PRIMARY 5 END-OF-YEAR EXAMINATION 2016

Name : _____ ( )

Class : Primary 5 ( )

Parent's Signature : _____

Date: 25 October 2016

Time: 8.00 a.m. – 9.30 a.m.

Marks: _____ / 44

SCIENCE

BOOKLET A

INSTRUCTIONS TO CANDIDATES

Write your name, class and register number.

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

Follow all instructions carefully.

Answer all questions.

Part I

For each question from 1 to 22, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4) and shade your answer on the Optical Answer Sheet.

(44 marks)

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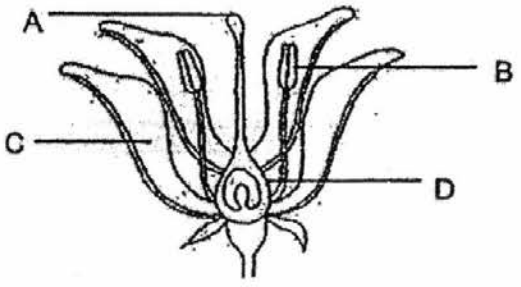
1. Linda stated that the flower below is pollinated by an insect and not by wind.



Which one of the following characteristics supports her statement?

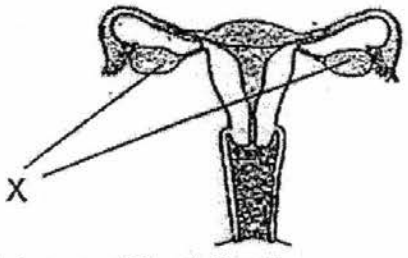
(1) Part C is not brightly coloured.

(2) Part B produces pollen grains.

(3) Part D swells after fertilization.

(4) Part A and B are within the flower.

2. Study the diagram of the human reproductive system below.



Which one of the following occurs at X?

(1) Release of eggs

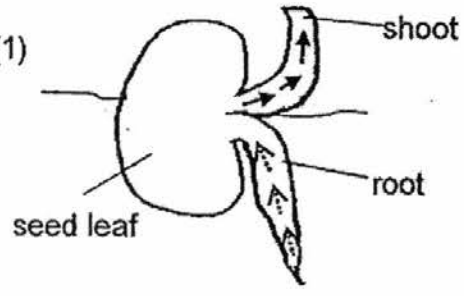
(2) Production of sperms

(3) Fusion of sperm and egg

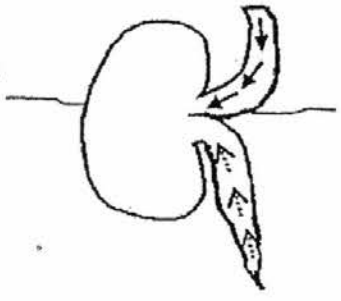
(4) Development of unborn baby

3. Which diagram shows the correct movement of food (⟶) and water (⇢) in a germinating seed?

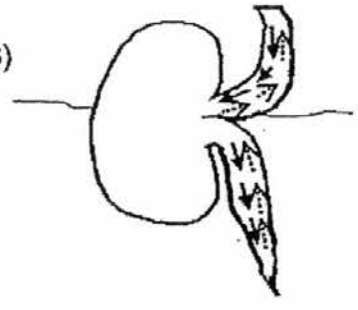
(1)



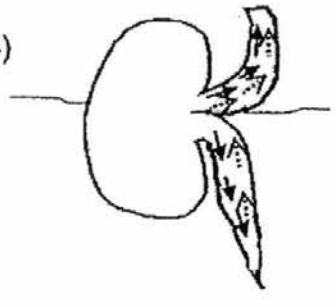
(2)



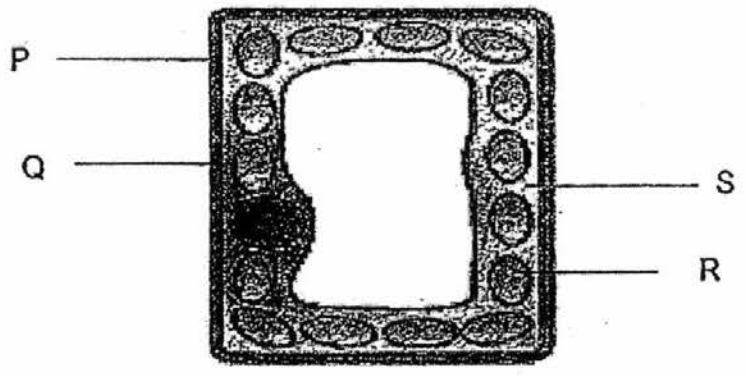
(3)



(4)



4. The diagram shows a plant cell.



Which two parts shown above are found in a plant cell but not in an animal cell?

(1) Q and R

(2) P and R

(3) Q and S

(4) R and S

5. Read the information below carefully.

- Grasshopper feeds on grass.
- Frog feeds on grasshopper.
- Snake feeds on frog.

Which one of the following is definitely true about the energy transfer stated in the above box?

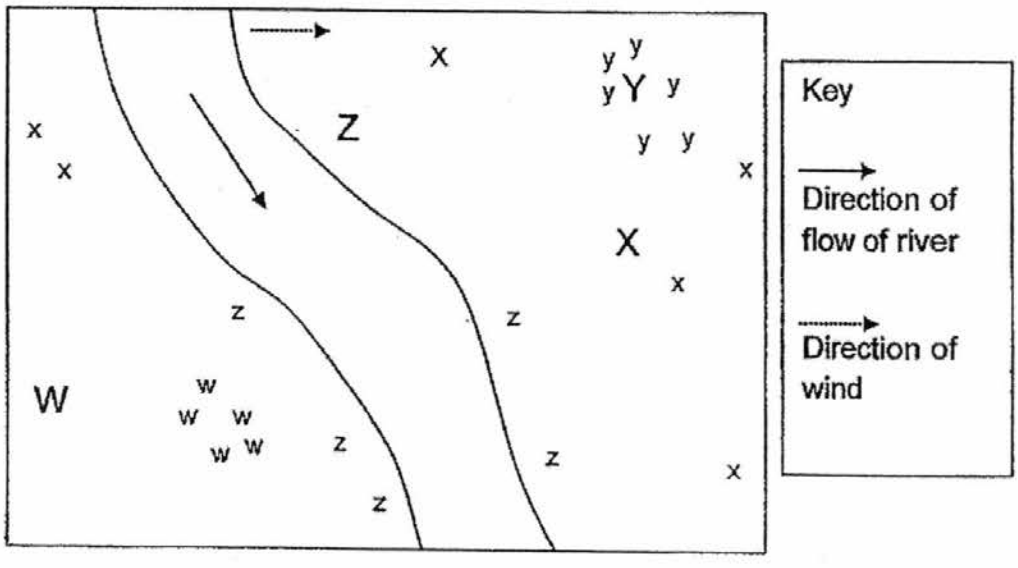
(1) The grass gets its food from the Sun.

(2) The grasshopper gets its energy from the frog.

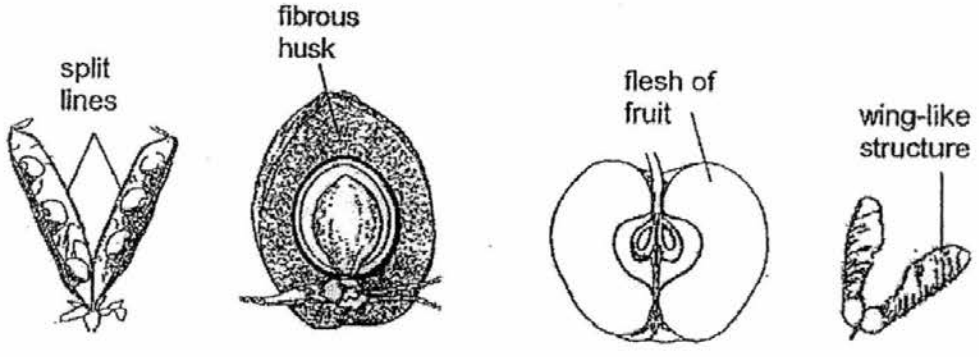
(3) The frog is the source of energy for the snake.

