RAFFLES GIRLS' PRIMARY SCHOOL

PRACTICE PAPER 2020

Section A	/56
Section B	/44
Your score out of **100** marks	
Parent's signature	

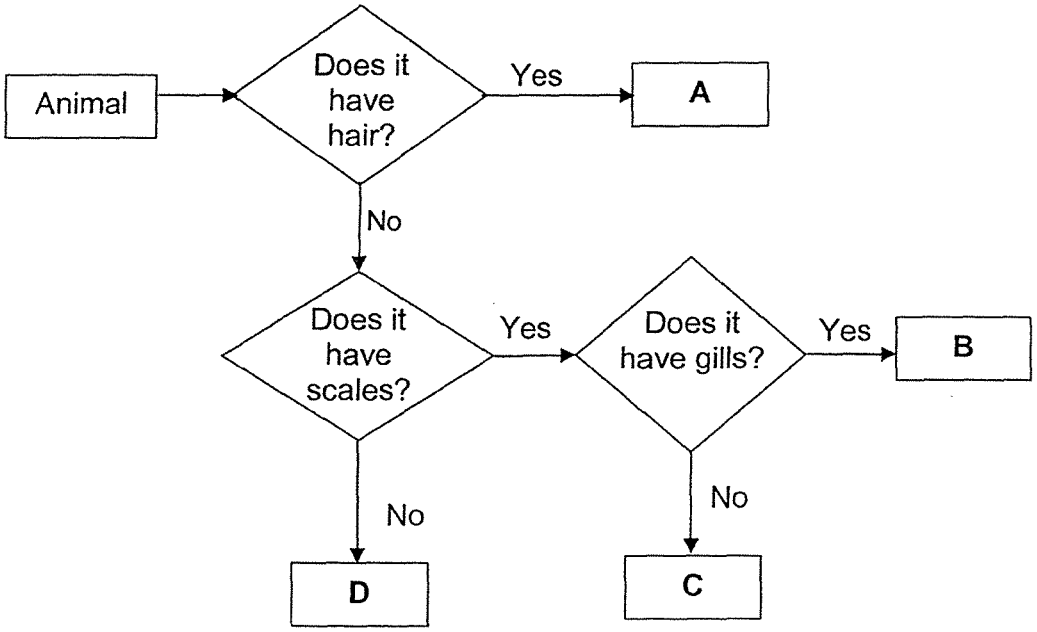
Name : _____ **Index No:** ____ **Class: P6** ___

18 June 2020 **SCIENCE** **Attn: 1h 45min**

SECTION A (28 X 2 marks)

For each question from 1 to 28, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval on the Optical Answer Sheet.

1. Study the flow chart below.

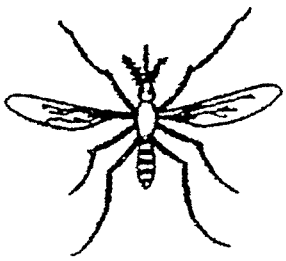


Which one of the following is classified correctly?

	A	B	C	D
(1)	reptile	fish	amphibian	bird
(2)	mammal	amphibian	fish	reptile
(3)	insect	reptile	mammal	bird
(4)	mammal	fish	reptile	bird

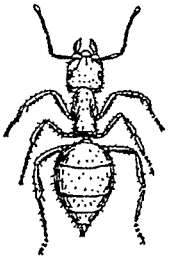
2. Which one of the following animals is **not** an insect?

(1)

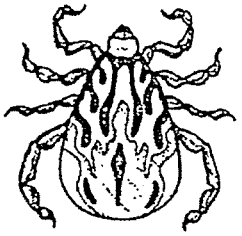


(2)

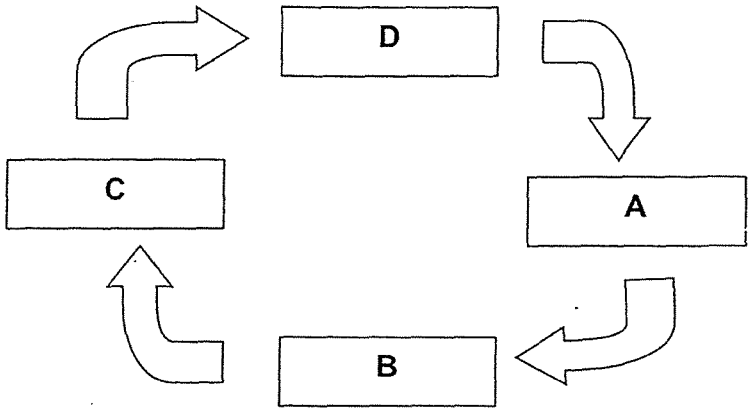
(3)



