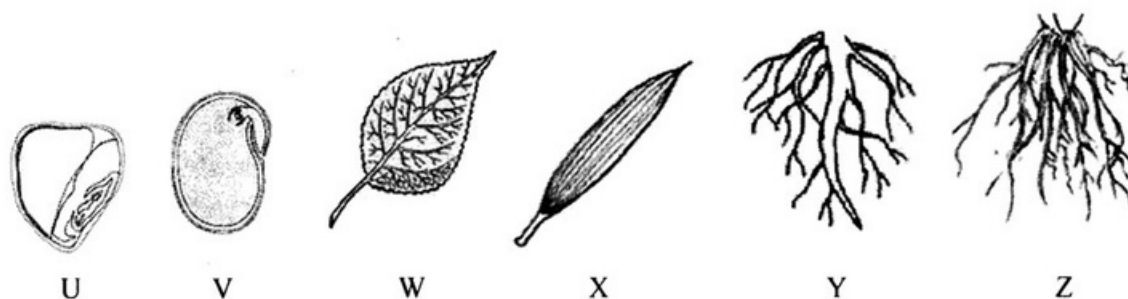
38. Which diagram shows the process of germination?



39. Which structure separates the oxygenated blood from the deoxygenated blood in the heart?



40. The diagrams show the main structures of monocotyledonous and dicotyledonous plants.



Which row in the table gives the correct structures for each plant?

	monocotyledon	dicotyledon
A	U W Y	V X Z
B	U X Z	V W Y
C	V W Y	U X Z
D	V X Z	U W Y

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QUESTION	MARK
1	
2	
3	
4	
5	
6	
TOTAL	

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MINISTRY OF EDUCATION BAHAMAS JUNIOR CERTIFICATE EXAMINATION

0047 GENERAL SCIENCE PAPER 2 STRUCTURED QUESTIONS (60 Marks)

Wednesday **28 May 2014** 2:15 P.M.–3:15 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.

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



This question paper consists of **10** printed pages.

1. The diagram shows students at work in a science laboratory.



Students use specific skills and apparatus to investigate and experiment. There are also specific safety procedures that all students should follow while working in the science laboratory.

- (a) (i) State **two** safe procedures and **two** unsafe procedures shown by students A, B, C and D in the diagram above.

safe procedures

1. _____
2. _____ [2]

unsafe procedures

1. _____
2. _____ [2]

- (ii) Name **THREE** pieces of apparatus being used by these students.

1. _____
2. _____
3. _____ [3]

Identify the safety symbol shown in the diagram. Explain what it means.

- (b) (i) Identify the safety symbol shown in the diagram and explain what it means.

safety symbol _____

meaning _____

_____ [1]

- (ii) Predict what could happen to the student wearing her hair out on her shoulders while experimenting in the laboratory.

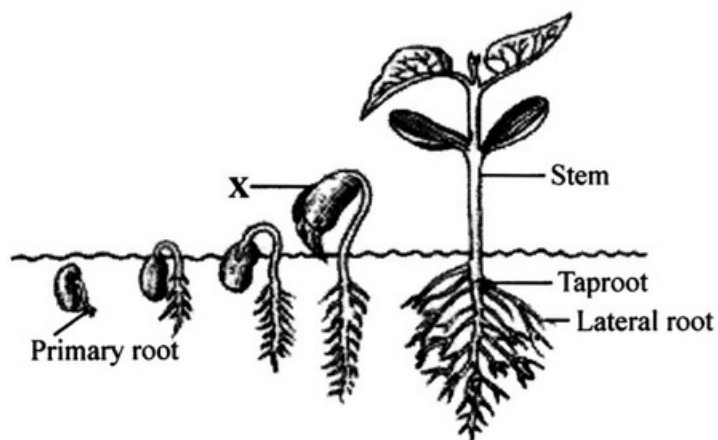
_____ [1]

- (c) Identify the skill that a scientist uses to group organisms or substances based on their similarities.