(4) The snake feeds on the frog and the grasshopper.

6. Jim drew a map of the locations of where parent plants (W, X, Y, Z) and their young plants (w, x, y and z) of a plot of land are found.



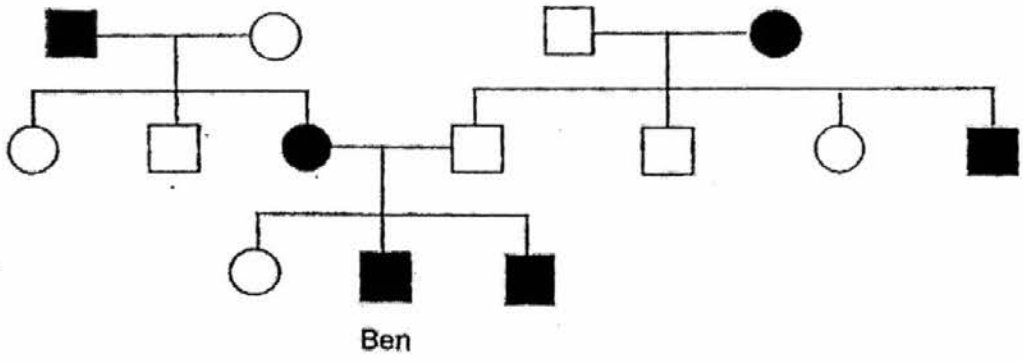
The following are the fruits of Plants W, X, Y and Z.



Which of the following matches the above fruits to W, X, Y and Z most correctly?

	W	X	Y	Z
(1)	Fruit D	Fruit B	Fruit A	Fruit C
(2)	Fruit D	Fruit B	Fruit C	Fruit A
(3)	Fruit A	Fruit D	Fruit C	Fruit B
(4)	Fruit D	Fruit C	Fruit A	Fruit B

7. Study the family tree of Ben below.



Key

- male with characteristic X
- female with characteristic X
- male without characteristic X
- female without characteristic X

Which one of the following statements about the family tree is correct?

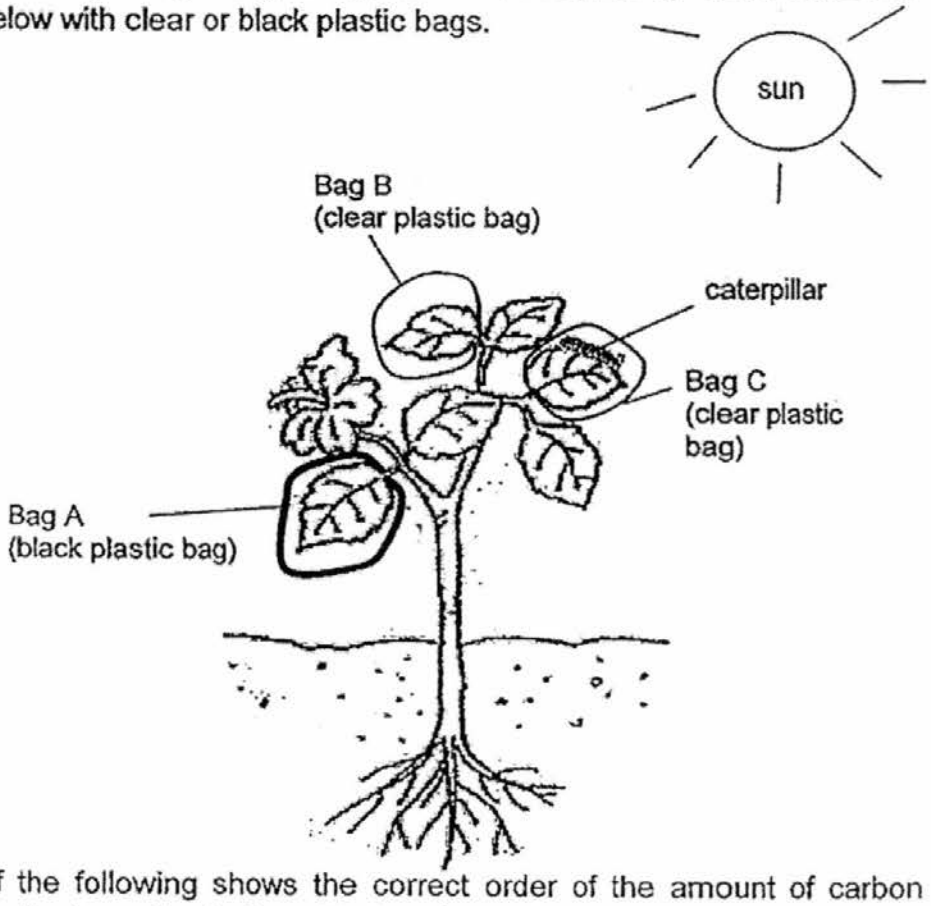
(1) Ben's parents have characteristic X.

(2) Both of Ben's grandfathers do not have characteristic X.

(3) Both Ben and his brother do not have characteristic X.

(4) Ben's father has a brother who has characteristic X.

8. Leonard has a plant growing in a garden. He wrapped up some leaves as shown below with clear or black plastic bags.



Which of the following shows the correct order of the amount of carbon dioxide in the bags, beginning with the least to the greatest amount after an hour ?

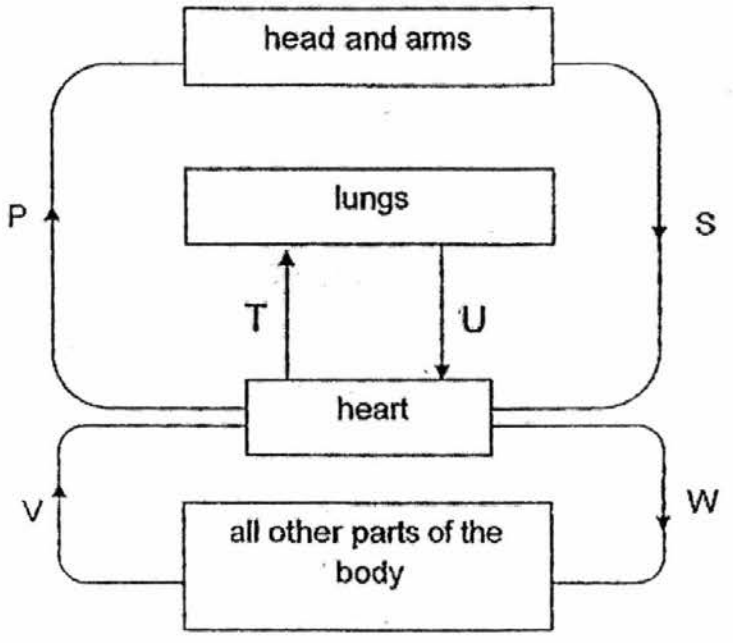
(1) B, C, A

(2) C, B, A

(3) A, C, B

(4) B, A, C

9. The diagram below shows the direction of blood flow in some parts of a human body.



Which blood vessels carry blood rich in carbon dioxide?