(4)



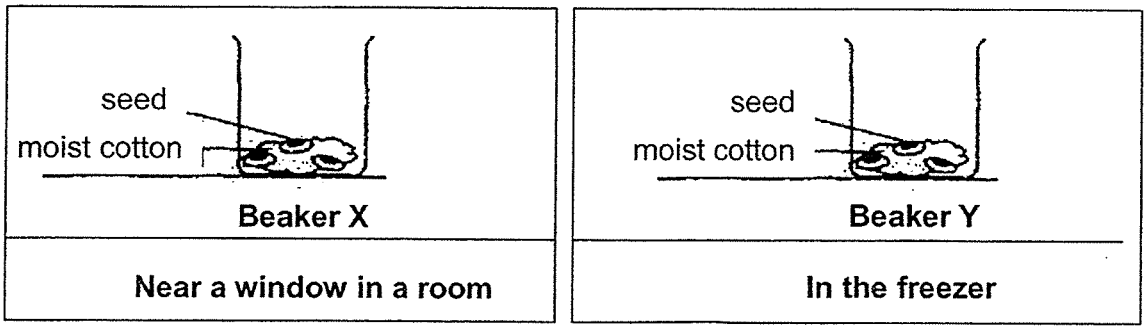
3. A, B, C and D are the stages of the life cycle of an insect.



At stage A, it does not feed, move or moult.
Which one of the following represents the stages of the life cycle of the insect?

	A	B	C	D
(1)	egg	larva	pupa	adult
(2)	adult	egg	larva	pupa
(3)	pupa	adult	egg	larva
(4)	larva	pupa	adult	egg

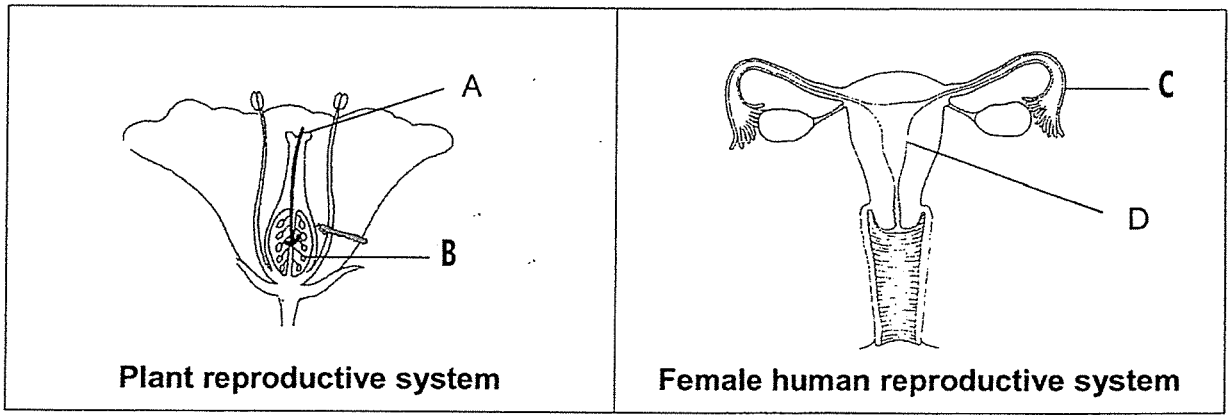
4. Kumar placed an equal number of seeds of the same type in two identical beakers. Each beaker was exposed to different set of conditions as shown below.



Kumar observed that the seeds in one of the beakers had germinated.
Which one of the following explanations of Kumar's observation is correct?

	Beaker	Observation	Explanation
(1)	X	Seeds germinated.	Air, water and sunlight were present.
(2)	X	Seeds germinated.	Air, water and warmth were present.
(3)	Y	Seeds did not germinate.	Light was absent.
(4)	Y	Seeds did not germinate.	Only water and warmth were present.

