

Anglo-Chinese School (Junior)



**SEMESTRAL ASSESSMENT 2 (2017)
PRIMARY 5**

SCIENCE

BOOKLET A

THURSDAY

2 November 2017

1 HOUR 30 MINUTES

Name : _____ ()

Class : P5 _____

INSTRUCTIONS TO PUPILS

DO NOT TURN OVER THE PAGES UNTIL YOU ARE TOLD TO DO SO

Follow all instructions carefully.

There are 25 questions in this booklet.

Answer ALL questions.

INFORMATION FOR PUPILS

The total marks for this booklet is 50.

The total time for Booklets A and B is 1 hour 30 minutes.

This question paper consists of 20 printed pages (inclusive of cover page).

Booklet A (50 marks)

For each question from 1 to 25, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade your answer on the Optical Answer Sheet. (25 x 2 marks)

1. The table below provides some information on the characteristics of organisms A, B and C.

A tick (✓) in the box indicates the presence of the characteristics.

Organisms	Feeds on dead matter	Reproduces from spores	Makes its own food
A			✓
B	✓	✓	
C		✓	✓

Which of the following represents organisms A, B and C?

	A	B	C
(1)	Fern	Lemon Tree	Mould
(2)	Lemon Tree	Mushroom	Fern
(3)	Mushroom	Mould	Lemon Tree
(4)	Mould	Fern	Mushroom

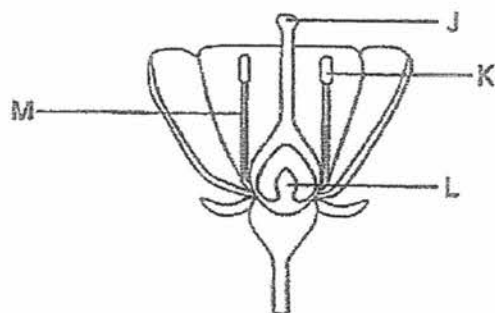
2. Remus germinated a seed and recorded the observations in the table as shown below.

Observations	Day
Seed becomes swollen	1
Seed coat breaks	4
Roots start to appear	6
Shoots start to appear	9
Seed leaves finally drop off	16

On which day will the seedling most probably be able to photosynthesise?

- (1) 1
(2) 4
(3) 8
(4) 15

3. The diagram below shows the cross-section of a flower. Karen has identified some parts of the flower and recorded the name and function of each part of the flower in the table below.

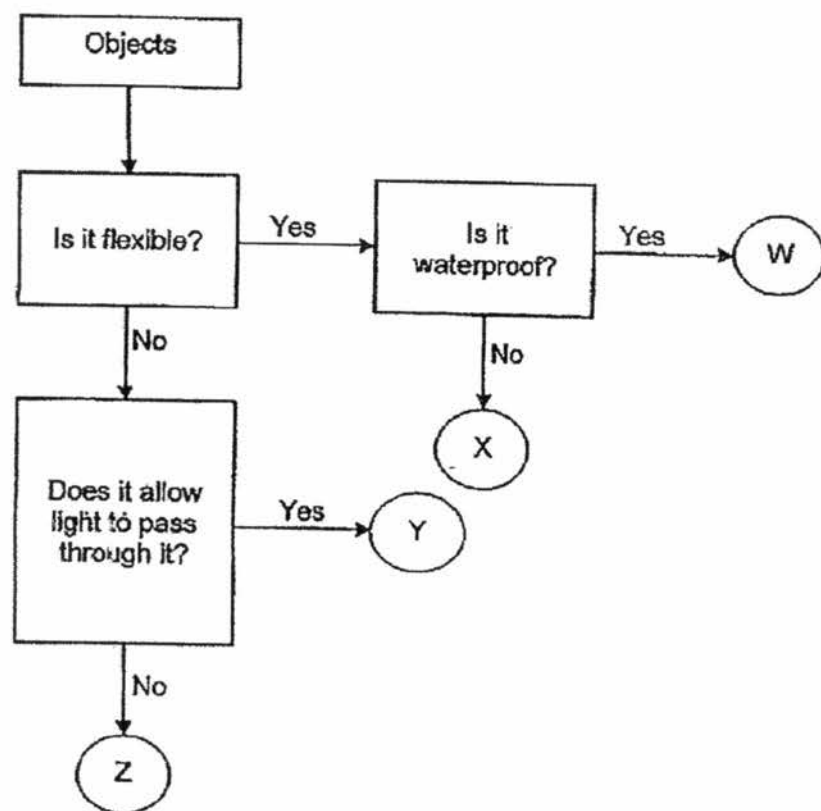


Part	Name of part	Function
J	Stigma	It produces the female sex cells.
K	Anther	It produces the male sex cells.
L	Style	It receives the pollen grains.
M	Filament	It supports the anther.

Which of the above names of parts and functions match the labelled parts correctly?

- (1) J and L only
- (2) K and M only
- (3) L and M only
- (4) J, K and L only

4. Study the flow chart below carefully.



Which of the following correctly represents objects W, X, Y and Z?

	W	X	Y	Z
(1)	Raincoat	Shirt	Window pane	Brick
(2)	Shirt	Raincoat	Brick	Window pane
(3)	Window pane	Brick	Raincoat	Shirt
(4)	Brick	Window pane	Shirt	Raincoat

5. Which of the following statements about the life cycles of a butterfly and a frog is/are incorrect?

- A Both life cycles have three stages.
- B Both of their young live in water during the early stages.
- C The butterfly gives birth to live young but the frog lays eggs.
- D The life cycle of a butterfly has a pupa stage but the life cycle of a frog does not have a pupa stage.

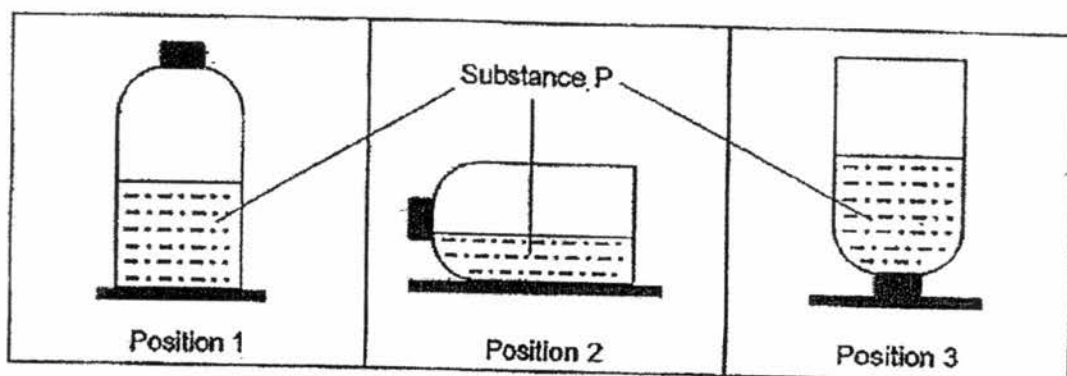
- (1) D only
 - (2) B and D only
 - (3) A, B and C only
 - (4) A, C and D only
6. Kenneth wants to find out if the number of coils of wire around an iron nail affects the strength of the electromagnet. An iron nail becomes an electromagnet when it is placed in a coil of wire joined to batteries in a closed circuit.

Arrangement	Number of batteries	Number of coils of wire around iron nail
P	2	30
Q	1	20
R	4	30
S	2	50

Which two arrangements below should he set up to carry out his investigation?

- (1) P and R
- (2) P and S
- (3) R and Q
- (4) Q and S

7. The diagram below shows a container with Substance P placed in different positions as shown below.



Based on the diagram, what can you conclude about substance P?

