



## PRIMARY 5 MID-YEAR EXAMINATION 2015

Name : \_\_\_\_\_ ( ) Date: 15 May 2015

Class : Primary 5 ( ) Duration: 1 hour 45 minutes

Parent's Signature : \_\_\_\_\_ Marks: \_\_\_\_\_ / **60**

## **SCIENCE BOOKLET A**

### INSTRUCTIONS TO CANDIDATES

Write your name, register number and class.

Do not turn over this page until you are told to do so.

Follow all instructions carefully.

Answer all questions.

**Section A (30 x 2 marks)**

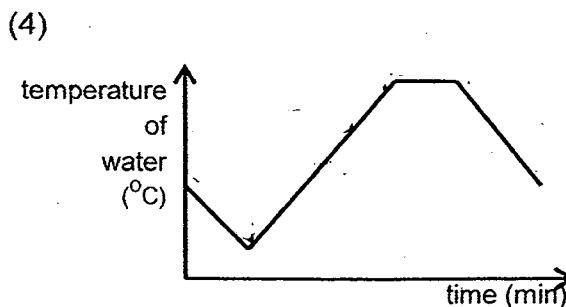
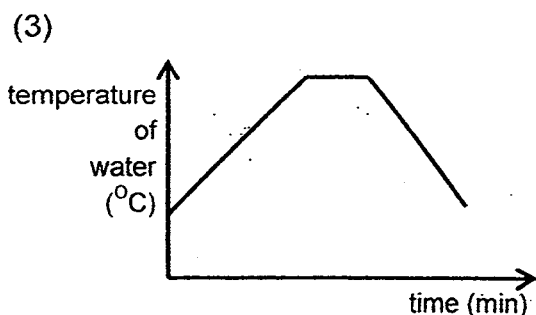
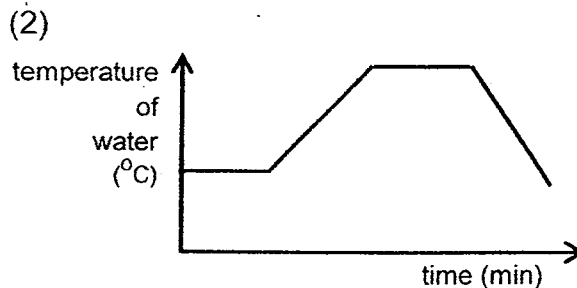
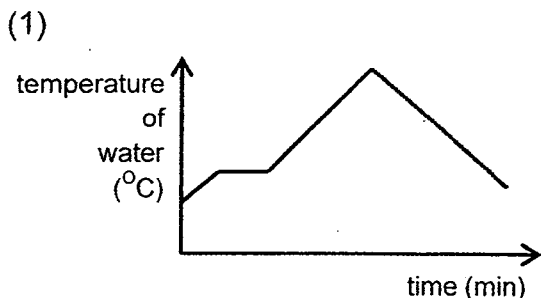
For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet (OAS) provided.

1. The diagram below describes a change in the state of water.

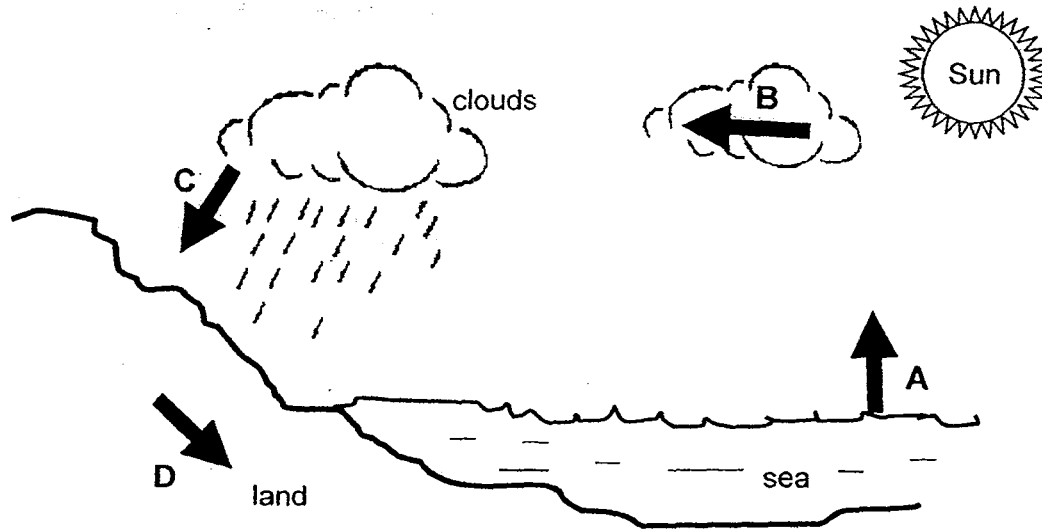


What is Process A?

- (1) Boiling
  - (2) Melting
  - (3) Evaporation
  - (4) Condensation
2. At the start of his experiment, Simon put some ice cubes into a beaker of water. After the ice cubes had melted, he heated the water until it reached boiling point. He continued to heat the water for a few more minutes before turning off the flame at the end of his experiment. Which of the following line graphs shows the results of his experiment?



3. Study the diagram of the water cycle below. The letters, A, B, C and D, represent the stages of the water cycle.



Which of the following stages, A, B, C or D, will occur faster when the temperature of the surrounding air increases?

- (1) A
  - (2) B
  - (3) C
  - (4) D
4. Which of the following actions is an example of reusing water?
- (1) Purifying river water for drinking.
  - (2) Using water from washing rice to water plants.
  - (3) Using a mug instead of running water when brushing teeth.
  - (4) Washing vegetables in a basin of water instead of under a running tap.