5. The diagrams below show the plant and female human reproductive systems.



Which one of the following correctly identifies the parts where fertilisation takes place in the plant and human reproductive systems?

	Plant Reproductive System	Human Reproductive System
(1)	A	C
(2)	A	D
(3)	B	C
(4)	B	D

6. The statements below describe the process of fertilisation at different stages.

A The nuclei fuse.

B A sperm enters the egg.

C The fertilised egg divides.

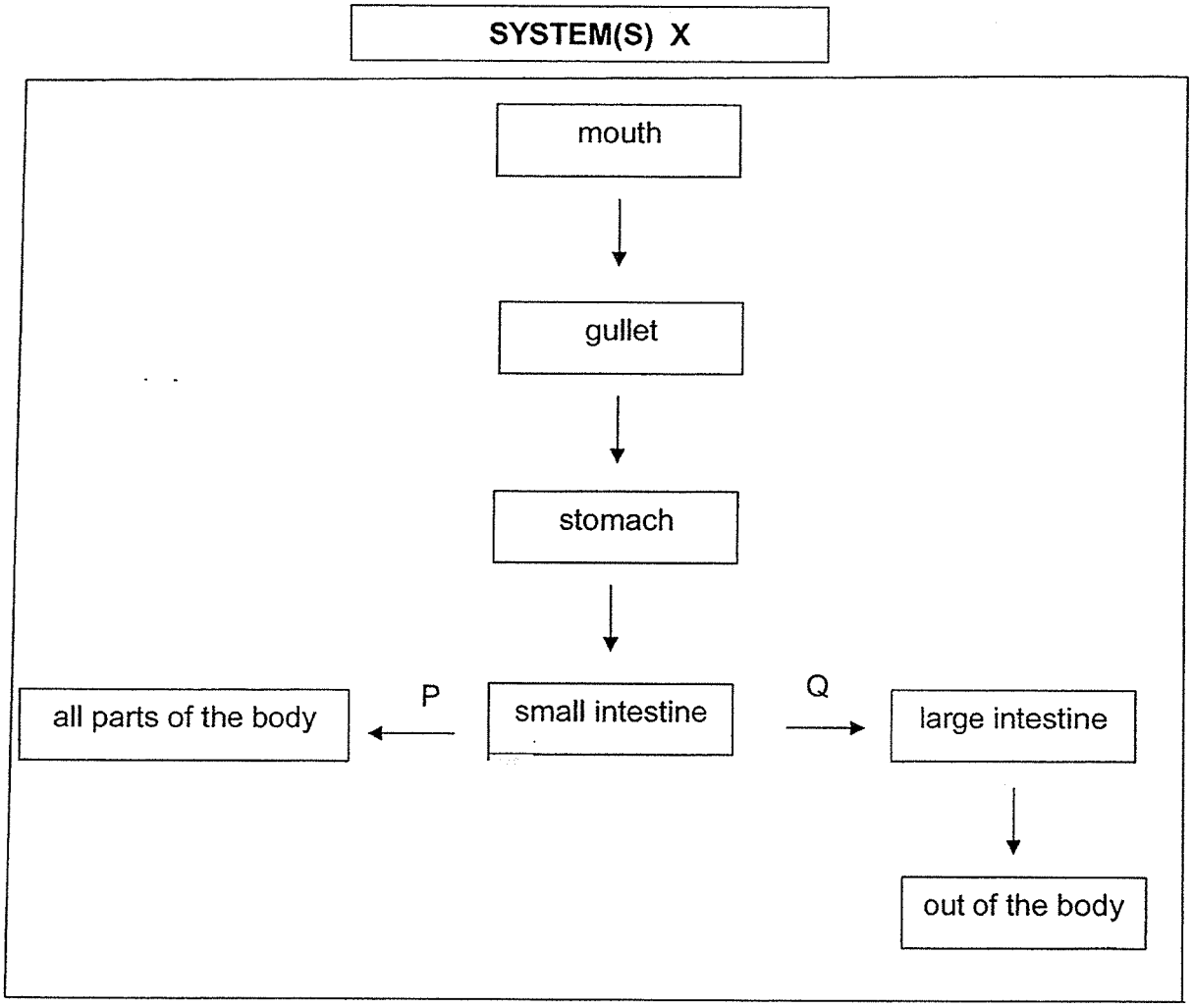
D Other sperms fail to enter the egg.