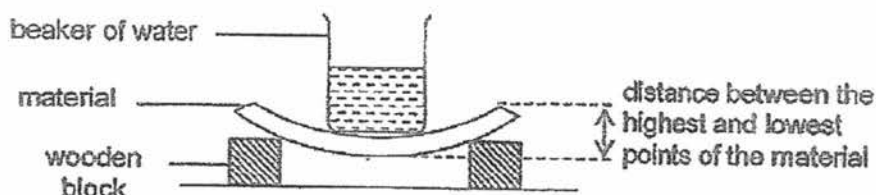
- W P takes up space.
 X P can be compressed.
 Y P does not have a definite volume.
 Z P takes the shape of the container.
- (1) Z only
 (2) X and Y only
 (3) W and Z only
 (4) W, X and Y only
8. Joan made a comparison of the reproductive systems in flowering plants and humans in the table below.

A	Flowering Plants	Humans
B	The male sex cells are called anthers.	The male sex cells are called sperms.
C	The egg is produced in the ovary.	The egg cell is found inside the ovule.
D	Only fertilised egg cell develops into a fruit.	Only fertilised egg develops into a baby.
E	Reproduction occurs to ensure the extinction of the species.	Reproduction occurs to ensure the continuity of the species.

Which of the following is/are the correct comparison(s)?

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

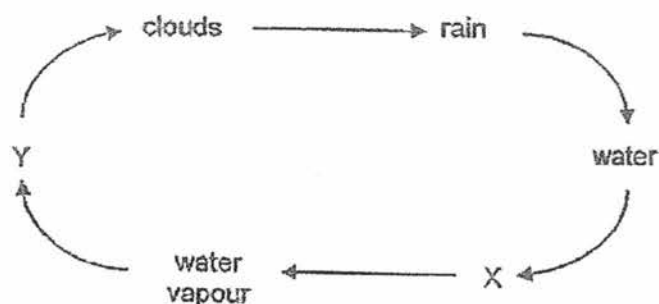
9. Aaron set up an experiment to investigate the flexibility of 3 different materials, A, B and C as shown below.



He poured different amounts of water into the beaker placed on top of each material until the distance between the highest and lowest points of the material reached 2 cm. He recorded his observations and concluded that material B was the most flexible and material A was the least flexible. Which of the following did he record in order to draw the conclusion above?

Amount of water in beaker (cm ³)			
	Material A	Material B	Material C
(1)	150	50	100
(2)	100	50	150
(3)	150	100	150
(4)	50	150	100

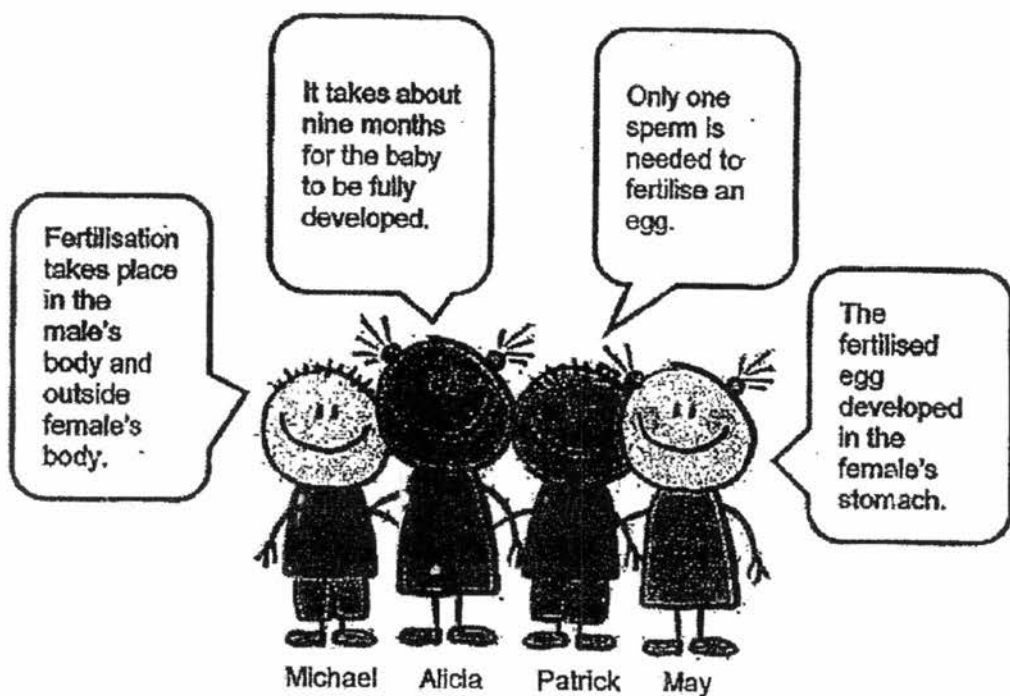
10. Study the water cycle below. X and Y represent the different processes that occur in the water cycle.



Which of the following do X and Y represent?

	X	Y
(1)	Evaporation	Melting
(2)	Condensation	Melting
(3)	Evaporation	Condensation
(4)	Melting	Evaporation

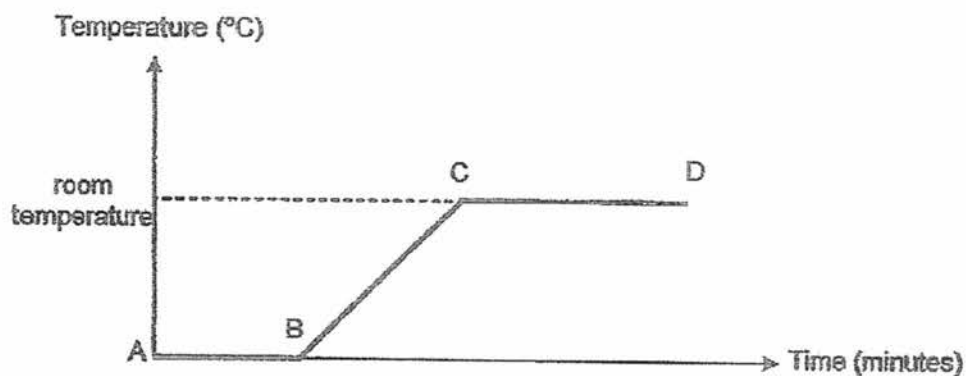
11. Mrs Lim has a discussion with her class. Four students made statements about the human reproduction process.



Which of the following students made correct statements about human reproduction process?

- (1) Alicia and May
- (2) May and Michael
- (3) Alicia and Patrick
- (4) Patrick and Michael

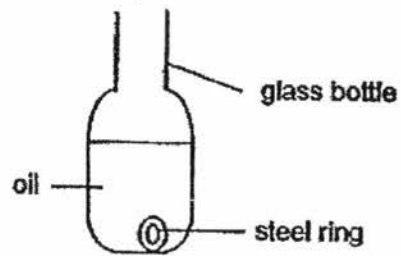
12. Rachel set up an experiment to find out how long it takes for an ice cube to melt. The graph below shows the changes in the temperature of the ice cube when it was left to melt on a plate.



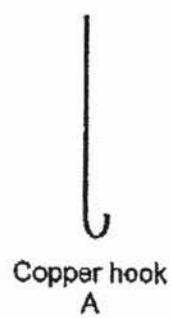
Which point of the graph shows that the ice cube has just melted completely to become water?

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

13. Paxon was given a glass bottle filled with oil. There was a steel ring inside.

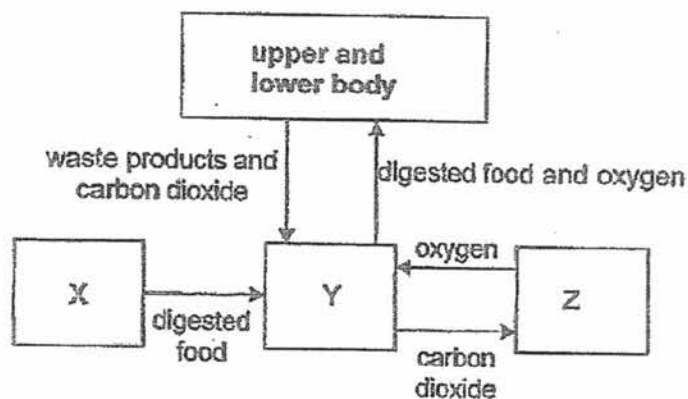


Which of the following items can he use to remove the steel ring without the item touching the oil?