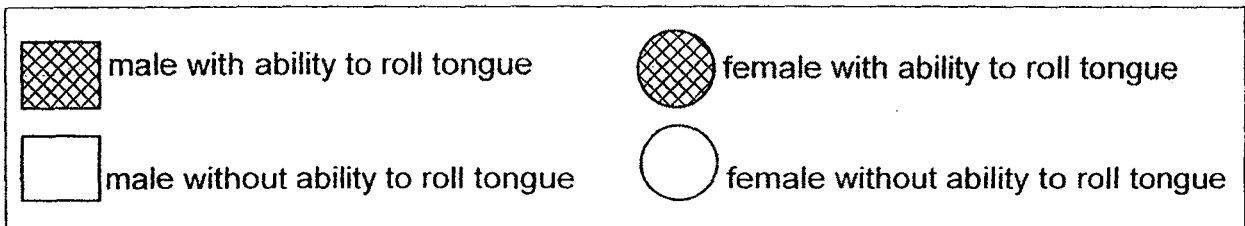
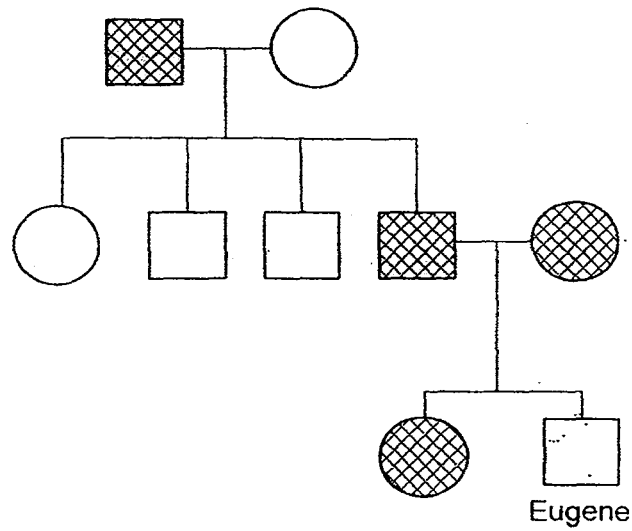
5. Max wanted to investigate if the rate of evaporation of water was affected by the exposed surface area of water. He used four different containers, A, B, C and D, made of the same material. The table below shows the different conditions at the start of the experiment.

Container	Room temperature ( $^{\circ}\text{C}$ )	Volume of water ( $\text{cm}^3$ )	Exposed surface area of water ( $\text{cm}^2$ )
A	25	400	50
B	25	500	120
C	25	500	50
D	31	500	50

Which of the following two containers should Max compare?

- (1) A and D
- (2) B and C
- (3) C and D
- (4) D and B

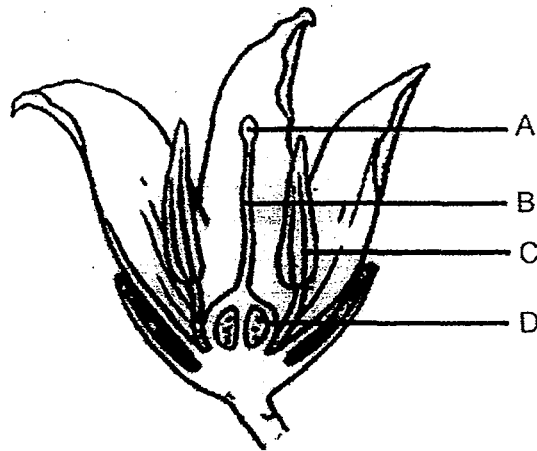
6. Study the family tree shown below.



Based on the information above, which of the following statements is correct?

- (1) Eugene's aunt has the ability to roll her tongue
- (2) Eugene inherited the ability to roll his tongue from his mother
- (3) Eugene has 2 grandparents who have the ability to roll their tongues.
- (4) Eugene's sister inherited the ability to roll her tongue from her parents

7. The diagram below shows a flower of a plant. A, B, C and D are parts of the flower.

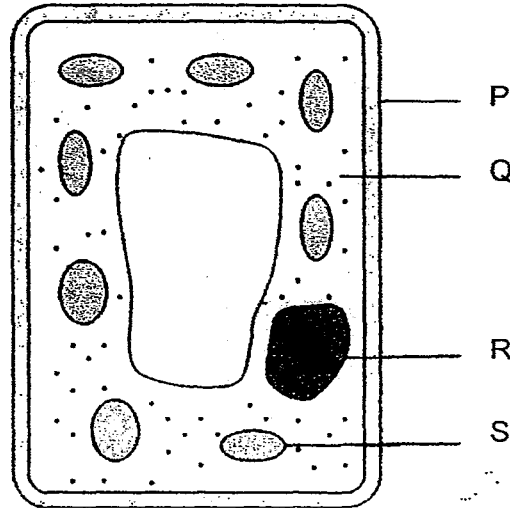


In which parts of the flower are pollen grains produced and ovules found?

	<b>Pollen Grains produced</b>	<b>Ovules found</b>
(1)	A	B
(2)	A	D
(3)	C	B
(4)	C	D

8. Which of the following statements about the female reproductive cell in the human body is correct?
- (1) It has no nucleus.
  - (2) It is produced in the fallopian tube
  - (3) It is the largest cell in the human body.
  - (4) It becomes a foetus immediately after fertilisation.

9. The diagram below shows a plant cell with the parts labelled P, Q, R and S.



Which two parts of the plant cell, P,Q, R and S, are also found in animal cells?

- (1) P and Q
  - (2) P and S
  - (3) Q and R
  - (4) R and S
10. Which of the following statements about cells is correct?
- (1) Cells can be seen with the naked eye.
  - (2) Cells have fixed shapes and structures.
  - (3) Cells are unable to reproduce on their own.
  - (4) Cells are able to react to changes in the environment.

11. Devi cut herself while she was helping her mother with some chores. A few days later, the wound had healed. Explain how the wound can heal by itself?

- (1) Cells have undergone cell division to replace the damaged cells.
- (2) Cells from other parts of the body moved to cover up the wound.
- (3) Cells combined to form bigger cells to replace the damaged cells.
- (4) Cells around the wound have grown bigger to cover up the wound.

12 The diagram below shows a seedling.



What are the conditions necessary for the seed to reach this stage?

- (1) Water and light only.
- (2) Oxygen and warmth only.
- (3) Water, air and warmth only.
- (4) Water, light and carbon dioxide only.



13. Which of the following statements correctly states the similarities between ferns and mosses?

- (1) They have small flowers.
- (2) They reproduce from spores.
- (3) They can be found only in water.
- (4) They are unable to produce their own food.

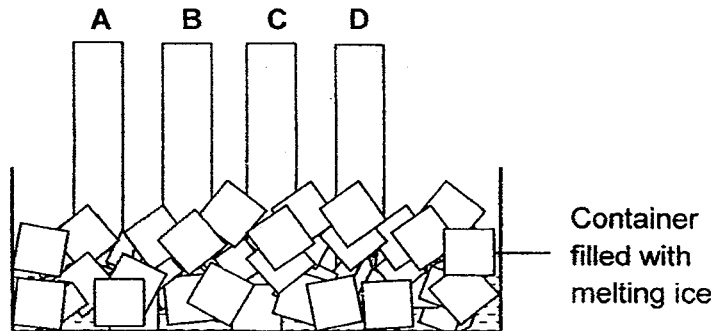
14. Three pupils classified some materials in different ways. Their classification tables are shown below.

<b>Mary</b>		<b>Veronica</b>		<b>Sally</b>	
<b>Group A</b>	<b>Group B</b>	<b>Group A</b>	<b>Group B</b>	<b>Group A</b>	<b>Group B</b>
fabric	iron	fabric	iron	rubber	iron
glass	steel	glass	steel	fabric	plastic
plastic		plastic	aluminium		steel
rubber		rubber			glass
aluminium					aluminium

Who classified the materials with the help of a magnet?