_____ [1]

Total marks [10]

2. The diagram shows the stages in the development of a young plant.



- (a) (i) Give the name and function of structure X.
 name _____ [1]
 function _____ [1]
- (ii) Name the group of flowering plants to which this plant belongs.
 _____ [1]
- (b) (i) The label shows the symbols for three elements (chemicals) and their results on the main structures of the plant.

label with symbols and results			name of elements
Green Follage	N		_____
Strong Roots	P		_____
Healthy Growth	K		_____ [3]

- (ii) Farmer Brown had a poor crop harvest last season. This season he intends to use a mixture of the substances shown in (b)(i) in his farm soil.

Suggest how **green foliage** and **strong roots** would result in healthy plants for a bountiful harvest.

green foliage _____ [1]

strong roots _____ [1]

- (iii) Name an organism that aerates (puts air into) the soil.

_____ [1]

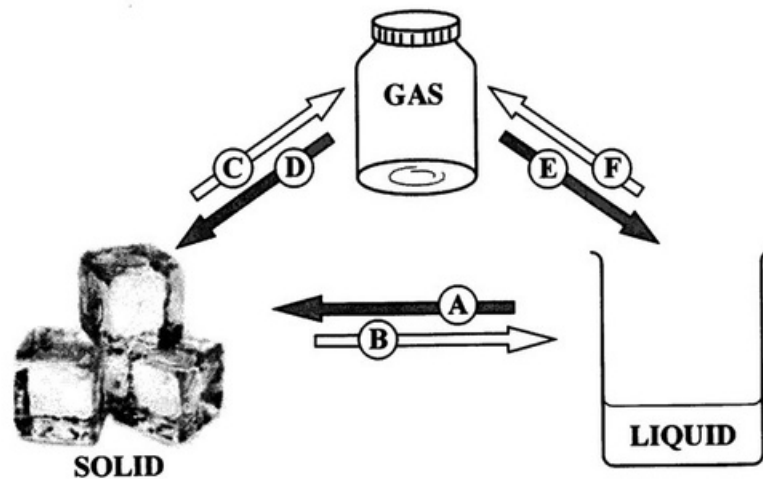
- (iv) Tamina adds water to a jar containing a sample of garden soil. She observes tiny bubbles rising as the soil absorbs the water.

Suggest what these bubbles indicate.

_____ [1]

Total marks [10]

3. Matter can change from one state to another.



- (a) (i) Using words from the list, name the processes happening at the letters A, B, E and F in the diagram.

boiling

condensation

evaporation

freezing

melting

precipitation

A _____

B _____

E _____

F _____

[4]

- (ii) Name the form of energy absorbed when matter changes state.

_____ [1]

- (iii) Identify **two** processes necessary for the formation of clouds.

1. _____

2. _____

[2]

- (iv) Explain what happens to the **speed** of the molecules and the **spacing** between the molecules when a liquid changes to a gas.

speed _____ [1]

spacing _____ [1]

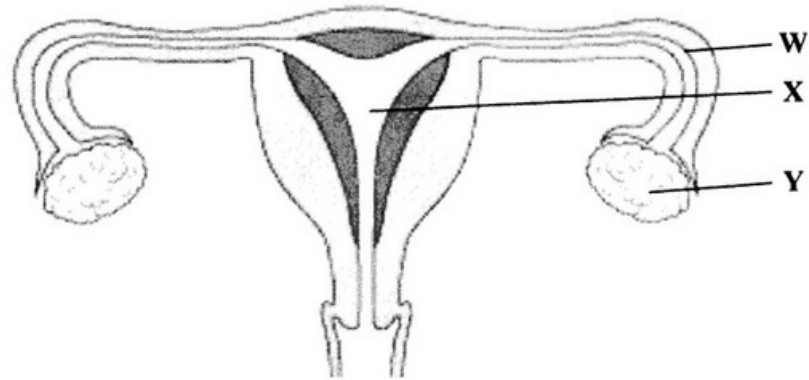
- (b) During one of the stages in the water cycle, water falls as rain, snow, sleet or hail.