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

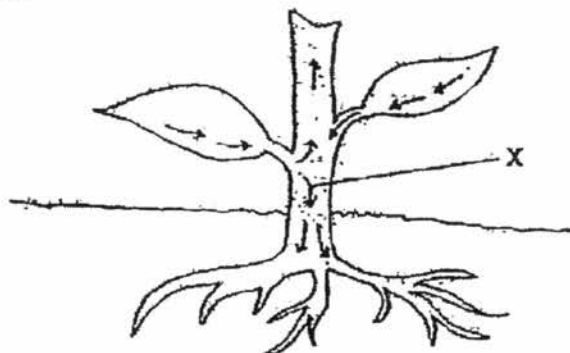
14. The diagram below shows the different systems in the human body working together.



Based on the diagram above, which of the following correctly represents X, Y and Z?

	X	Y	Z
(1)	Respiratory	Circulatory	Digestive
(2)	Digestive	Respiratory	Circulatory
(3)	Circulatory	Digestive	Respiratory
(4)	Digestive	Circulatory	Respiratory

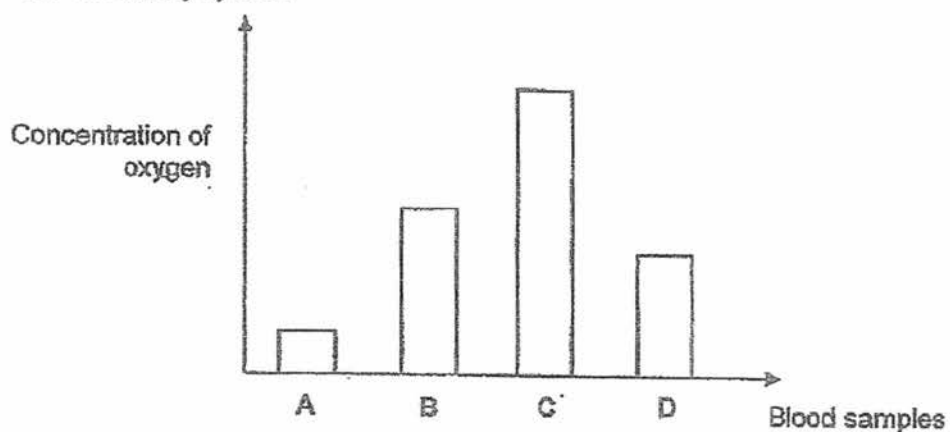
15. The diagram shows a plant and the path (→) taken by Substance X after photosynthesis.



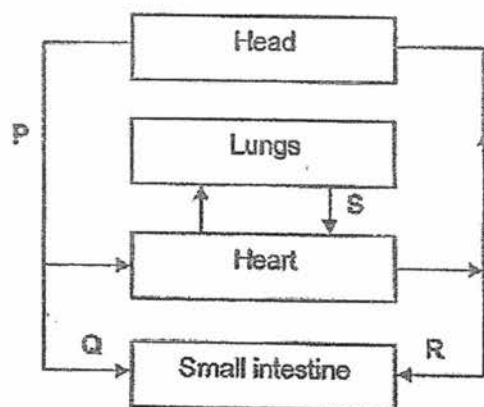
What is Substance X?

- (1) water
 - (2) glucose
 - (3) chlorophyll
 - (4) carbon dioxide
16. Denzel made the following statements on how a fish breathes.
- Statement 1:** Water containing dissolved oxygen enters the mouth and passes through the gills.
- Statement 2:** Dissolved oxygen from the water is absorbed into the blood vessels in the mouth.
- Statement 3:** The fish opens its mouth to release dissolved carbon dioxide in the water.
- Statement 4:** Dissolved carbon dioxide is carried by the blood from the different parts of the fish's body to the gills.
- His teacher, Mr Karl, told him that his statement(s) is/are incorrect. Which one of the statement(s) is/are Incorrect?
- (1) Statement 3 only
 - (2) Statement 1 and 4 only
 - (3) Statement 2 and 3 only
 - (4) Statement 1, 2 and 4 only

17. The bar graph below shows the concentration of oxygen in four blood samples taken at the same time from different blood vessels located at different parts of the circulatory system.



The following diagram shows how blood flows in different parts of the human body.



Which blood sample is most likely to be taken from the blood vessel which is labelled S in the diagram above?

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

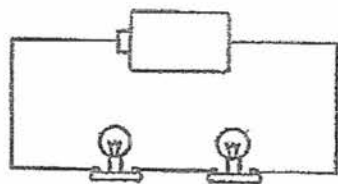
18. The table below lists cell parts of animal and/or plant cells and their functions.

	Parts of Cell	Present in Animal Cell?	Present in Plant Cell?	Function of the part
A	Nucleus	Yes	Yes	Controls all activities in the cell.
B	Cytoplasm	Yes	No	Allows the movement of substances around the cell.
C	Chloroplast	No	Yes	Contains chlorophyll which captures light to make food.
D	Cell Membrane	Yes	Yes	Protects the cell and gives it a fixed shape.
E	Cell Wall	No	Yes	Controls the movement of substances in and out of the cell.

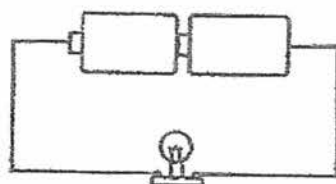
Which of the following is incorrect about the cell parts and / or their functions?

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

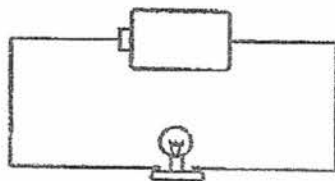
19. The diagrams below show four circuits with different arrangements of identical batteries and light bulbs.



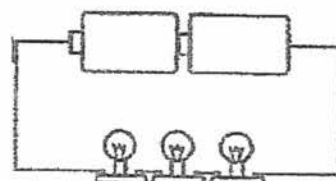
P



Q



R



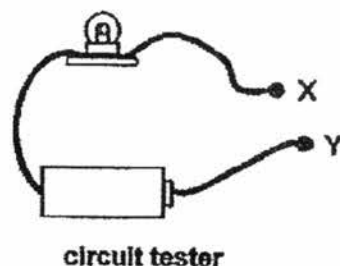
S

Which of the following shows the correct order of the brightness of the light bulbs in circuits P, Q, R and S, from the brightest to the dimmest?

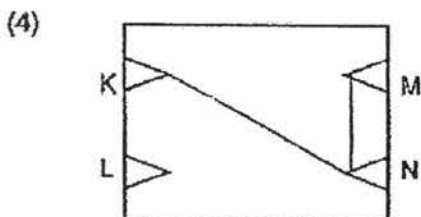
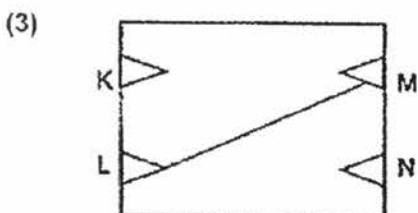
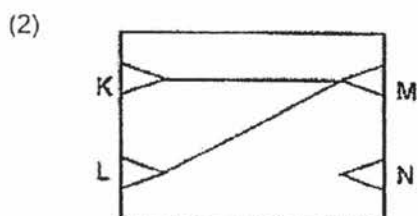
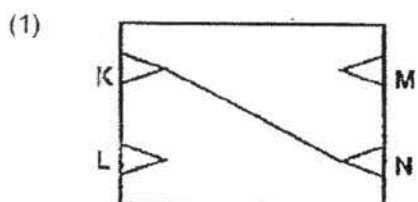
- (1) R, Q, P, S
- (2) Q, R, S, P
- (3) Q, S, R, P
- (4) S, P, Q, R

20. Jerome used a circuit tester to test a circuit card. He connected the points X and Y of the circuit tester to the various clips K, L, M and N on a circuit card to see if the bulb would light up. He recorded the results of his experiment in the table below.