- (1) Mary only
- (2) Veronica only
- (3) Mary and Veronica only
- (4) Mary, Veronica and Sally

15. Mabel carried out an experiment at room temperature with four rods, A, B, C and D, each made of a different material. One end of each rod was put into a container filled with melting ice as shown below



After 15 minutes, the temperature at the end of each rod was taken and the results were as shown in the table below.

Rod	Temperature ( $^{\circ}\text{C}$ )
A	25
B	20
C	15
D	10

Which rod is the best conductor of heat?

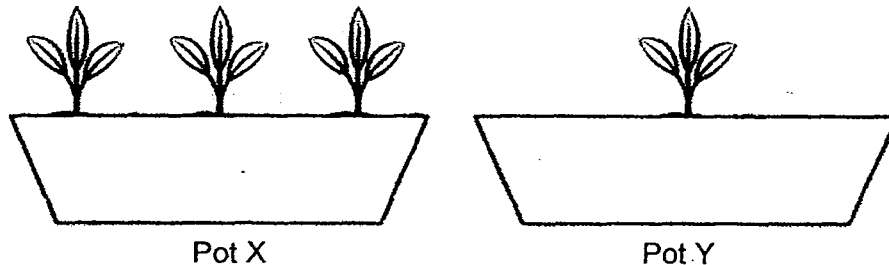
- (1) Rod A
- (2) Rod B
- (3) Rod C
- (4) Rod D

16. The table below shows the melting points and boiling points of three substances, X, Y and Z.

Substance	Melting point (°C)	Boiling point (°C)
X	27	66
Y	41	83
Z	58	95

At which of the following temperatures will the three substances, X, Y and Z, be in the same state of matter?

- (1) 30°C
  - (2) 50°C
  - (3) 60°C
  - (4) 80°C
17. Stacy wanted to find out if overcrowding would affect the growth of plants. She grew some plants in two identical pots, X and Y. She placed these pots under sunlight and watered them every day.

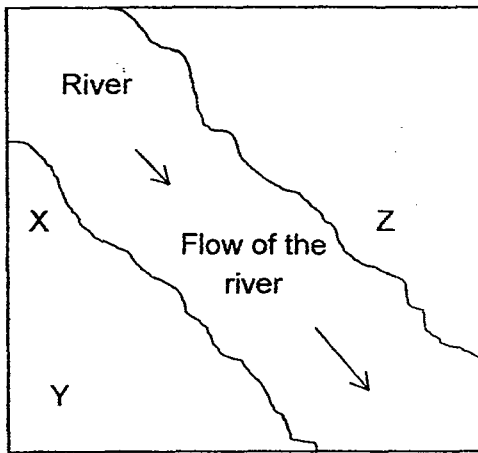


Which variables should she keep the same?

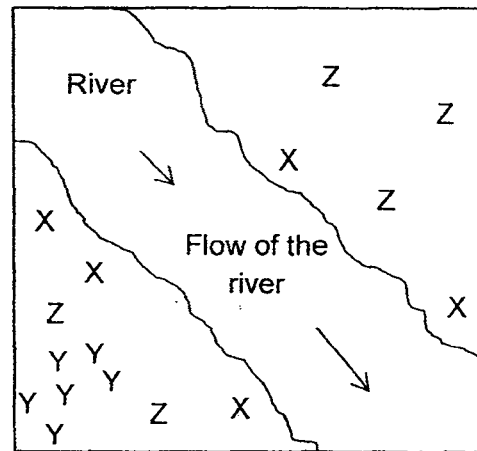
- A: Type of water used
- B: Amount of water given
- C: Type of plants used
- D: Location of pots

- (1) A and C only
- (2) B and D only
- (3) B, C and D only
- (4) A, B, C and D

18. Three plants, X, Y and Z, were planted on a piece of land as shown in Picture 1 below. Picture 2 shows the same piece of land a few years later.



Picture 1

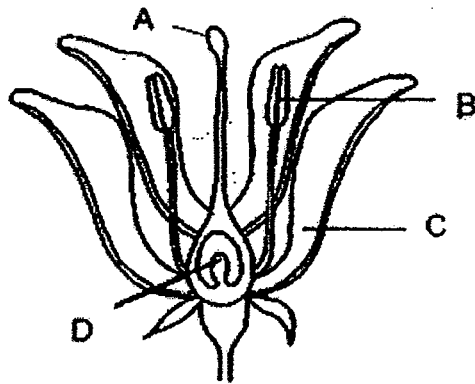


Picture 2

How are the fruits of the plants, X, Y and Z, dispersed?

	X	Y	Z
(1)	Water	Splitting action	Wind
(2)	Water	Wind	Splitting action
(3)	Wind	Water	Splitting Action
(4)	Wind	Splitting Action	Water

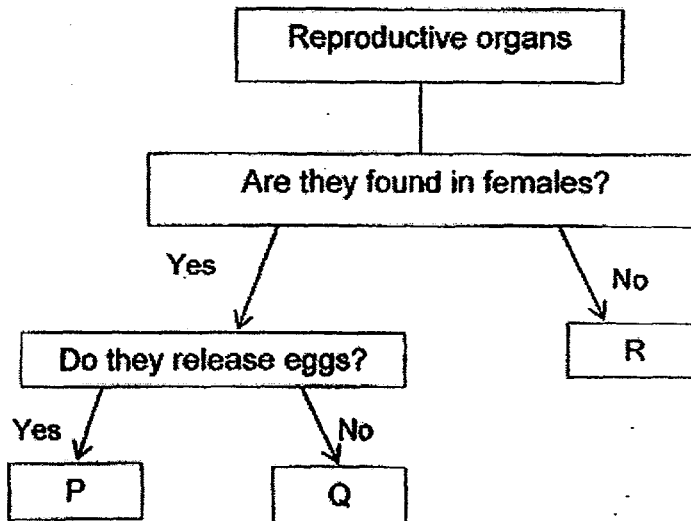
19. A, B, C and D are parts of flower X. Su Shan removed two of these parts of flower X. She then transferred some pollen from another flower of the same plant to the remaining parts of flower X. After some time, flower X formed a fruit.



Flower X

- Which two parts of flower X had been removed?
- (1) A and C only
  - (2) A and D only
  - (3) B and C only
  - (4) B and D only
20. Matthew made some comments about his two friends, Colin and Caleb, who are identical twins. Which of the following comments he made is definitely true?
- (1) Both of them have unique thumbprints.
  - (2) Both of them have the same height and weight.
  - (3) They inherited identical football skills from their father.
  - (4) They inherited the ability to speak three languages from their mother.