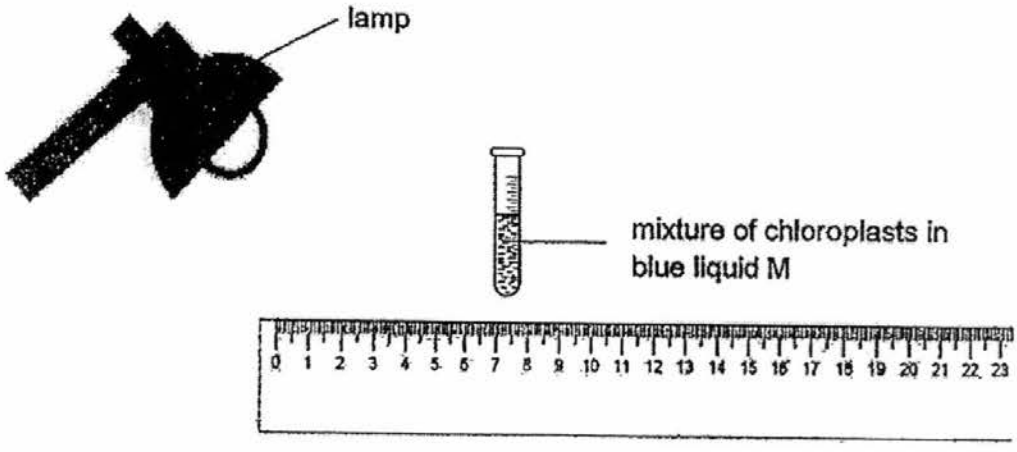
(1) P, U and W only

(2) P, U and V only

(3) S, T and W only

(4) S, T and V only

10. Zoe had three tubes, A, B and C, each containing an equal amount of chloroplasts and a blue liquid M which turns green after a certain amount of oxygen is produced during photosynthesis.



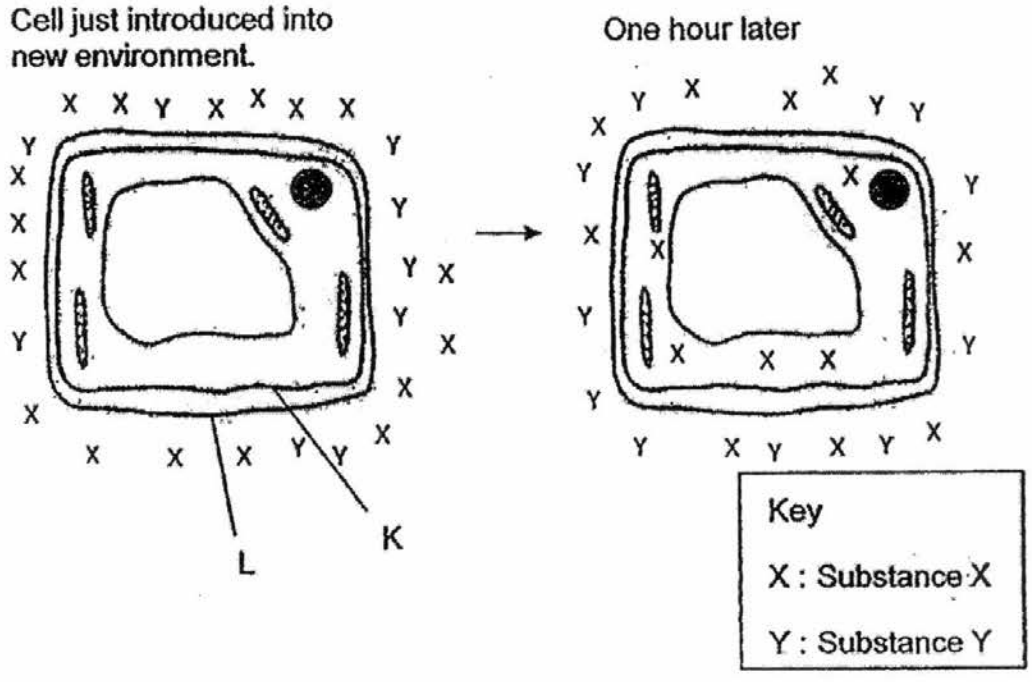
She placed the tubes at various distances from a lighted lamp as shown in the table below.

Tubes	A	B	C
Distance from lamp (cm)	10	30	20

Which of the following is most likely the time taken for the mixture to turn green for tubes A, B and C?

	Time taken for the mixture to turn green (s)		
	A	B	C
(1)	6	40	25
(2)	6	25	40
(3)	25	40	6
(4)	40	25	6

11. The diagram below shows what happened before and after a plant cell is placed in a container filled with substances X and Y.



Read the statements below.

A: Part L stops Substance X from entering the cell.

B: Part K stops Substance Y from entering the cell.

C: Part K maintains the shape of the cell.

Which of the above statement(s) is/are true about the cell shown?

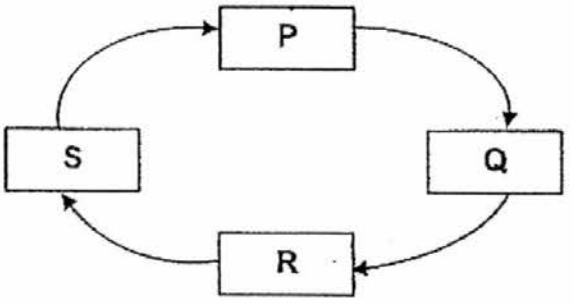
(1) B only

(2) A and B only

(3) B and C only

(4) A, B and C

12. Each letter in the diagram below represents a stage in the life cycle of a butterfly.



Which of the following statements are true about the butterfly if Q represents the adult stage?

A At Stage R, it has developed wings.

B At Stage S, it moults several times as it grows.

C At Stage Q, it spends most of its time eating and growing in size.

D At Stage P, it does not eat and does not move around from place to place.

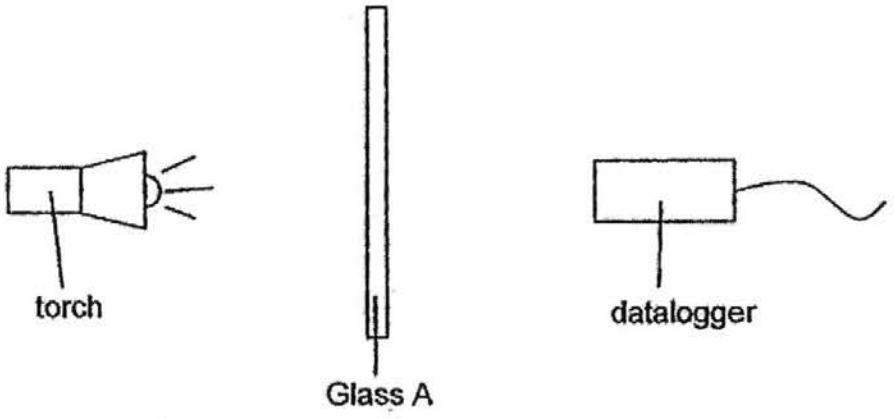
(1) A and B only

(2) A and C only

(3) B and D only

(4) C and D only

13. Hanming set up the experiment below to find out how much light can pass through Glass A.



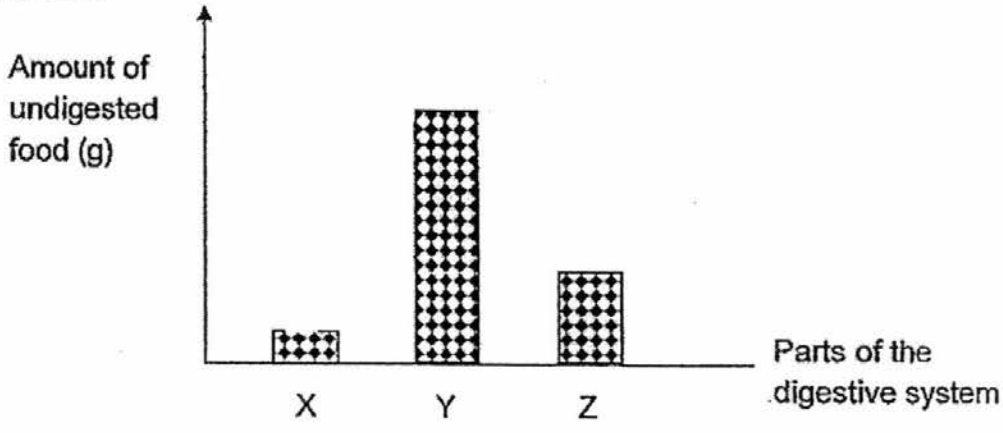
He repeated the experiment by replacing Glass A with Glass B and then Glass C. The results of the experiment are shown in the table below.