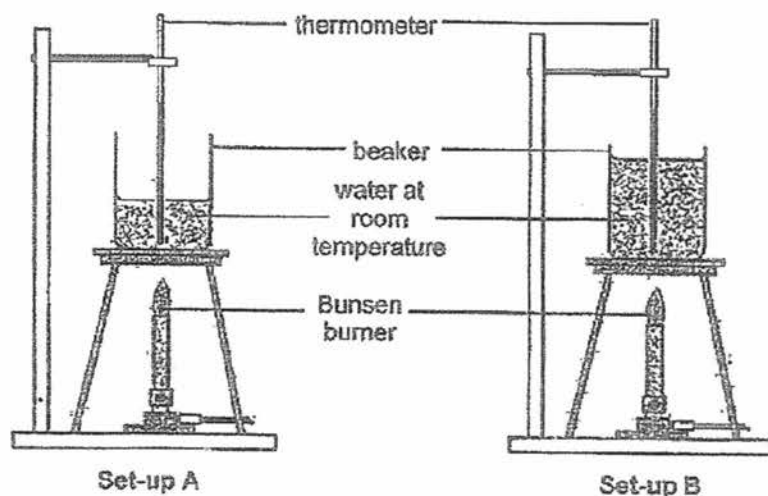
Connection tested	Did the bulb light up?
K and L	No
K and M	Yes
L and M	No
L and N	No
M and N	Yes



Which one of the following represents the circuit card that Jerome tested?



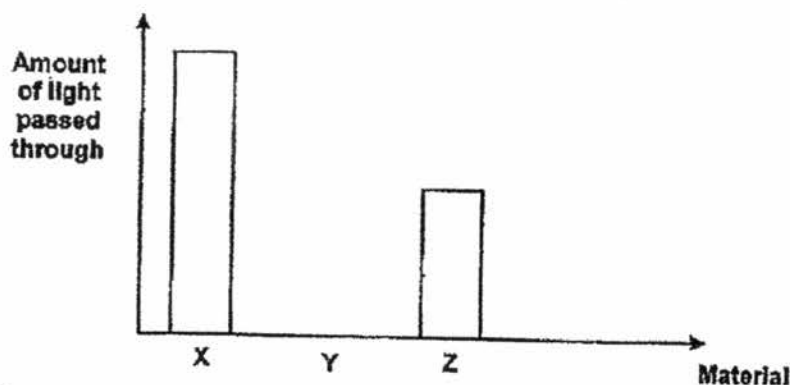
21. Jadyn conducted an experiment using the two set-ups as shown below. He heated both beakers with Bunsen burners of same heat intensity until the water in both beakers boiled.



Which of the two conclusions are the most accurate based on Jadyn's experiment?

- A The water in both set-ups have the same amount of heat
 - B The water in Set-up B has more amount of heat than the water in Set-up A.
 - C The lesser the volume of water, the faster it will take to reach boiling point.
 - D The greater the volume of water, the faster it will take to reach boiling point.
- (1) A and C
 (2) A and D
 (3) B and C
 (4) B and D

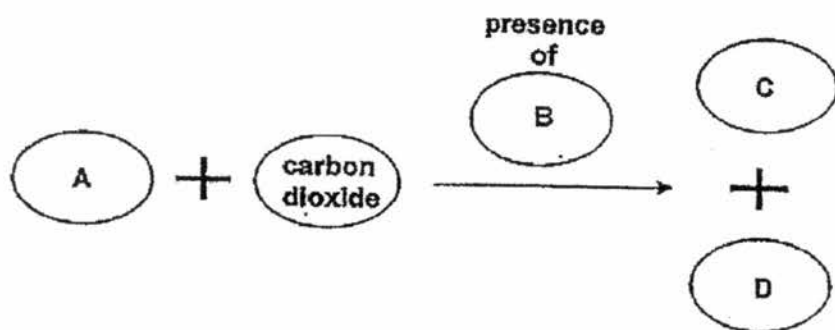
22. Yong Xin wanted to find out the amount of light that can pass through a material. He used a light sensor attached to a data logger and conducted an experiment with three different cups made of material, X, Y and Z, of the same size and thickness. He recorded the results in the graph below.



What materials could cups X, Y and Z be made of?

	X	Y	Z
(1)	frosted glass	ceramic	glass
(2)	glass	frosted glass	ceramic
(3)	frosted glass	glass	ceramic
(4)	glass	ceramic	frosted glass

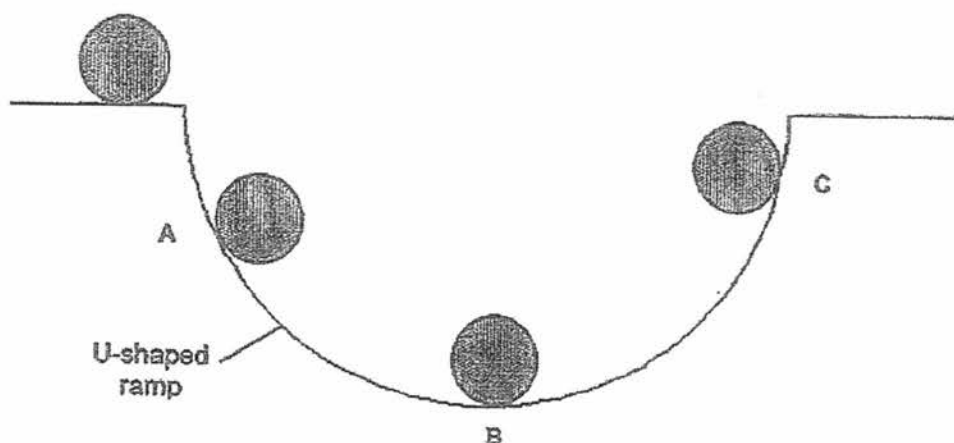
23. The diagram below shows the process of photosynthesis in a plant.



Which of the following correctly represents A, B, C and D in the diagram?

	A	B	C	D
(1)	sugar	light	water	energy
(2)	water	sugar	light	energy
(3)	light	sugar	water	oxygen
(4)	water	light	sugar	oxygen

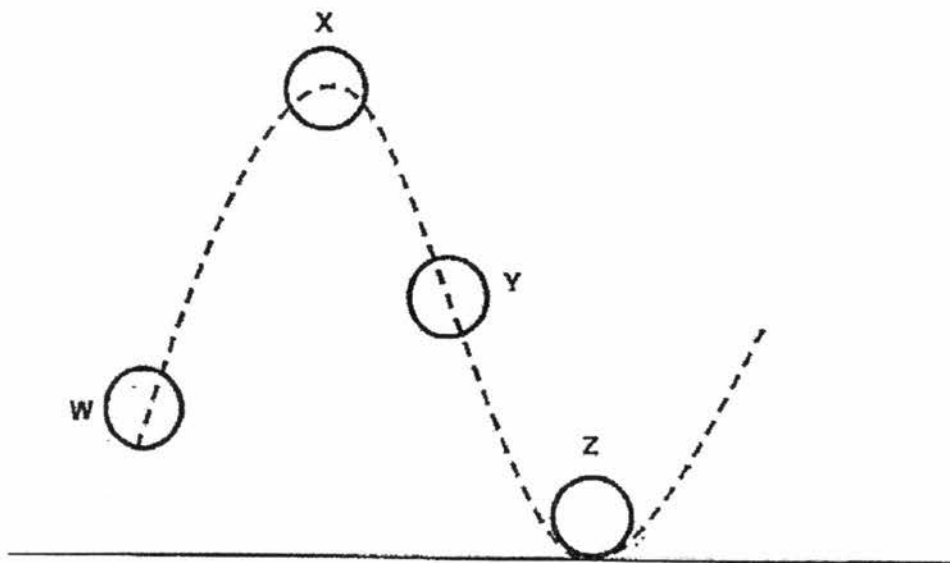
- 24 Jonathan rolled a ball down a U-shaped ramp. The diagram below shows the position of the ball as it rolls from A to C.