21. Identify the organs, P, Q and R, of the human reproductive system in the flowchart below.



	P	Q	R
(1)	Testis	Ovule	Ovary
(2)	Testis	Ovary	Womb
(3)	Ovary	Testis	Womb
(4)	Ovary	Womb	Testis

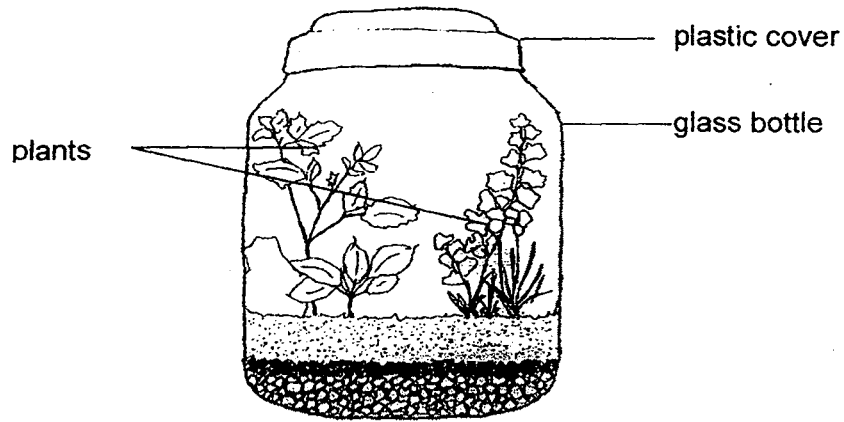
22. The table below provides some information on three cells, X, Y and Z. A tick (✓) indicates the presence of a part of the cells.

Cell	Part of cell		
	nucleus	chloroplast	cell wall
X	✓		✓
Y	✓	✓	✓
Z	✓		

Where are cells, X, Y and Z, found?

	X	Y	Z
(1)	cheek	leaf	root
(2)	leaf	root	cheek
(3)	root	cheek	leaf
(4)	root	leaf	cheek

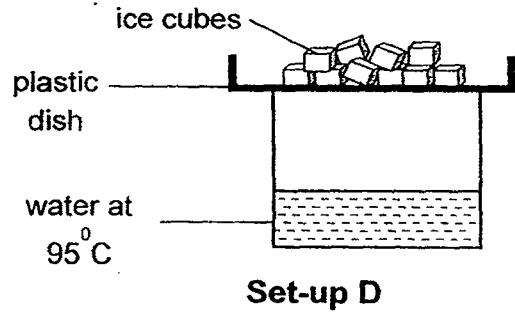
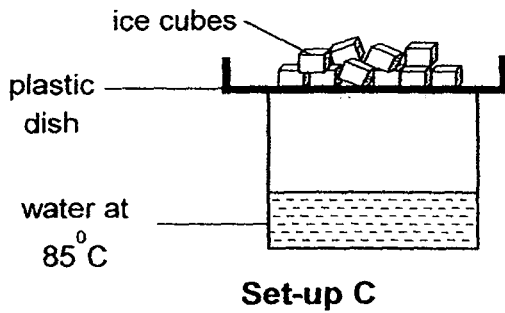
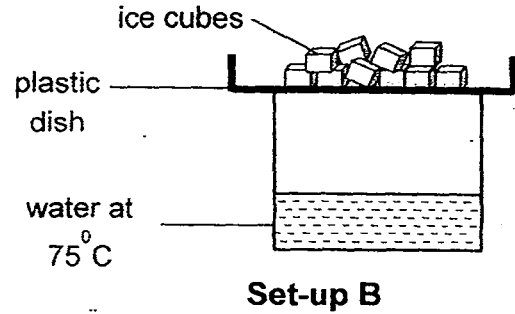
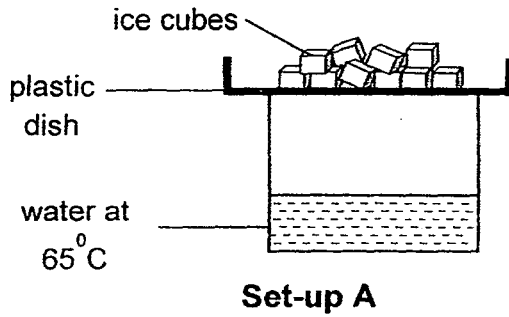
23. Some plants were planted in a glass bottle, as shown below. The glass bottle was then left in a sunny place. After some time, tiny water droplets could be seen on the inner wall of the glass bottle.



Which processes caused the water droplets to form on the inner wall of the glass bottle?

- (1) Breathing and evaporation
- (2) Breathing and photosynthesis
- (3) Evaporation and condensation
- (4) Photosynthesis and condensation

24. Elena prepared four set-ups as shown below.

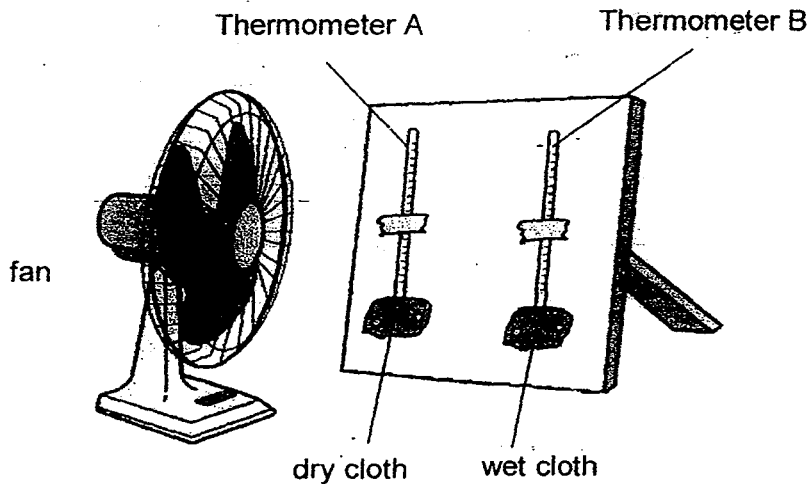


Which of the set-ups would have the first water droplet to drip off the plastic dish?