Type of Glass	Amount of light received (units)
A	0
B	65
C	28

Which type of glass is most suitable to make the lens of a pair of reading glasses and a pair of sunglasses?

	Lens of reading glasses	Lens of sunglasses
(1)	A	A
(2)	B	A
(3)	B	C
(4)	C	B

14. The graph below shows the amount of undigested food in different parts of the human digestive system just before it travels to the next part of the system.



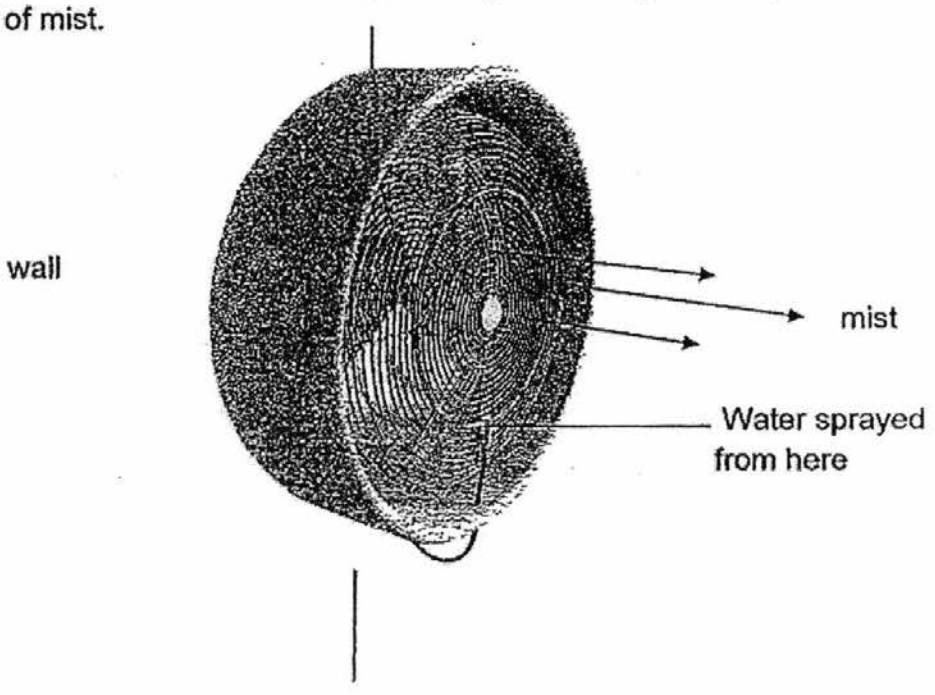
Which one of the following correctly identifies parts X, Y and Z?

	X	Y	Z
(1)	gullet	small intestine	stomach
(2)	large intestine	gullet	stomach
(3)	mouth	large intestine	small intestine
(4)	stomach	mouth	large intestine

15. Substance A is a solid at 40°C and a liquid at 220°C. Which of the following show a possible melting point and boiling point of Substance A?

	Melting point of A (°C)	Boiling point of A (°C)
(1)	30	150
(2)	30	250
(3)	50	150
(4)	50	250

16. The diagram below shows a mist fan found in open air cafes. These fans are used to cool the surrounding air. Tiny water droplets are produced in the form of mist.



Which of the following correctly explains why the mist from the fan cool the surrounding air more effectively?

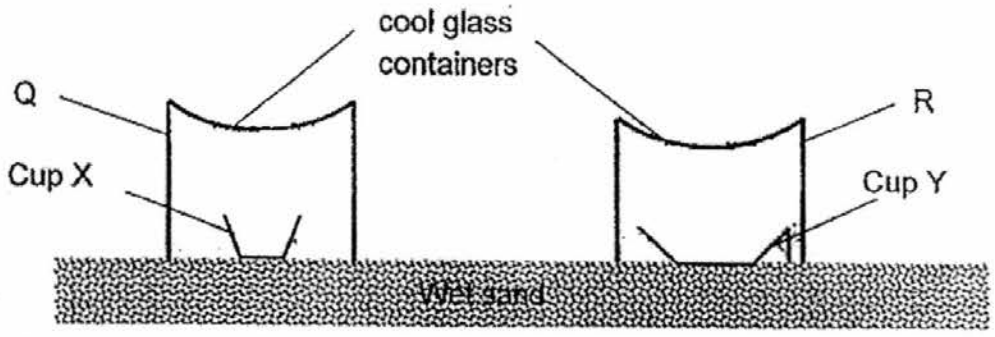
(1) The water vapour loses heat to the wind and condenses.

(2) The water vapour gains heat from the wind and evaporates.

(3) The water droplets lose heat to the surrounding air and evaporate.

(4) The water droplets gain heat from the surrounding air and evaporate.

17. On a sunny day, Shane set up the following experiment at a part of the wet sand on the beach shown below.



Which of the following will happen after 2 hours?

(1) Cup Y will have more water than Cup X.

(2) There will be less water vapour within Container Q than Container R.

(3) There will be an equal amount of water collected in Cup X and Cup Y.

(4) There will be more water droplets on the inner surface of Container Q than Container R.

18. Mei Ling wants to find out if the temperature of water affects the rate of evaporation of water.

Set-up	Exposed surface area of water (cm^2)	Volume of water (ml)	Temperature of water (°C)	Presence of wind
A	150	200	28	present
B	80	250	28	absent
C	150	200	52	present
D	80	250	52	present

Which two set-ups must she use?

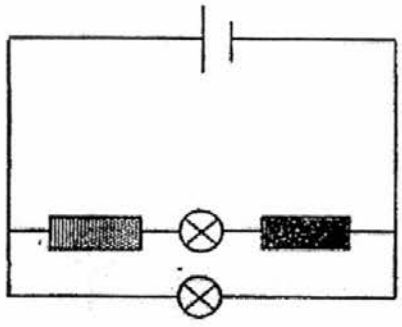
(1) A and B

(2) A and C

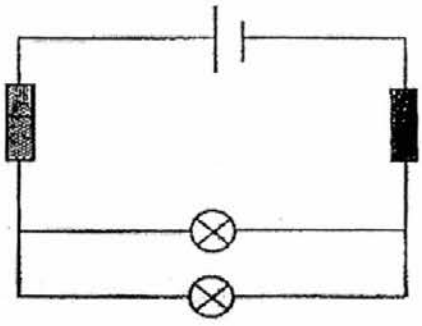
(3) B and D

(4) C and D

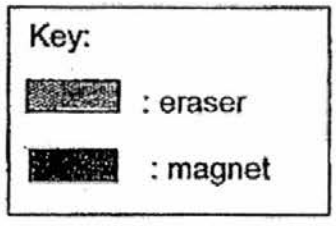
19 Each of the circuits below has a magnet and an eraser.



Circuit A



Circuit B



Which of the above circuit(s) would have at least one bulb lighting up?