Which of the following shows correctly the changes in the kinetic energy and potential energy of the ball as it rolls from A to C?

	change in kinetic energy from A to B	change in potential energy from B to C
(1)	increases	increases
(2)	increases	decreases
(3)	decreases	increases
(4)	decreases	decreases

25. Gabriel threw a ball from point W. The diagram below shows the position of the ball at points X, Y and Z, after it was thrown.



Gabriel described the energy the ball possessed when it was at points W, X, Y and Z.

Which of the following descriptions are correct?

- A There is no potential energy at Point W.
- B The kinetic energy at Point Y is higher than the kinetic energy at Point Z.
- C The potential energy at Point X is higher than the potential energy at Point Z.
- D The kinetic energy is decreasing as the ball travels from Point W to Point X.

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

SEMESTRAL ASSESSMENT 2 (2017)
PRIMARY 5
SCIENCE
BOOKLET B

THURSDAY

2 November 2017

1 HOUR 30 MINUTES

Name : _____ ()

Class : P5 _____

INSTRUCTIONS TO PUPILS

DO NOT TURN OVER THE PAGES UNTIL YOU ARE TOLD TO DO SO

Follow all instructions carefully.

There are 13 questions in this booklet.

Answer **ALL** questions.

INFORMATION FOR PUPILS

The number of marks is given in brackets [] at the end of each question or part question.

The total marks for this booklet is 40.

The total time for Booklets A and B is 1 hour 30 minutes.

This question paper consists of 14 printed pages (inclusive of cover page).

BOOKLET A	/ 50
BOOKLET B	/ 40
PBA	/ 10
TOTAL	/ 100
Parent's signature/ Date:	

Booklet B (40 marks)

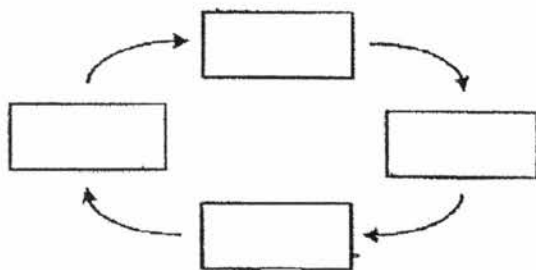
For questions 26 to 38, write your answers in this booklet.

The number of marks available is shown in brackets [] at the end of each question or part question.

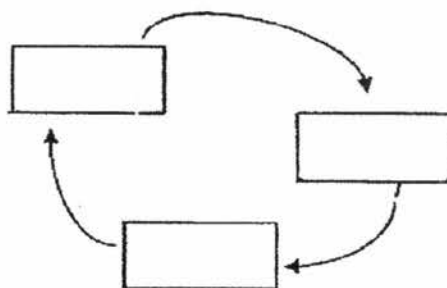
26. • The diagrams represent the life cycles of a mealworm beetle and a cockroach.

(a) Fill in the boxes with the following words. (You may repeat some of the words.) [2]

- Egg
- Adult
- Pupa
- Larva
- Nymph



Life cycle of a mealworm beetle



Life cycle of a cockroach

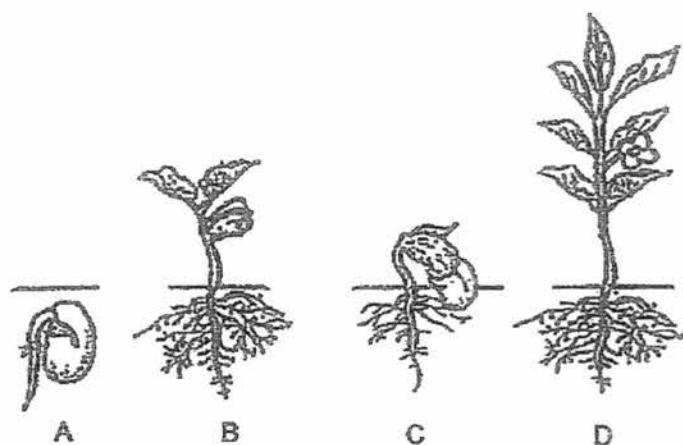
(b) State a similarity between the young and the adult of the cockroach. [1]

(c) At which stage of the life cycle of the mealworm beetle does it moult? Why does it moult at that stage? [1]

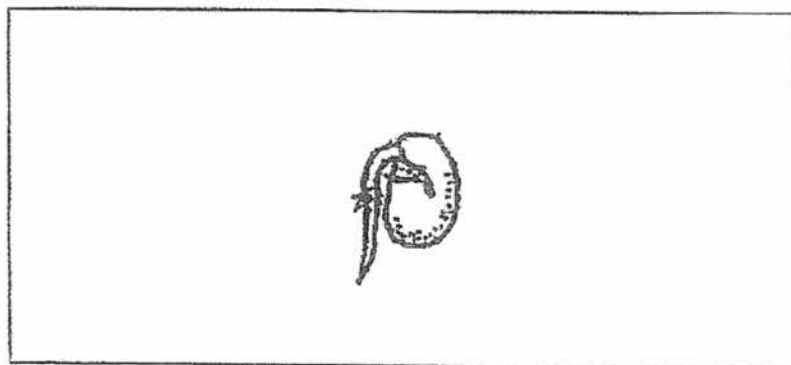
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SCORE	4
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27. Jermaine planted a bean seed in a transparent pot. Over the next month, she observed its growth and drew her observations. The diagrams show her drawings.



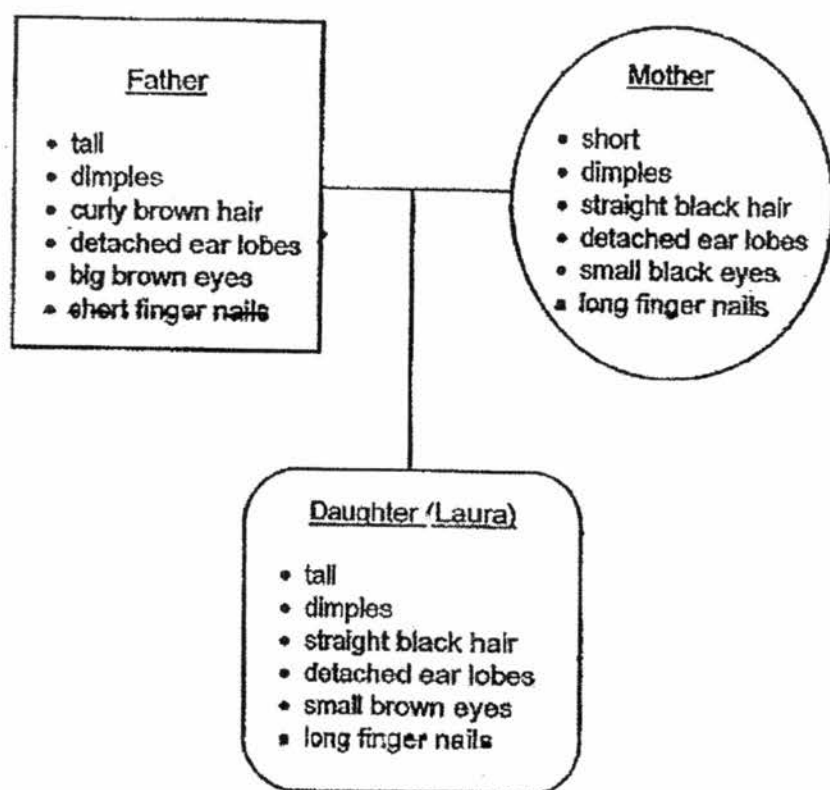
- (a) Arrange Jermaine's drawings of her observations, A, B, C and D, in the correct order beginning with what she saw first. [1]
- _____
- (b) What are the conditions necessary for germination to take place? [1]
- _____
- (c) In the box below, label and name the part that provides the energy for germination. [1]