- (1) Set-up A
- (2) Set-up B
- (3) Set-up C
- (4) Set-up D



25. Susan set up an experiment as shown below:



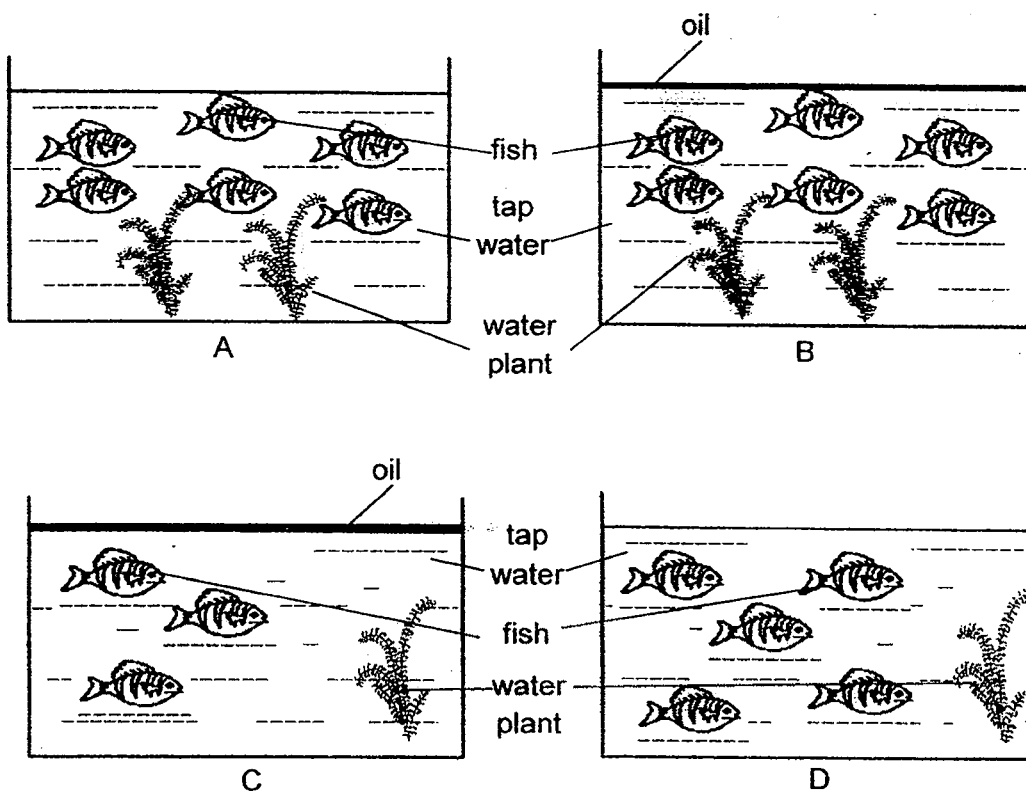
She switched on the fan and recorded the temperature at various time intervals. Her results are as shown below:

Time (minute)	Temperature readings of Thermometer A ( $^{\circ}\text{C}$ )	Temperature readings of Thermometer B ( $^{\circ}\text{C}$ )
0	30	30
3	30	28
6	30	27

Why was there a drop in the temperature readings of Thermometer B?

- (1) Heat from the surroundings was conducted to Thermometer B.
- (2) Thermometer B lost heat when water evaporated from the wet cloth.
- (3) The wet cloth on Thermometer B acted as a poor conductor of heat.
- (4) Thermometer B lost heat when water vapour condensed on the wet cloth.

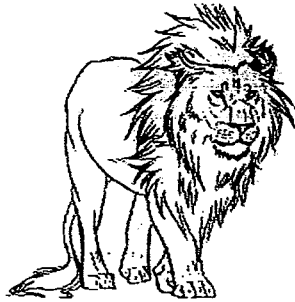
26. Mabel sets up four tanks, A, B, C and D, as shown below.



Which two tanks should she use to study the effect of water pollution on living things?

- (1) A and B only
- (2) A and D only
- (3) B and C only
- (4) C and D only

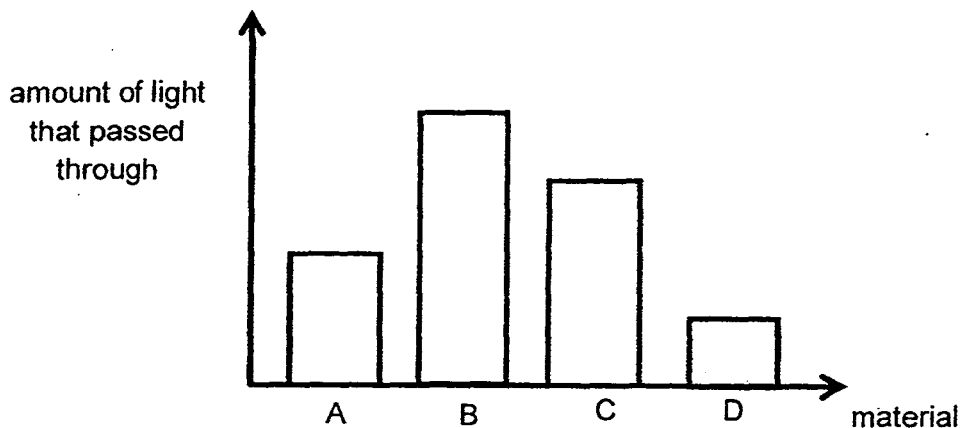
27. The diagram below shows a lion.



Which of the following statements is true?

- (1) The lion is made up of billions of cells of the ~~same~~ <sup>different</sup> type.
- (2) The cells in the lion are of the same size and shape.
- (3) Each cell has a cell wall which gives the lion its shape.
- (4) The cells contain genetic information about the lion's parents.

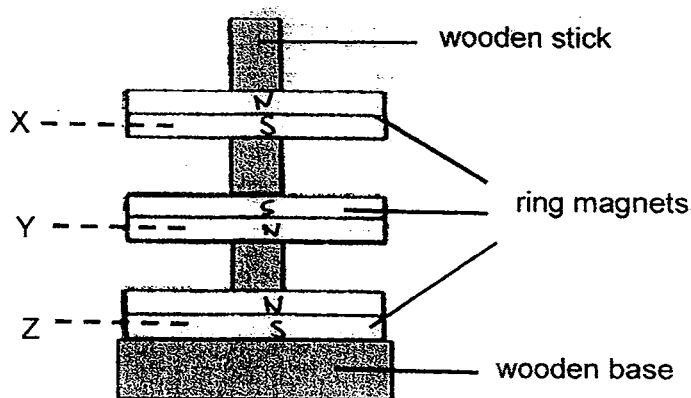
28. John used a light sensor and a data logger to find out how much light passed through four different materials, A, B, C and D. He plotted the results in a bar chart as shown below.



Which of the materials would cast the darkest shadow?

- (1) A
- (2) B
- (3) C
- (4) D

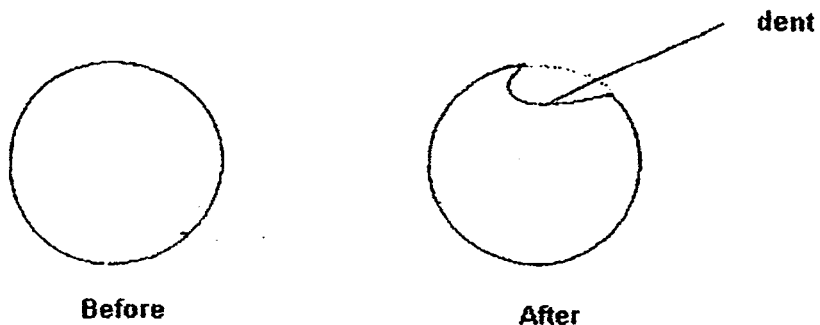
29. The diagram below shows what happens when three ring magnets are placed around a wooden stick. X, Y and Z are poles of the ring magnets.