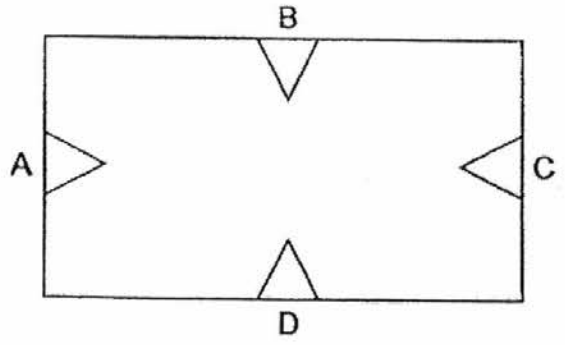
(1) A only

(2) B only

(3) Both A and B

(4) None of the circuits

20. The diagram below shows a circuit card. Four steel paper clips, A, B, C and D, are used to secure the wires onto the card.

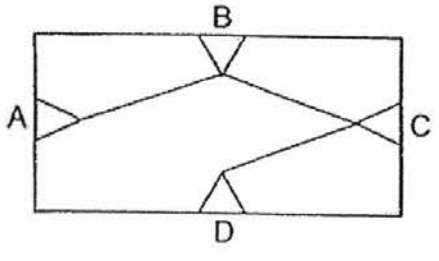


A ciucuit tester is connected to two of the paper clips at a time. The results are recorded below.

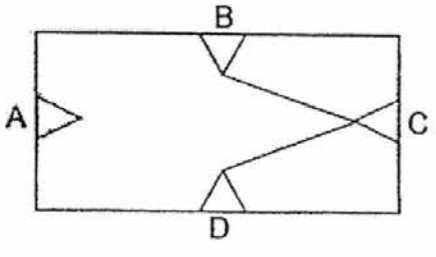
Paper clips tested	Does the bulb of the circuit tester light up?
A and B	No
A and C	Yes
B and C	No
B and D	No
C and D	Yes

Which one of the following shows the correct connection of wires on the underside of the circuit card?

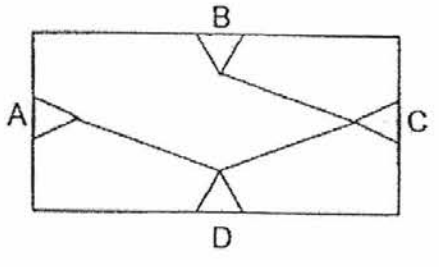
(1)



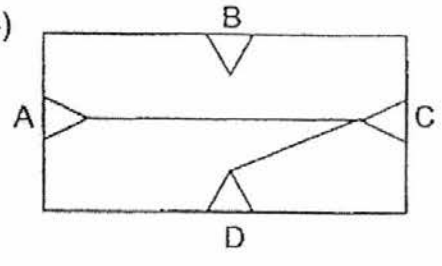
(2)



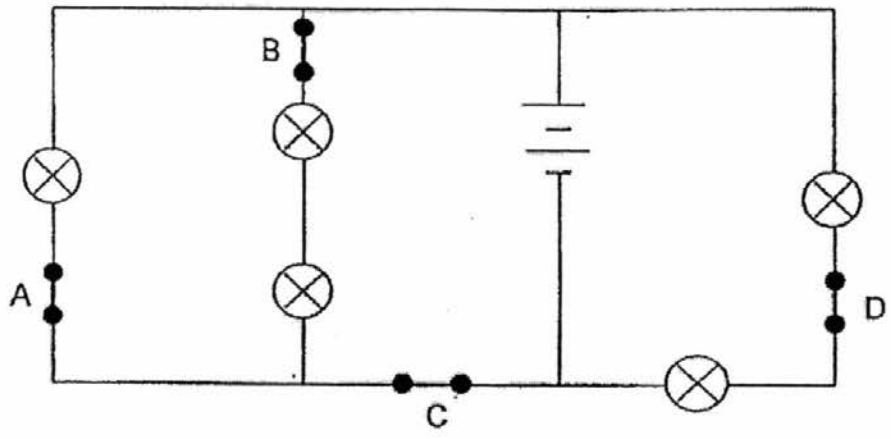
(3)



(4)



21. Jamil set up a circuit as shown.



All the five bulbs were lit when all the four switches were closed.
He wanted the fewest number of bulbs to be lit by opening only one switch.
Which switch should she open?

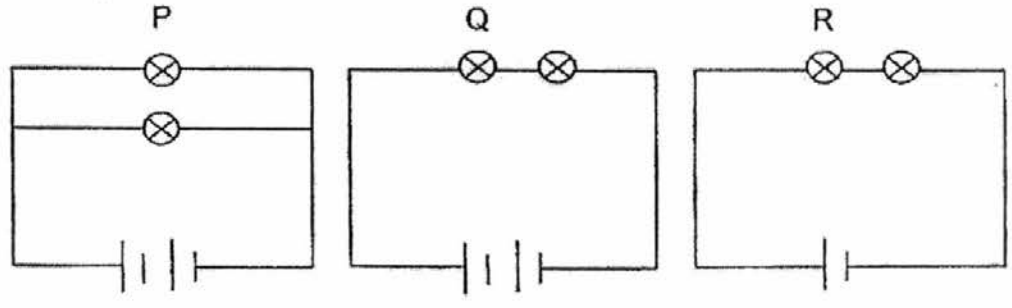
(1) A

(2) B

(3) C

(4) D

22. The diagram below shows three circuits with different arrangements of identical batteries and bulbs. The bulbs in all three circuits light up.



Arrange the bulbs, P, Q and R, in the order of brightness, starting with the brightest bulb.

(1) R, Q, P

(2) P, Q, R

(3) Q, P, R

(4) R, P, Q

End of Booklet A

TAO NAN SCHOOL 道南学校

SINCERITY & PERSEVERANCE

PRIMARY 5 END-OF-YEAR EXAMINATION 2016

Name : _____ ( )

Class : Primary 5 ( )

Parent's Signature : _____

Date: 25 October 2016

Time: 8.00 a.m. – 9.30 a.m.

SCIENCE

BOOKLET B

INSTRUCTIONS TO CANDIDATES

Write your name, class and register number.

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

Follow all instructions carefully.

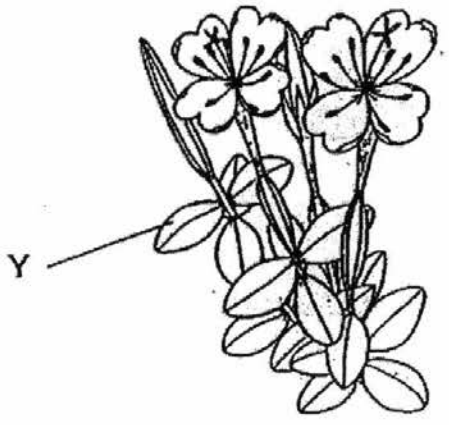
Answer all questions.

Booklet A	44
Booklet B	36
Total	80

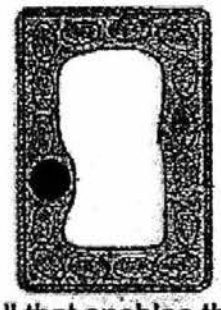
Booket B (36 marks)

For questions 23 to 34, write your answers clearly in the spaces provided.

23. The diagram below shows a flowering plant.



Michael observed some cells he took from part Y in a microscope. He drew a cell as shown.