State the name of this stage in the water cycle.

_____ [1]

Total marks [10]

4. The diagram shows a human body system.



- (a) (i) Give the name of the system shown.

_____ [1]

- (ii) Write the name and give a function of W, X and Y. [6]

	name	function
W		
X		
Y		

- (b) A human foetus takes a period of time to develop. This period of development begins with fertilisation and ends at birth.

- (i) Write the **proper** name for this period of foetal development.

_____ [1]

- (ii) State the normal length of this period.

_____ [1]

- (iii) Identify **two** types of fertilisation in living organisms.

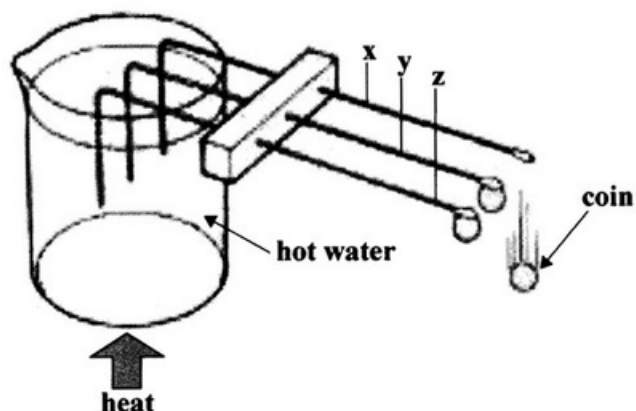
1. _____

2. _____

[1]

Total marks [10]

5. The diagram shows the apparatus used in a science experiment to investigate heat.

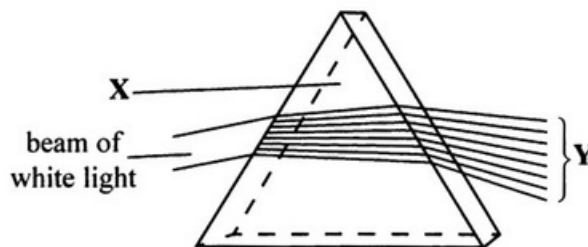


- (a) Name the method of heat transfer
- (i) through the water in the beaker;
_____ [1]
- (ii) from the hot water through the rods x, y and z.
_____ [1]
- (b) (i) Draw a line with an arrow along **rod z** to show the direction of the movement of heat. [1]
- (ii) Identify the labelled rod which is the best conductor of heat and give a reason for your choice.
- rod _____ [1]
- reason _____ [1]
- (c) State the kind of material from which these rods are made.
_____ [1]
- (d) Suggest the name of a substance which is likely to be used to attach the coins to the rods.
_____ [1]
- (e) The length of each rod is 10 cm. The coin attached to rod x falls off 5 s after the rods are placed in the hot water. Calculate the rate of heat travel.

[3]

Total marks [10]

6. The diagram shows a beam of white light striking a triangular-shaped piece of glass.



- (a) (i) Name the triangular-shaped piece of glass, labelled X.

_____ [1]

Light rays can be absorbed, reflected or refracted when they strike different kinds of materials.

- (ii) Briefly explain what happens to the beam of light in the diagram.

_____ [1]

- (iii) State the name given to Y.

_____ [1]

- (b) Use the functions to compare basic structures in the human eye with the basic parts of a simple camera. [4]

function	human eye	simple camera
allows light to enter		aperture
creates images	retina	
focuses images		

Light and **sound** energy travel as waves. However, light waves and sound waves are very different forms of wave motion.

- (c) Identify which waves of **light** or **sound** energy can

- (i) travel in a vacuum;

_____ [1]

- (ii) form echoes when reflected from a hard surface;

_____ [1]

- (iii) travel fastest in solids.

_____ [1]

Total marks [10]