What poles could X, Y and Z be?

	X	Y	Z
(1)	North-seeking pole	North-seeking pole	North-seeking pole
(2)	North-seeking pole	South-seeking pole	South-seeking pole
(3)	South-seeking pole	North-seeking pole	South-seeking pole
(4)	South-seeking pole	South-seeking pole	North-seeking pole

30. The diagram below shows a table-tennis ball, before and after it has been dented. There are no holes in the table-tennis ball.



Which of the following shows the change after the table-tennis ball has been dented?

	Before dent		After dent	
	Mass of table-tennis ball (g)	Volume of air in table tennis ball (cm <sup>3</sup> )	Mass of table-tennis ball (g)	Volume of air in table tennis ball (cm <sup>3</sup> )
(1)	3	8	2.5	6
(2)	3	8	2.5	8
(3)	3	8	3	6
(4)	3	8	3	8

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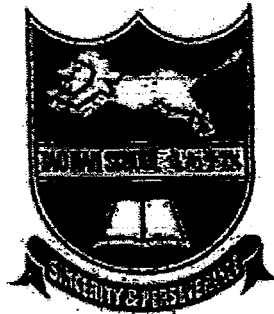
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## PRIMARY 5 MID-YEAR EXAMINATION 2015

Name : \_\_\_\_\_ ( ) Date: 15 May 2015

Class : Primary 5 ( ) Duration: 1 hour 45 minutes

Parent's Signature : \_\_\_\_\_ Marks: \_\_\_\_\_ / 40

## **SCIENCE BOOKLET B**

### INSTRUCTIONS TO CANDIDATES

Write your name, register number and class.

Do not turn over this page until you are told to do so.

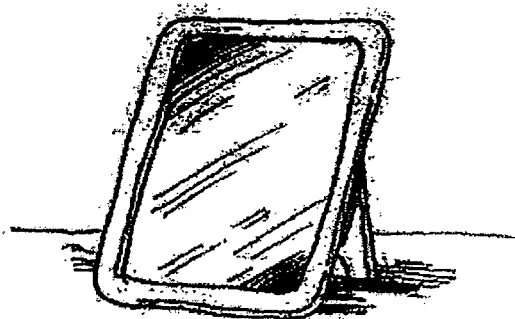
Follow all instructions carefully.

Answer all questions.

**Section B (40 marks)**

**Write your answers to the questions, 31 to 44, in the spaces provided.**

31. Amy had a hot shower. After showering, she found that the mirror in the bathroom was misted up. After a while, the mist cleared and she was able to see herself in the mirror again.



(a) Explain why the mirror was misted up.

[2]

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(b) Explain why the mist on the mirror cleared after a while.

[1]

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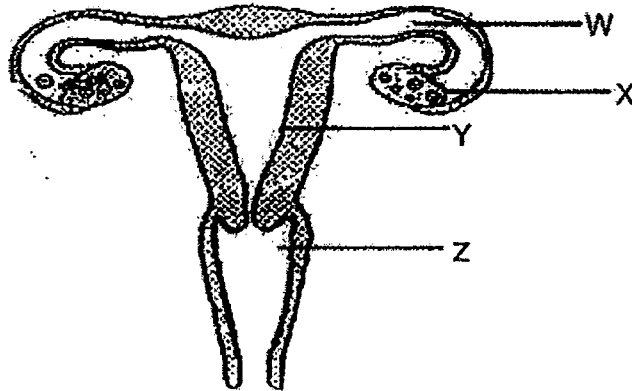
32. (a) What happens to a sperm and an egg during fertilisation?

[1]

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(b) The diagram below shows the human female reproductive system.

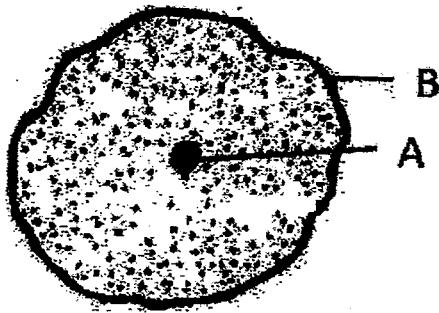


In which of the following parts, W, X, Y and Z, of the human female reproductive system do fertilisation and attachment of the fertilised egg to the womb take place?

[1]

Fertilisation	Attachment of the fertilised egg to the womb
(i)	(ii)

33. The diagram below shows an animal cell.



Name the parts, A and B, of the cell as indicated in the diagram and state their function.

[2]

Cell Part	Name of Cell Part	Function
A		
B		

34. Mrs Leong wanted to investigate if water will evaporate faster when the surrounding air temperature is higher. She poured equal volumes of water into two identical containers and placed them in two different rooms, Room A and Room B. She recorded the volume of water in both containers over 5 days in the table below.

Time (days)	Volume of water in the container (ml)	
	Room A	Room B
0	100	100
1	92	85
2	80	72
3	72	54
4	60	45
5	48	30

- (a) Identify the variable she changed for this experiment.

[1]

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- (b) Based on the results in the table, which room had a higher temperature?

Give a reason for your answer.

[2]

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35. Joseph conducted an experiment to investigate how two types of pollutants, liquid detergent and bleach, affect the growth of duckweeds. He filled 3 similar containers, P, Q and R, with tap water and added 50 duckweeds into each of them. He added liquid detergent into container Q and bleach into container R.

(a) Complete the table below with the correct volume of tap water and pollutants to be used to ensure a fair test.

Container	P	Q	R
Volume of tap water (ml)	(i)	100	(ii)
Volume of pollutants (ml)	(iii)	(iv)	50

(b) What is the purpose of having container P as the control set-up? [1]

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Joseph left the three containers near a window and recorded the number of healthy duckweeds after one week. The table below shows the results of his experiment.

Container	P	Q	R
Number of duckweeds at the start of the experiment	50	50	50
Number of duckweeds at the end of the experiment	55	45	20

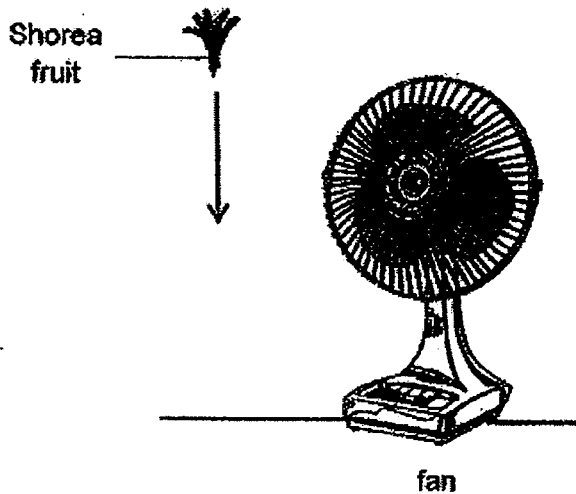
(c) Compare the results for the containers, Q and R. What can you conclude from the results of the experiment? [1]

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36. Zach was given two Shorea fruits. He was asked to find out if the length of the wing-like structure affects its duration in the air. He decided to drop the Shorea fruits in front of a fan and record the time taken for them to reach the ground.