(a) Label the part of the cell that enables the plant to make food. [1]

(b) How does the part in (a) help the cell to make food? [1]

_____

_____

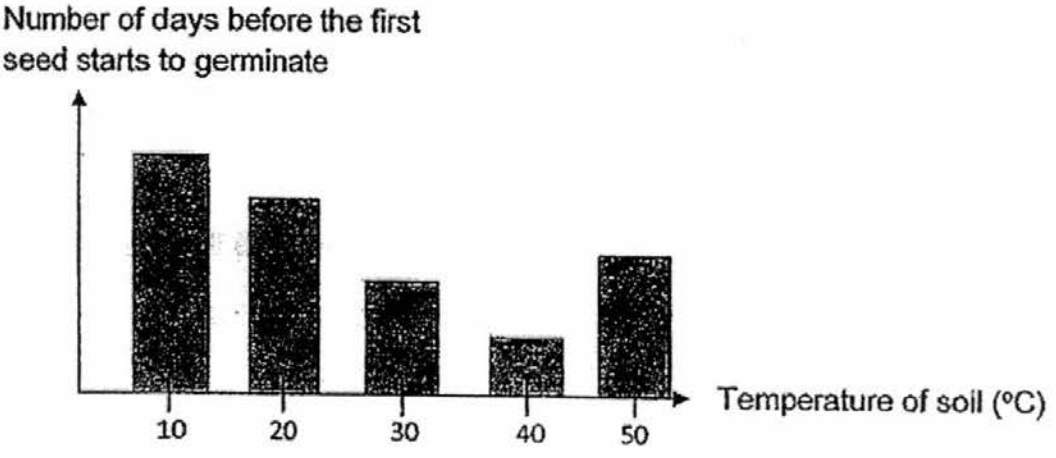
(c) Michael's plant produces fruits with many tiny seeds. One day, he noticed a bird feeding on the fruit and swallowing the tiny seeds. Explain how this action benefits the plant? [1]

_____

_____

Score	/3

24. Farmer Tan conducted an experiment to investigate how the temperature of soil affects the germination of seeds.



(a) Besides oxygen, state two other conditions required for seeds to germinate. [1]

_____

(b) Based on the graph above, state the temperature that causes the seeds to germinate the earliest. [1]

_____

(c) Based on the graph above, when the temperature of soil is below 40°C, what can Farmer Tan conclude between the temperature of the soil and the time needed for the germination of seeds? [1]

_____

_____

Score	
	3

25. Esther put three female birds in a big cage. Every few weeks, she would find eggs in the cage. However, none of the eggs hatched.

(a) Give a possible reason why none of the eggs hatched. [1]

_____

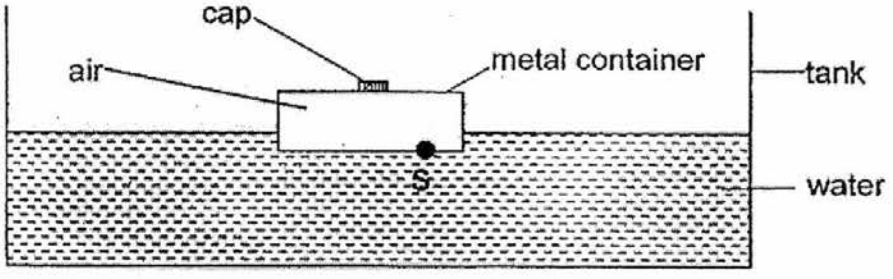
_____

(b) What should Esther do to ensure that she would have eggs that hatch into chicks? [1]

_____

_____

26. Chloe placed an empty sealed metal container into a tank of water as shown below. She made a hole on the metal container at S.



(a) Chloe wanted the metal container to sink. Describe what she could do to the set-up to make the container sink. [1]

_____

_____

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

_____

_____

Score	
	4

27. John fixed a heart rate monitor onto his arm to measure his heart rate in number of beats per minute (bpm) during his jog.

(a) John noticed that his heart rate increased after he started jogging. Explain why his heart rate increased. [2]

(b) In a human, oxygen is absorbed by the red blood cells in the blood at the lungs. John's sister has a blood condition, where the number of red blood cells are far fewer than a normal person. Compare the amount of oxygen John's sister could absorb at the lungs with that of a normal person. [1]

Score	/3

28. Amelia set up an experiment as shown below.

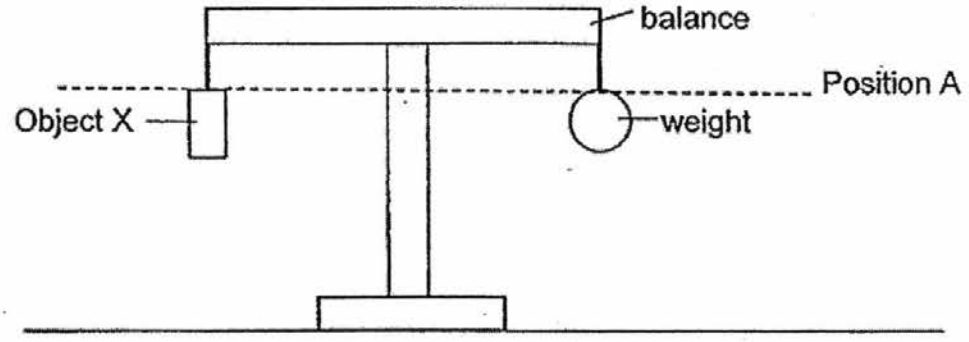


Diagram 1

When Object Y was placed below Object X, Object X moved upwards and the balance tilted as shown in Diagram 2.

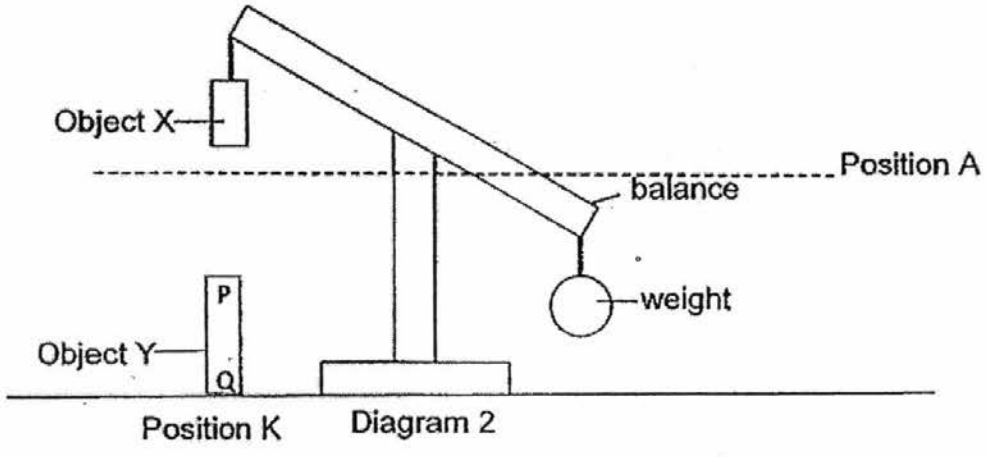


Diagram 2

(a) Based on the information above, identify what Object X and Object Y could be. [1]

_____

_____

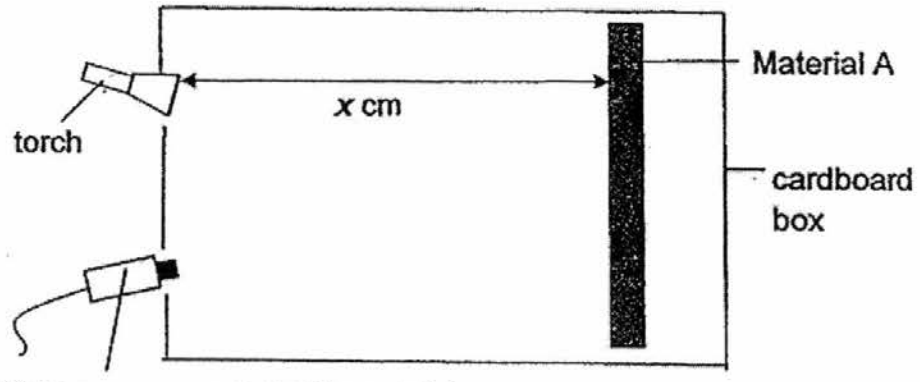
(b) Describe what Amelia could do to the Object Y (ensuring that Object Y is still at Position K) such that the weight could move upwards above Position A. [1]