E The sperms swim towards the egg.

Which one of the following identifies the correct arrangement of stages involved in fertilisation?

	1st stage →				**last stage**
(1)	A	C	D	E	D
(2)	B	A	D	C	E
(3)	D	B	A	C	E
(4)	E	B	D	A	C

7. The flow chart below shows some parts of the human body system(s) X. P and Q are substances found in the blood taken from the small intestine.

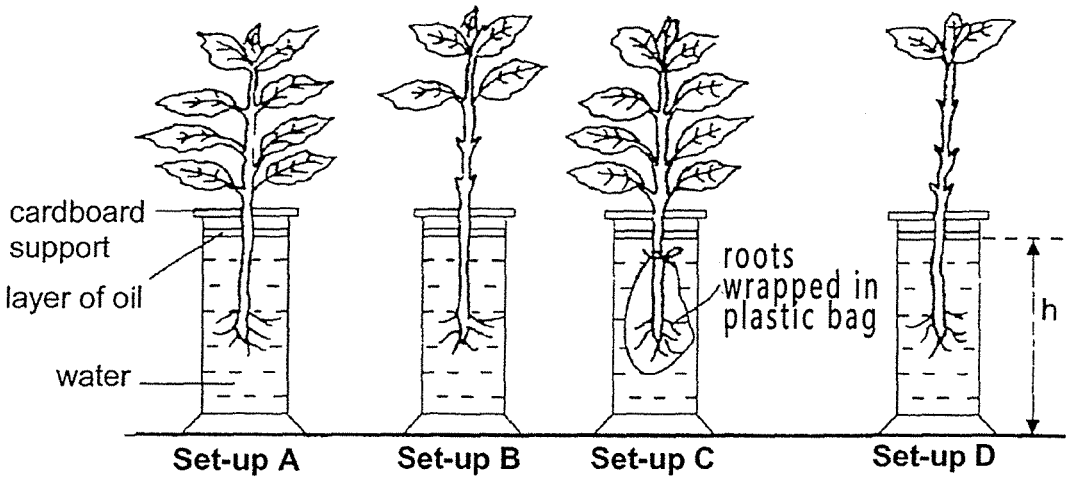


Which one of the following best represents P, Q and X?

	Substance P	Substance Q	System(s) X
(1)	oxygen	carbon dioxide	respiratory
(2)	carbon dioxide	oxygen	circulatory
(3)	digested food	water	digestive and respiratory
(4)	digested food	undigested food	digestive and circulatory

8. Benjamin placed four plants in identical jars, each containing water at the same level as shown below..

He then placed the four set-ups, A, B, C and D, next to the window for an hour.

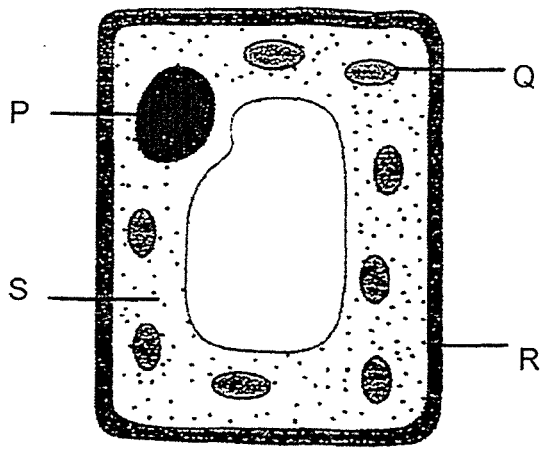


At the end of the experiment, Benjamin measured the height of the water level, ***h***, in each jar.

Which of the following correctly shows the height of water in set-ups A, B, C and D?