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SCORE	
	3

28. Study the diagram below carefully. The diagram represents some of the characteristics of Laura's family.



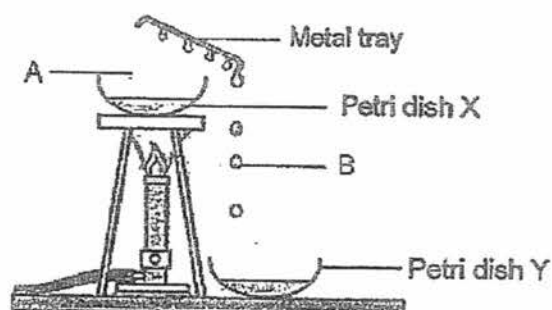
- (a) Which characteristics that are common to both parents did Laura inherit? [1]

- (b) Name one characteristic found only in Laura's mother that Laura inherited. [1]

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SCORE	2
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29. Gideon conducted an experiment as shown in the diagram below. He heated some water in Petri dish X until it started boiling. He then placed a metal tray above it.



- (a) Identify the states of water at A and B. [1]

A: _____

B: _____

- (b) At the end of the experiment, Gideon noticed that the volume of water in the Petri dish X had decreased. Explain why. [1]

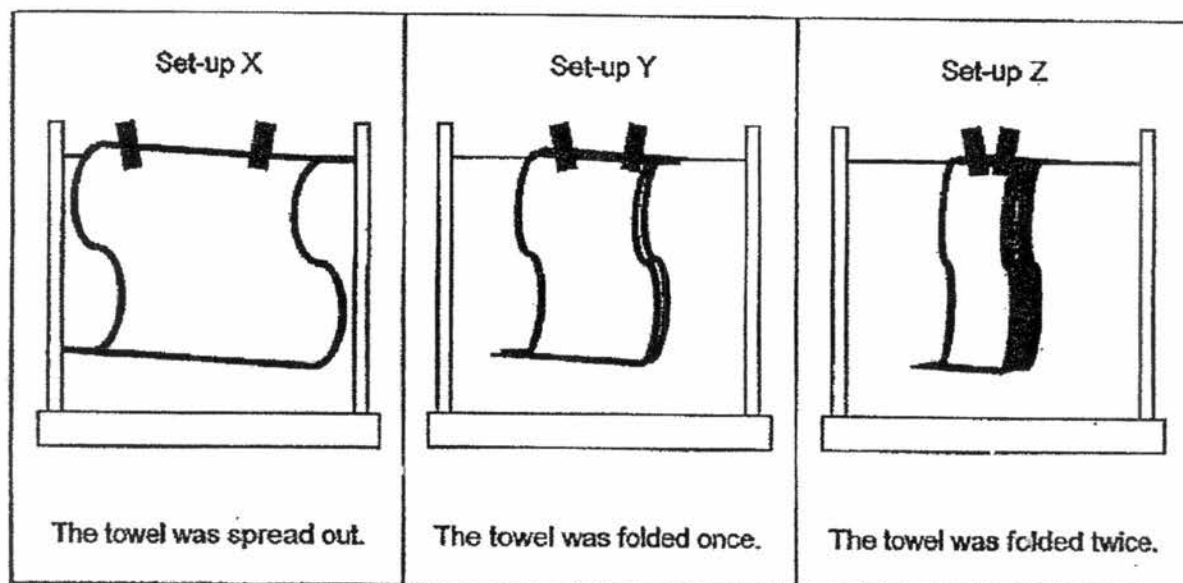
- (c) Explain clearly how the water droplets on the metal tray were formed. [2]

- (d) Suggest and explain clearly how he can collect more water in Petri dish Y for the same duration of the experiment. [1]

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SCORE	
	5

30. Ashley prepared the following 3 set-ups, X, Y and Z, and placed them in the laundry room. There were 3 identical towels weighing 150g each at the start of the experiment. Each towel was then soaked in 100 ml of water.



The table below shows the mass of each towel after 8 hours.

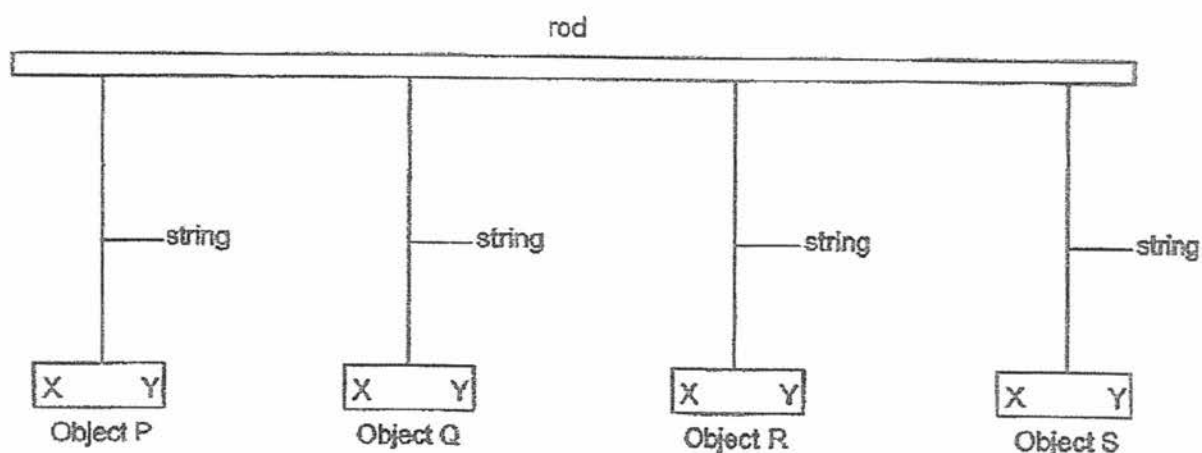
Mass of towel after 8 hours (g)		
X	Y	Z
150	190	210

- (a) Based on the information given in the table above, in which set-up was the rate of evaporation the fastest? [1]
- _____
- (b) What was the factor that affected the rate of evaporation in this experiment? [1]
- _____
- (c) From the result of the experiment, which data in the above table is Incorrect? Why? [1]
- _____
- _____

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SCORE	
	3

31. Peter hung 4 objects from a rod as shown in the diagram below.



He placed the North Pole of a bar magnet near the four objects and recorded his observations in the table below.