_____

_____

Score	/ 2

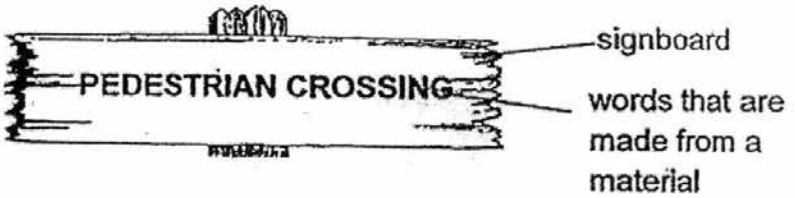
29. Haslinda wanted to investigate which material, A, B and C, reflects the most light. She set up her experiment as shown below. The distance between the material and the torch is indicated as x cm.



She recorded her results for Materials, A, B and C, in the table below.

Material	Reading on Datalogger (Units)
A	20
B	60
C	35

Haslinda wanted to use a material for the words of a signboard on a road for motorists to see well in the dark.



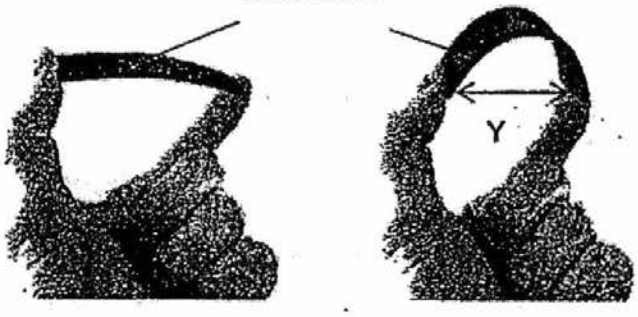
(a) Based on Haslinda's results, which material, A, B or C, should she use? Give a reason for your answer. [2]

(b) Explain why Haslinda should not use a clear glass box for the experiment above. [1]

Score 3

30 Devi held onto Material P and bent it as much as she could as shown below and recorded Distance Y. She repeated the experiment for Material Q and then Material R, which were of similar length and thickness.

Material P



Her results are shown in the table below.

Material	Distance Y (cm)
P	9
Q	7
R	1

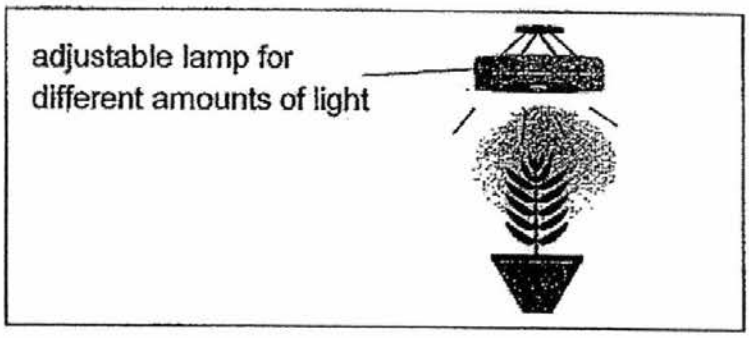
(a) What was Devi trying to test? [1]

Devi wants to make an exercise mat that can be easily rolled up for storage as shown below.

(b) Based on her results above, which material (P, Q or R) is best for Devi to use to make the exercise mat above? Explain your choice. [1]

Score / 2

31. Sylvia carried out an experiment to find out how the height of four similar plants is affected by the amount of light.



The four plants, A, B, C and D were placed in different enclosed dark room and exposed to different amount of light for three weeks as shown above. All other variables were kept the same. The results were recorded in the table below.

Plants	Amount of light (unit)	Height of the plants (cm)	
		Start of the experiment	End of the experiment
A	5	5.2	7.6
B	10	5.5	8.1
C	15	5.0	7.8
D	25	5.3	8.6

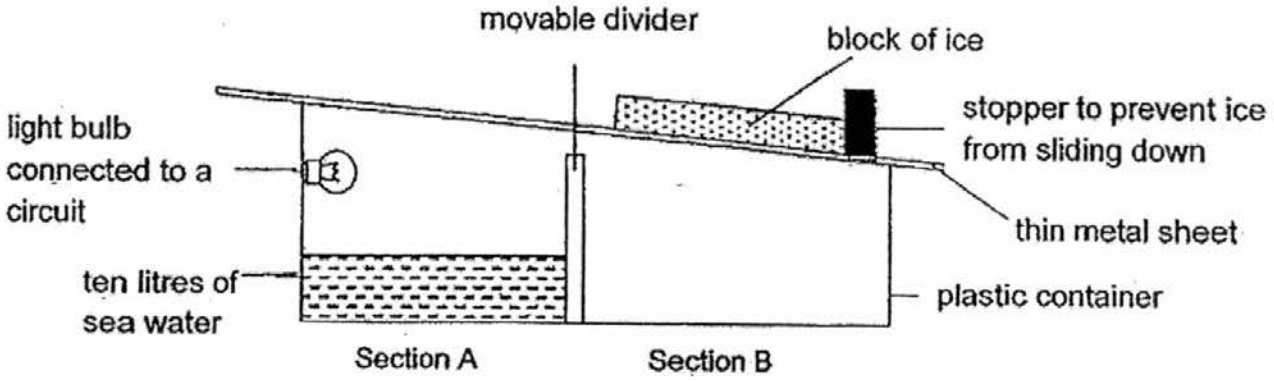
(a) How would the amount of light affect the height of the plant in the experiment above? [1]

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

(c) Suggest one way how the above experiment can be improved to ensure reliable results. [1]

Score	
	3

32 Meilin set up the experiment as shown below.



When she switched on the electric light bulb, three litres of water was collected in Section B of the plastic container after three hours.

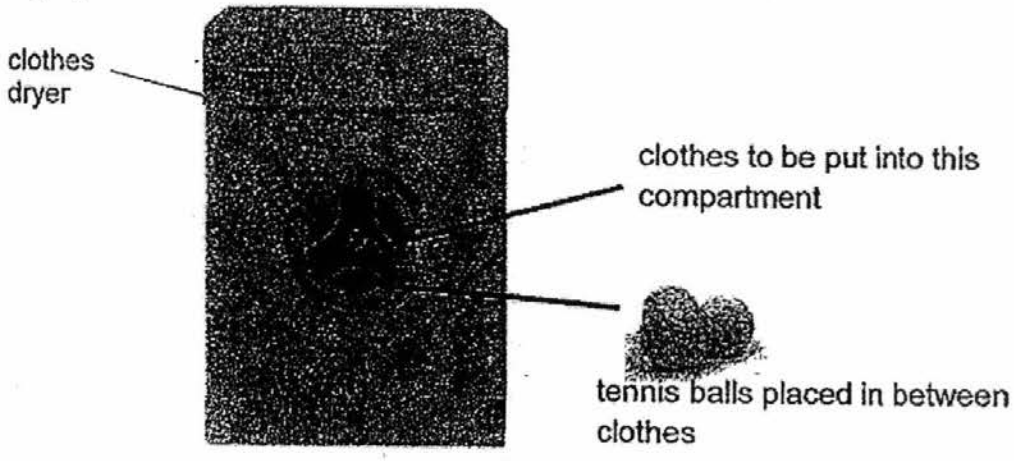
(a) Explain the purpose of the light bulb. [2]