- (a) State the variable that should be changed in this investigation? [1]

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- (b) Besides measuring the duration of the Shorea fruit in the air, state another variable that Zach can measure to show that the length of the wing-like structure affects the dispersal of the fruit. [1]

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- (c) State one reason why fruits and seeds need to be dispersed. [1]

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37. Calvin planted an equal number of similar bean seeds in 3 trays and placed them under different temperature conditions as shown below. The seeds were provided the same amount of sunlight, the same type of garden soil and watered with the same volume of water daily for six days.



Tray A  
6°C



Tray B  
15°C



Tray C  
27°C

The results are shown in the table below.

Tray	Temperature (°C)	Total number of seeds germinated					
		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6
A	6	0	0	0	0	1	1
B	15	0	0	0	1	4	6
C	27	0	2	8	13	17	20

- (a) What was the aim of the experiment?

[1]

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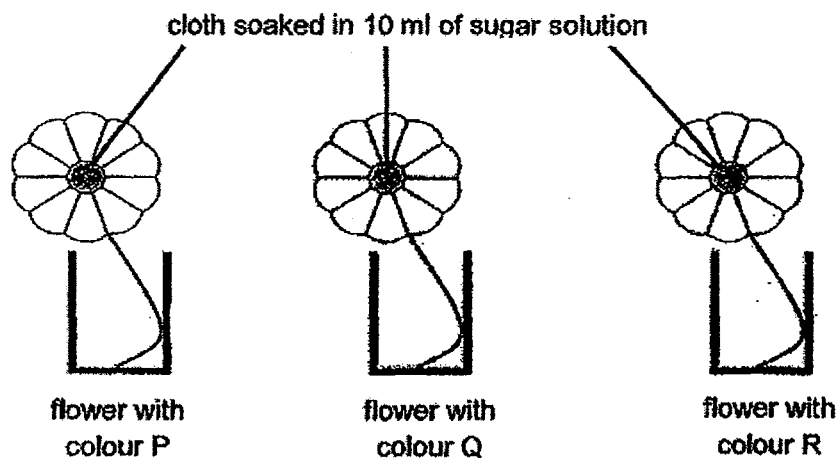
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- (b) Based on the results in the table, indicate with a tick, (✓) whether each of the following conclusion is True, False or Not Possible To Tell.

[2]

	Conclusion	True	False	Not Possible To Tell
(i)	The temperature of 6 °C was too cold for the seeds to germinate.			
(ii)	All types of seeds germinate best at the temperature of 27 °C.			
(iii)	The earliest germination was observed in seeds placed at the temperature of 27 °C.			
(iv)	The seeds would not germinate above the temperature of 27 °C.			

38. Paul wanted to find out if the number of butterflies landing on flowers was affected by the colour of the flowers. He made three identical flowers out of the same type of paper but with three different colours. He attached a ball of cloth soaked in 10ml of sugar solution to the middle of each of the three flowers as shown in the diagram below.



Paul placed the three flowers in the garden and counted the number of butterflies that landed on each flower over a period of four hours. He recorded his observations in the table below.

Colour of flower	Number of butterflies that landed on the flowers			
	1 <sup>st</sup> hour	2 <sup>nd</sup> hour	3 <sup>rd</sup> hour	4 <sup>th</sup> hour
P	2	3	2	2
Q	6	8	7	6
R	3	4	3	3

- (a) Based on the results of the experiment, which colour of flower, P, Q or R, would have the highest chance of being pollinated? [1]

- (b) Explain your answer in (a). [1]

- (c) Paul conducted another experiment to find out how the size of the flowers affects the number of butterflies that landed on the flowers. State one variable that he would have to keep constant. [1]

39. Mr Siew reared some chickens on his farm in Coop X and Coop Y, as shown in the table below. A few weeks later, Mr Siew found some eggs in his coops. He put an egg from each coop in an incubator and set the temperature at 41°C. After many weeks, the egg from Coop Y hatched, while the egg from Coop X did not.

Number of Chickens			
Coop X		Coop Y	
Male	Female	Male	Female
0	50	10	50

(a) Explain why the egg from Coop Y hatched but the egg from Coop X did not? [2]

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(b) What should Mr Siew do to ensure that the eggs in the Coop X will also hatch? [1]

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40. (a) Identify the process in the sexual reproduction of flowering plants which is similar to the transfer of sperm to the female's body in the sexual reproduction of human beings. [1]

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(b) Describe the change in the ovary, style and stigma of a flower after fertilisation. [2]

(i) Ovary 

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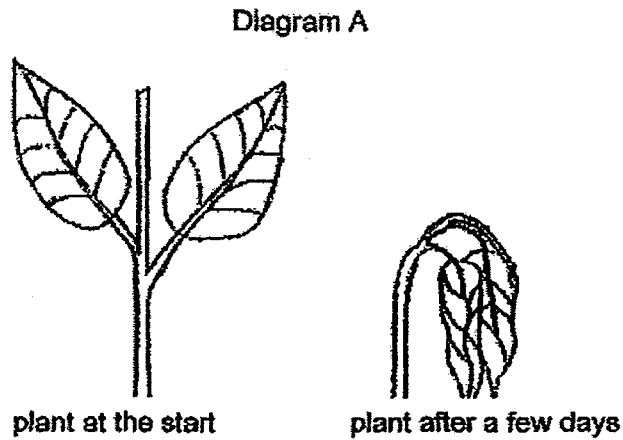
(ii) Stigma and style 

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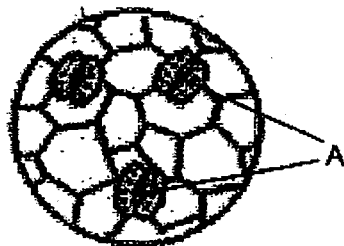
41. Xiao Wen had not been watering her plant for a few days. She observed the following change in her plant:



(a) Based on Diagram A, state the importance of water to plants. [1]

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The diagram below shows an enlarged part of the leaf.