Object	Observations	
	North Pole and X	North Pole and Y
P	attracted	repelled
Q	attracted	attracted
R	remained still	remained still
S	repelled	attracted

- (a) Which object, P, Q, R or S, could be made of glass? Explain why. [1]

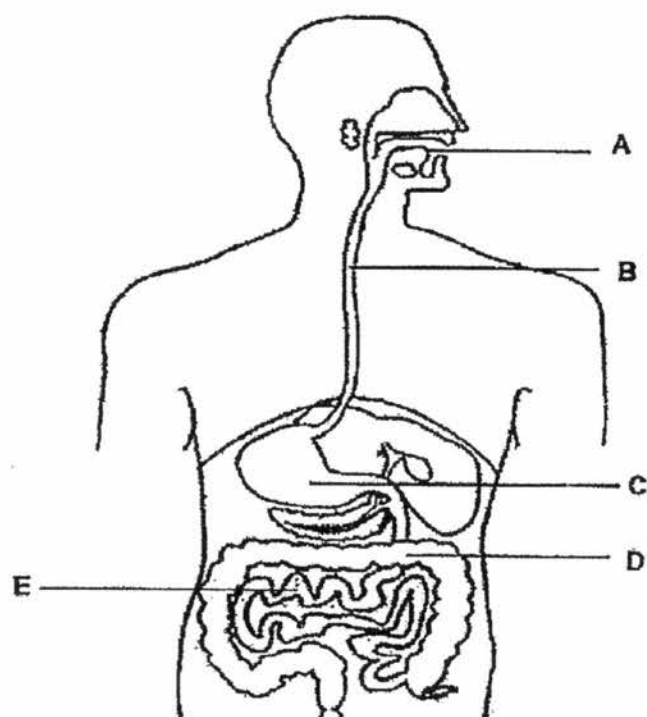
- (b) What material could Object Q be made of? Explain your answer based on the observations made by Peter. [1]

- (c) Which of the object(s) is/are magnets? Explain why. [1]

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SCORE	3
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32. The diagram below shows the human digestive system.



- (a) Name the parts labelled B and E. [1]

B: _____

E: _____

- (b) A substance is added to food in both parts A and C. What is this substance? [1]
Explain its function.

- (c) What is the function of Part D? [1]

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SCORE	
	3

33. Kelvin was lifting some weights in the gym.



- (a) Describe how oxygen in the surrounding air was sent to his arms when he was lifting the weights. [2]

- (b) State two substances in the circulatory system that the body requires more when he was lifting weights. [1]

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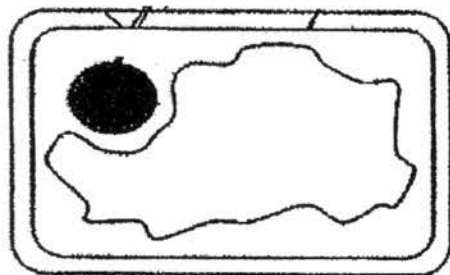
SCORE	<div style="border: 1px solid black; width: 100px; height: 100px; position: relative;"><div style="position: absolute; top: 0; right: 0; width: 50%; height: 50%; border-left: 1px solid black; border-bottom: 1px solid black; transform: rotate(45deg);"></div><div style="position: absolute; bottom: 0; right: 0; width: 20px; height: 20px; text-align: center; line-height: 20;">3</div></div>
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34. Jeff made a study of the parts that are found in some cells. He recorded his observations in the table below, using a tick (✓) to indicate the presence of the parts in each cell.

	Cell A	Cell B	Cell C
Cell wall	✓		✓
Cell membrane	✓	✓	✓
Chloroplast	✓		
Cytoplasm	✓	✓	✓
Nucleus	✓	✓	✓

- (a) Which of the cell(s) is / are likely to be taken from a plant? Give a reason for your answer. [1]

Study the diagram.



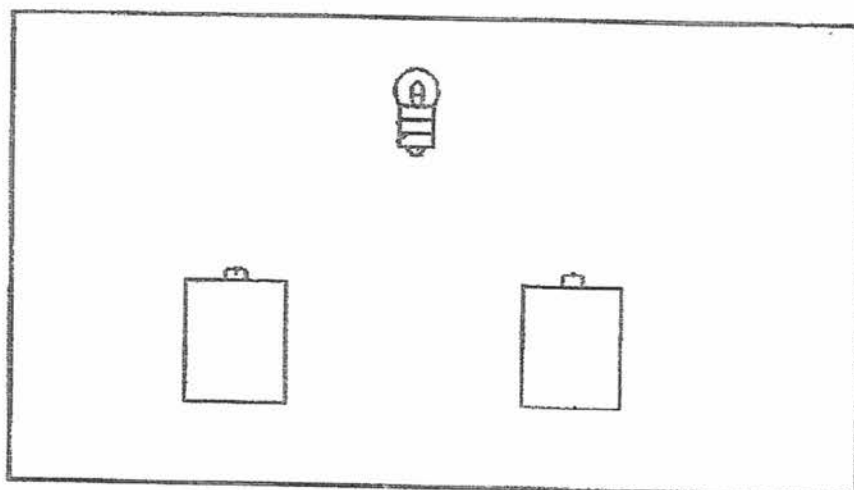
- (b) Which cell, A, B or C, best represents the diagram above? [1]

- (c) In the diagram above, label and name the part that control the movement of substances going in and out of the cell. [1]

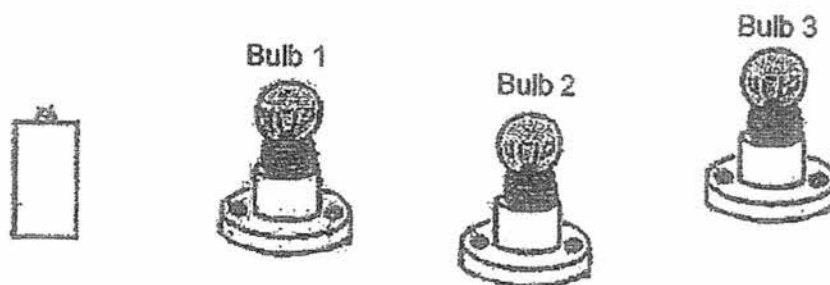
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SCORE	3
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35. The diagram below shows a bulb and two batteries.



- (a) Draw 3 wires to show how you would connect the batteries to the bulb to produce the brightest light. [1]
- (b) Study the electrical circuit below.

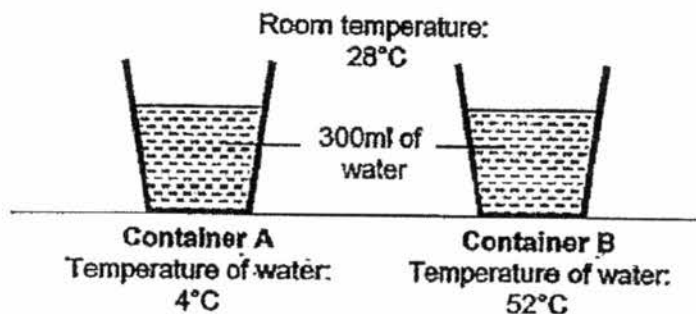


- (i) What will happen to the other bulbs if Bulb 2 is blown? [1]
- _____
- (ii) What can he do to allow him to control the light bulbs individually? [1]
- _____

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SCORE	
	3

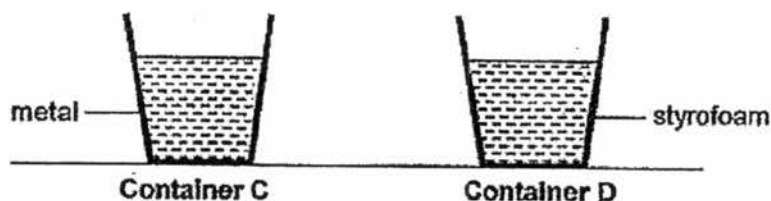
36. Christopher filled two identical containers, A and B, made of the same material with equal amounts of water at different temperatures. He then placed them in a room with a temperature of about 28°C .



- (a) The set-up was left in the room for about 30 minutes. Place a tick (✓) in the correct boxes to indicate the possible changes taking place during the 30 minutes. [1]

	Lose heat	Gain heat	Temperature increases	Temperature decreases
Water in Container A				
Water in Container B				

Christopher then set up another similar experiment but the containers (C and D) were made of different materials. He filled them up with water.