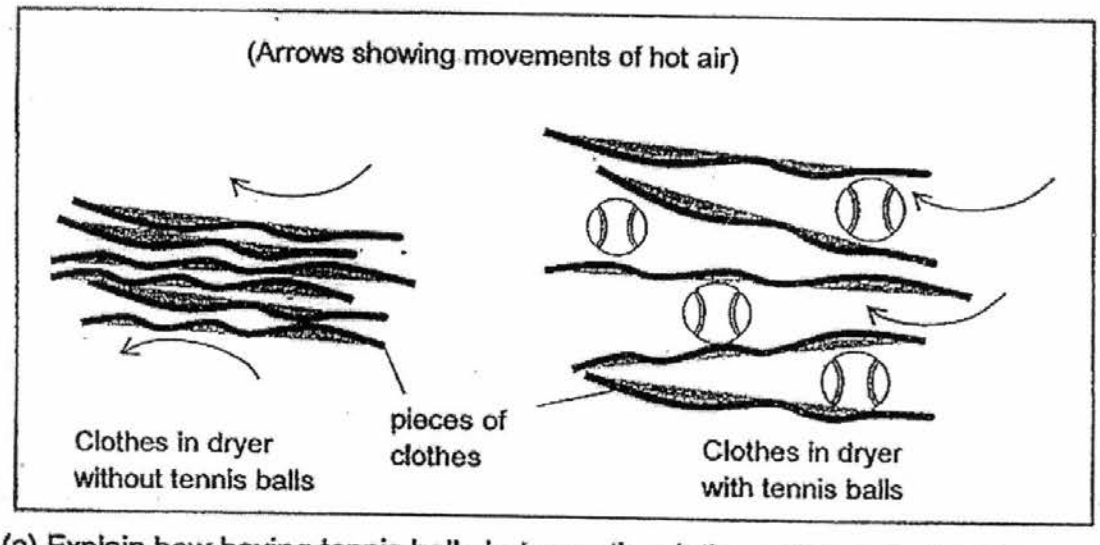
(b) How will increasing the intensity of light given off by the light bulb affect the amount of water collected in Section B? [1]

(c) Explain your answer in (b). [2]

Score	/5

33. A clothes dryer is a machine used to tumble dry wet clothes using hot air. Mandy added tennis balls in between her wet clothes in the dryer to shorten the drying time.





(a) Explain how having tennis balls between the clothes will help to shorten the drying time of the wet clothes in the clothes dryer. [2]

_____

_____

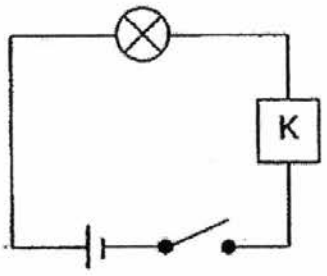
(b) There is a fan built in the dryer that blows hot air at the wet clothes. Mandy is able to adjust the fan speed of the dryer. How will increasing the fan speed affect the time taken for the clothes to dry completely? [1]

_____

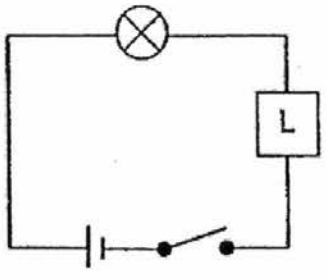
_____

Score	3

34. Randy set up 2 similar circuits using identical bulbs, batteries and objects, K and L, as shown below. The objects, K and L, are of the same size but made of different materials.



Circuit A



Circuit B

He made the following observations when the switches of both circuits were closed at the same time.

Circuit	Observation
A	Bulb lighted up.
B	Bulb did not light up.

(a) Based on the observations made by Randy, state a difference in property between Object K and Object L. [1]

_____

_____

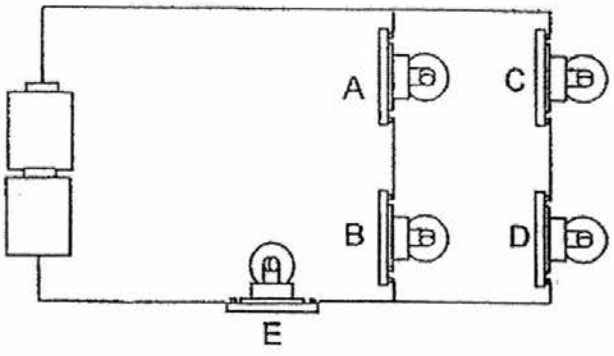
(b) Randy added four more batteries to circuit A. The bulbs and batteries were in good working condition. When the switch was turned on, the bulb in circuit A glowed very brightly for a few seconds and then did not light up after that. State what had happened to the bulb. [1]

_____

_____

Score	/ 2

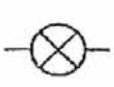
Randy set up another circuit shown below with identical bulbs, bulb holders and batteries.



(c) Randy removed one of the above bulbs from its bulb holder and none of the rest of the bulbs remain lit. Which bulb did he remove? [1]

_____

(d) Randy wants all the bulbs, A, B, C, D and E, to light up the brightest. Rearrange the electrical circuit using all of the electrical components shown above. Using the symbols given below, draw the correct circuit diagram in the box provided. [2]


bulb


a battery

wire

Score	/ 3

End of Booklet B

EXAM PAPER 2016 (P5)

SCHOOL : TAO NAN

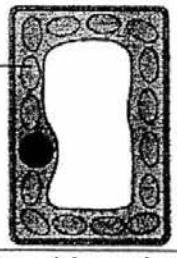
SUBJECT : SCIENCE

TERM : SA2

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

SA 2 SCIENCE
ANSWER KEY

Section B

Qn	Answer
23a	chloroplast 
b	The chloroplast contains chlorophyll that traps sunlight for the plants to make food.
c	The birds help in the dispersal of seeds, hence preventing overcrowding.
24a	Water and warmth
b	40°C
c	As the temperature of the soil increases, the time needed for the germination of th seeds decreases. (faster/slower ✗)
25a	There are no male birds to fertilise the eggs.
b	She should put male birds in the cage.
26a	Remove the cap
b	Air can escape from the container so that the water can occupy the space originally occupied by the air.
27a	His heart has to send more digested food/ oxygen to all parts of his body to release more energy.
b	Less oxygen is absorbed at the lungs. (not speed! talking about amount!)
28a	They are magnets.
b	She can turn Object Y over such that Q is facing upwards and P is on the table.
29a	Material B. Material B reflects the **most** light so the drivers can see the words most **clearly**.
b	Glass box is transparent / allows (most) light to pass through it. The light from the surroundings will affect results of experiment.
30a	She was testing on the flexibility of the materials.

b	Material R. Material R is the most flexible materials.
31a	As the amount of light increases, the height of the plant increases. *height / length* NOT SPEED
b	Increasing the intensity of light causes the rate of photosynthesis to increase to make more food for growth.
c	Repeat the experiment a few more times.
32a	The light bulb provides heat for the water to evaporate.
b	The amount of water collected will increase.
c	The sea water now gains **more** heat (1m). Rate of evaporation **increases/ more** water vapour is formed (1/2m). The water vapour will condense. (1/2m)
33a	The tennis balls increase the exposed surface area of the clothes to ~~the heat~~ hot air, thus increasing the rate of evaporation of water from the clothes.
b	The time taken for the clothes to dry completely will decrease. (time, not speed)
34a	Object K is an electrical conductor and Object L is an electrical insulator.
b	The bulb has fused.
c	Bulb E
d