	Height, *h*, of the water left at the end of the experiment (mm)			
	Set-up A	**Set-up B**	**Set-up C**	**Set-up D**
(1)	250	195	180	170
(2)	180	170	195	250
(3)	170	180	250	195
(4)	195	250	170	180

9. The diagram below shows a plant cell.



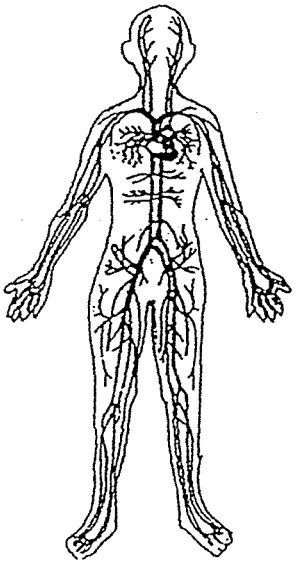
The statements below are some statements about the parts of the above cell.

	Parts	Functions
A	P	Controls all activities within the cell
B	Q	Captures sunlight for plants to make food
C	R	Supports and gives the cell its shape
D	S	Controls the movement of substances in and out of the cell.

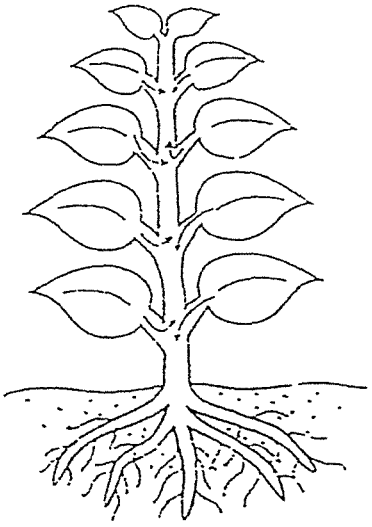
Which of the following have parts that match with their functions correctly?

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

10. The diagrams below show the human circulatory system and the plant transport system.



Human circulatory system



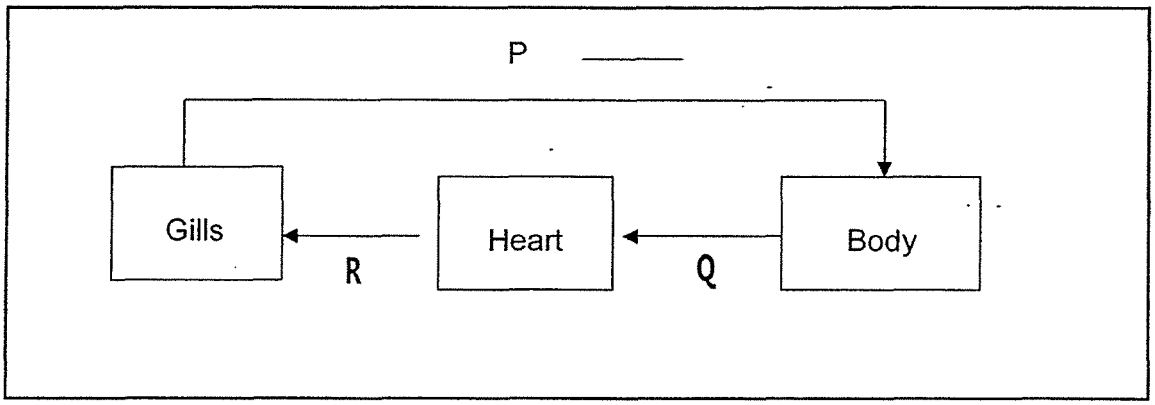
Plant transport system

Which one of the following statements about the two systems is true?

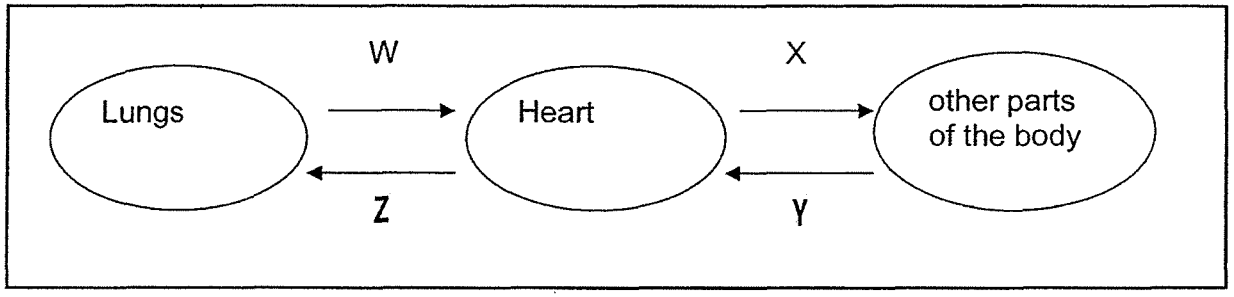
(1) Both break down food into simpler substances.
(2) Both lose water in the form of water vapour only.
(3) Both take in oxygen and give out carbon dioxide only.
(4) Both transport nutrients and water to the different parts.