- (b) What was the aim of Christopher's second experiment? [1]

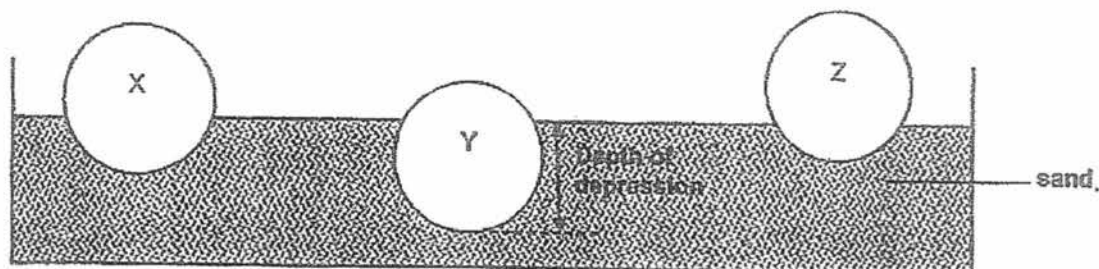
- (c) In the table below, put a tick (✓) in the boxes next to the statements for the experiment to be a fair test. [1]

Statements	Tick (✓)
Both containers should have the same amount of water.	
Both containers must be of the same size.	
Both containers must be made of the same material.	
The temperature of the water in both containers must be different.	
Both must be placed in the same location.	

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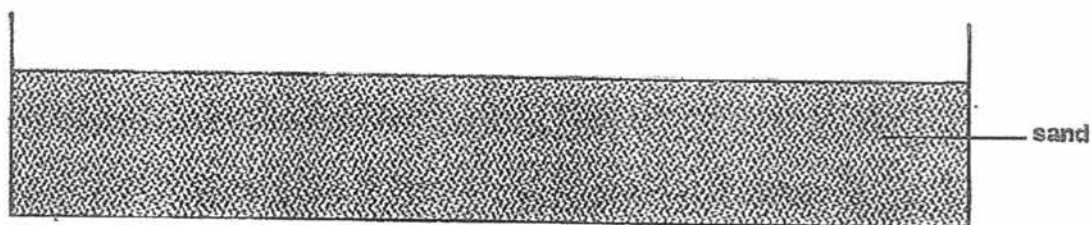
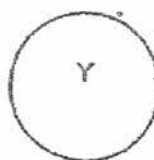
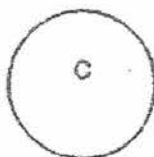
SCORE	3
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37. Andrew released three identical steel balls, X, Y and Z from three different heights onto a tray of sand. The diagram below shows the depressions made by the three iron balls after they were released.



- (a) Based on the diagram above, arrange the steel balls, X, Y and Z, based on the height they were released from the highest to the lowest. [1]

Andrew bought a styrofoam ball, C, of the same size as the steel balls. He dropped balls C and Y from the same height.

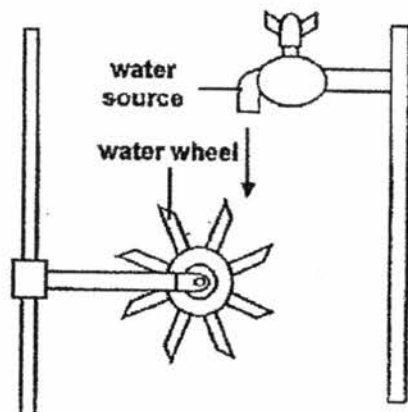


- (b) What would Andrew observe? Explain your answer. [1]

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SCORE	
	2

38. Dominic set up an experiment using a water source and a water wheel as shown in the diagram below.



- (a) Without adding or replacing any of the items above, state two methods for Dominic to increase the speed at which the water wheel turns. [2]

Method 1:

Method 2:

- (b) Name the main form of energy the spinning water wheel has as it turns. [1]

End of Paper

SCORE	3
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EXAM PAPER 2017 (P5)

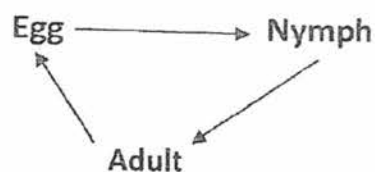
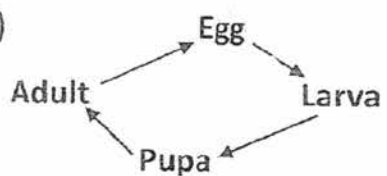
SCHOOL : ACS

SUBJECT : SCIENCE

TERM : SA2

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

26)a)



b) They resemble each other.

c) Larva. The larva is growing bigger.

27)a) A, C, B, D

b) Air, Water, Warmth

c)  seed leaf

28)a)Dimples and detached ear lobes.

b)Straight black hair.

29)a)A: Gas B: Liquid

b)The water had gained heat from the fire and had evaporated into water vapour.

c)When the water vapour touches the cooler underside of the metal tray the water vapour loses heat and condenses into water droplets.

d)Add ice into petri dish X, the lower the temperature of water in petri dish X the faster the rate of condensation.

30)a)X.

b)The amount of exposed surface area.

c)The mass of towel in set-up Z after 8 hours is incorrect. The mass of the towel after 8 hours cannot be the same as the mass of the towel at the beginning of the towel after 8 hours must be less than that at the beginning of the experiment.

31)a)R. As glass is a non-magnetic material, it will not respond to any magnet like shown in the table.

b)Steel. It did not get repelled by the magnet but got attracted, steel is a magnetic material and it will only get attracted.

c)P and S. Only magnets can repel each other when their like poles are facing each other.

32)a)B: Gullet E: Small intestine

b)Digestive juices. It breaks down food into simpler substances faster.

c)It is to absorb all the water from the undigested food.

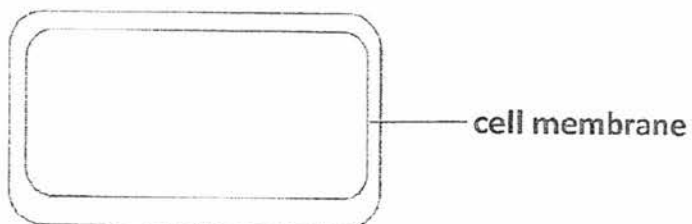
33)a)When the weight lifts he will breath in the air from the surroundings the air will be sent to the lungs, the lungs will then be absorbed , it will then be sent to the heart the heart will pump the oxygenated blood to the arms.

b)Oxygen and water.

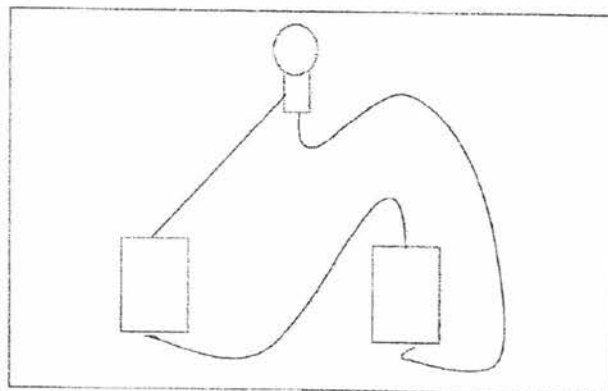
34)a)A and C. Only plants cell wall other one does not have cell wall.

b)C.

c)



35)a)



i)Nothing will happen, bulb 2 and 3 will still be lit up.

ii)He can fix a switch beside every bulb.

36)a)

	Lost heat	Gain heat	Temperature increases	Temperature decreases
Water in A		✓	✓	
Water in B	✓			✓

b)To find out which material is a better conductor of heat.

36)c)

✓
✓
✓

37)a)Y ,X, Z

b)Ball Y mad a deeper depression than ball C, hence more potential energy is converted into kinetic energy.

38)a)1)Turn the water source more so that more water could flow out.

2)Place the water source higher.

b)Kinetic energy.