(b) What are the tiny openings labelled A called? [1]

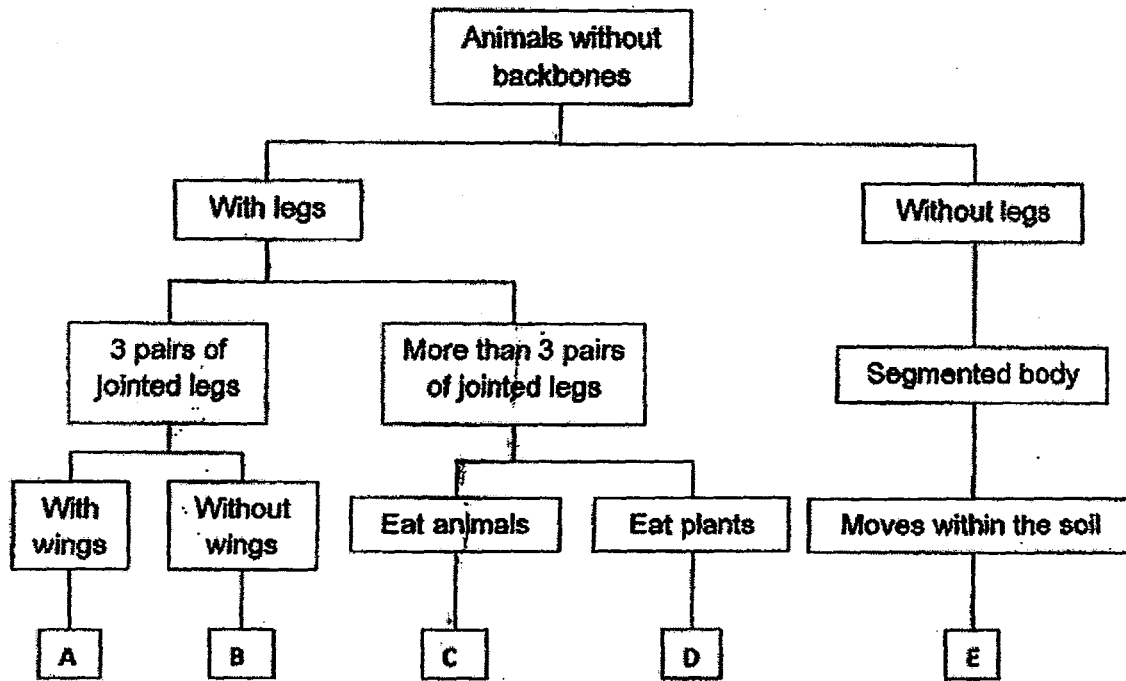
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(c) State the function of the tiny openings labelled A. [1]

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42. Study the classification chart below.





(a) Based on the chart above, list all the characteristics of Animal C [1]

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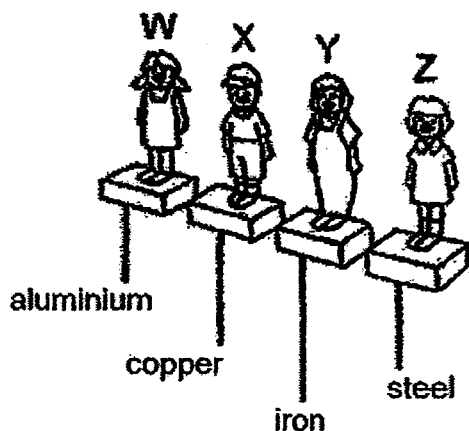


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(b) Write the letter, A, B, C, D or E, that represents the animals below. [2]

Animal	Represented by Letter
(i) 	
(ii) 	

43. Michael had four figurines, W, X, Y and Z. Each of them is made of a different metal as shown below.



He put the figurines on a cardboard and tried to move them using a magnet below the cardboard.

- (a) Which figurine(s), W, X, Y or Z, was/were Michael able to move using the magnet? Explain your answer. [2]

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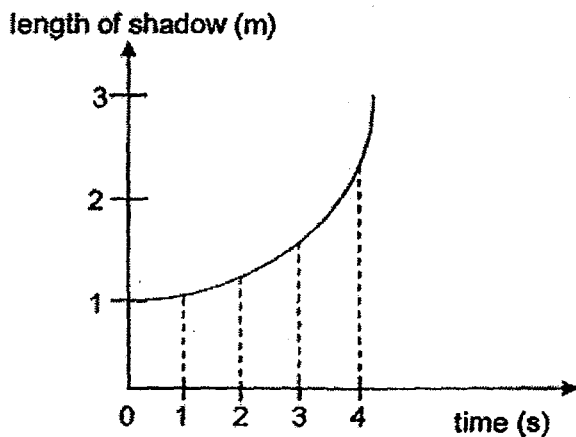
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- (b) Identify another metal which a figurine can be made of so that it can also be moved by the magnet. [1]

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44. The graph below shows how the length of Leela's shadow changed over a period of time as she walked in a straight line near a street lamp at night.



- (a) State the two properties of light that caused her shadow to form. [2]

(i) Property 1 - \_\_\_\_\_

(ii) Property 2 - \_\_\_\_\_

- (b) Was Leela walking towards or away from the lamp during the period shown in the graph? Give a reason for your answer. [1]

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# Answer Key

EXAM PAPER 2015

SCHOOL : TAO NAN

SUBJECT : P5 SCIENCE

TERM : SA1

ORDER CALL : MR GAN @ 92998971 92475053 86065443

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
2	4	1	2	2	4	4	3	3	4
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
1	3	2	1	4	3	4	1	3	1
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
4	4	3	4	2	1	4	4	3	3

31)a)The water from Amy's hot shower evaporated into the surroundings and the water vapour condensed on the cooler surface of the mirror.

b)The mist had evaporated.

32)a)The sperm will fuse with the egg.

b)i)W ii)Y

33)A: nucleus / It controls everything that happens in the cell.

B: Cell membrane /It controls what goes in and out of cell.

34)a)The location of the containers.

b)Room B. The water in the container in Room B evaporated faster than the water in container of Room A.

35)a)i)100    ii)100    iii)0    iv)50

b)So that he could compare his results in container Q and R to the results in contain P.

c)Bleach kills more duckweeds than detergent.

36)a)The length of the wing-like structure of each share a fruit.

b)The distance that the share a fruit travelled when it lands.

c)To prevent overcrowding.

37)a)To find out how the temperature of the surroundings affects the amount of time seeds take to germinate.

b)i)F    ii)Not    iii)T    iv)Not

38)a)Flower Q.

b)The most number of butterflies were attracted to flower Q.

c)The colour of each flower.

39)a)There were no males to fertilise the eggs in Coop X while there were males to fertilise the eggs in Coop Y.

b)Put some male chickens in Coop X.

40)a)It is pollination.

b)i)grows bigger    ii)drop off

41)a)Plants need water to live.

b)Stoma.

41)c)They help the plant to breathe.

42)a)Animal C is an animal without a back bone that has more than 3 pairs of jointed legs and eats animals.

b)i)E ii)B

43)a)Figurine X Y Z . They are made of magnetic material and attracted to magnet.

b)Cobalt.

44)a)i)Light travels in straight line.

ii)Light cannot shine through can opaque object.

b)Walking away. The length of her shadow increased as she was walking away.