11. The diagrams below show how gases are transported in the blood through blood vessels, P, Q, R, W, X, Y and Z, in the circulatory systems of a fish and a man.

Circulatory system of a fish



Circulatory system of a human



Based on the diagrams above, which of the following statement(s) is / are correct?

A W, X, and P carry blood rich in oxygen.

B R, Q, Y and Z carry blood rich in carbon dioxide.

C The heart is needed to pump oxygen from the gills to the body of the fish.

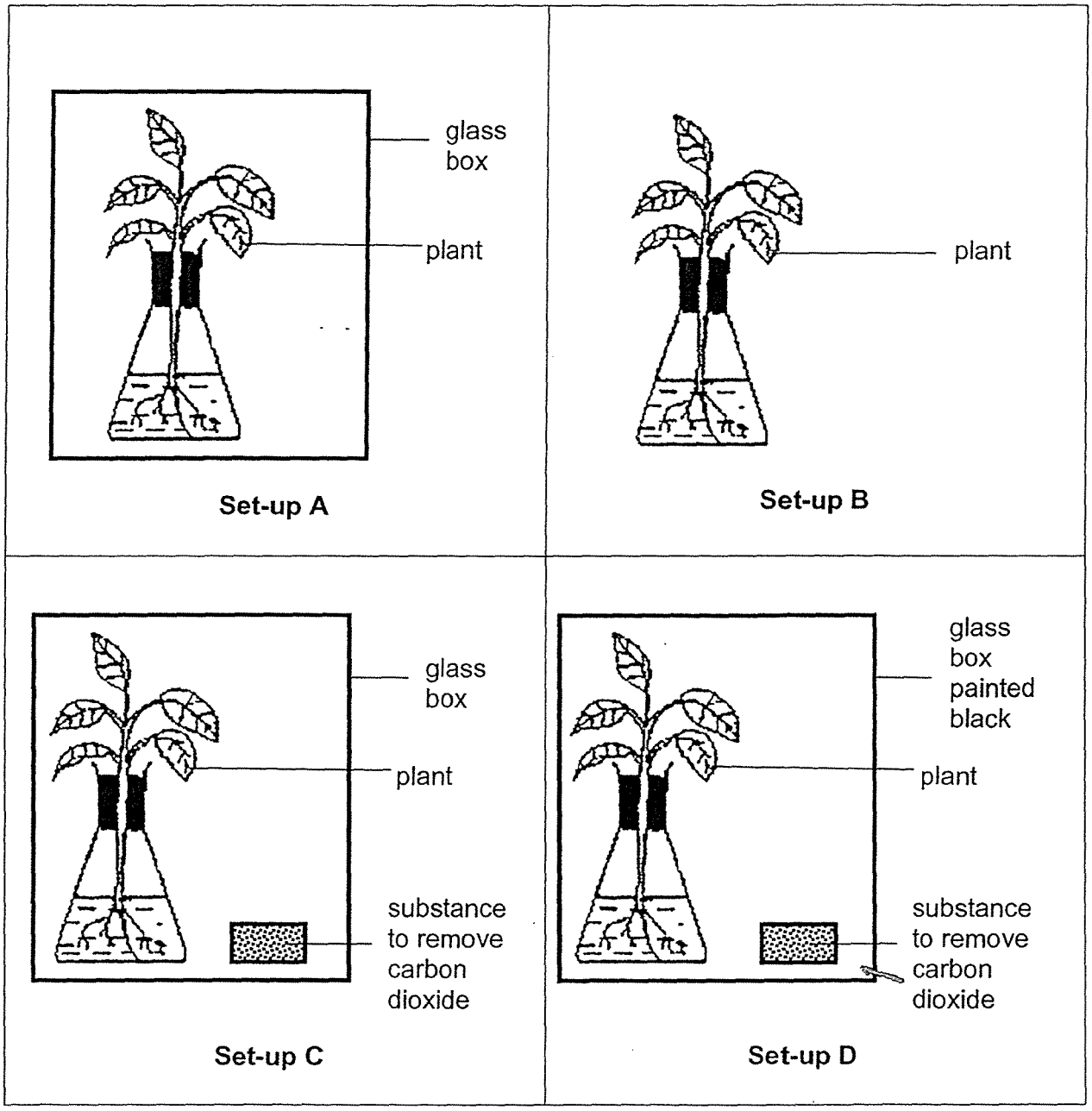
(1) C only

(2) A and B only

(3) A and C only

(4) A, B and C

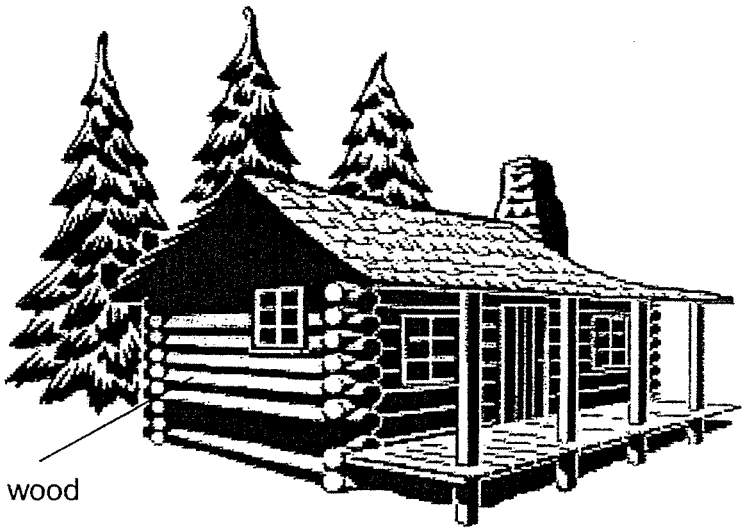
12. Sarah wanted to find out if carbon dioxide is needed for photosynthesis. She prepared four set-ups, A, B, C and D, as shown below.



Which of the above set-ups should Sarah use to conduct her experiment?

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

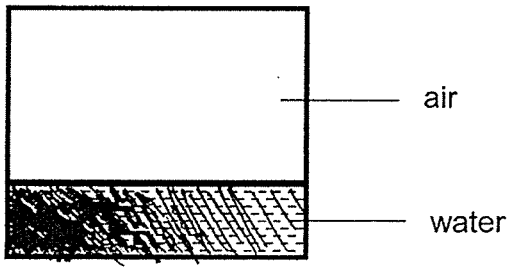
13. Wood is used as building materials to build houses as shown below.



Houses built using wood can withstand the force of strong wind and heavy rain.
Why is this so?

(1) Wood is flexible.
(2) Wood is strong.
(3) Wood is opaque.
(4) Wood is able to float.

14. A cube contains some water and air as shown in the diagram below.



Peter used a syringe to remove some air from the cube.
Which one of the following shows the changes in the volume and mass of the air in the cube after some air has been removed?

	Volume of air	Mass of air
(1)	decrease	decrease
(2)	decrease	remains the same
(3)	remains the same	remains the same
(4)	remains the same	decrease

15. Cheryl has a container filled with a mixture of two substances, X and Y.
The table below shows the melting point and boiling point of the substances.

Substance	Melting point (°C)	Boiling point (°C)
X	217	700
Y	420	900

At what temperature should Cheryl heat the mixture such that one substance becomes a liquid and the other substance becomes a solid?

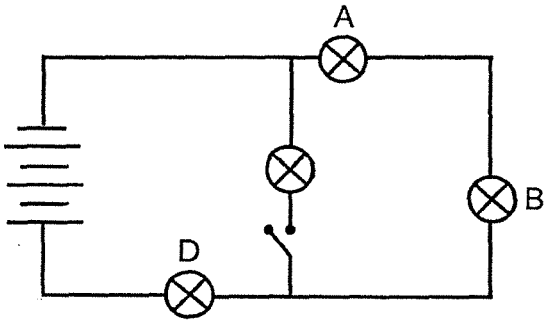
(1) 300 °C

(2) 500 °C

(3) 800 °C

(4) 900 °C

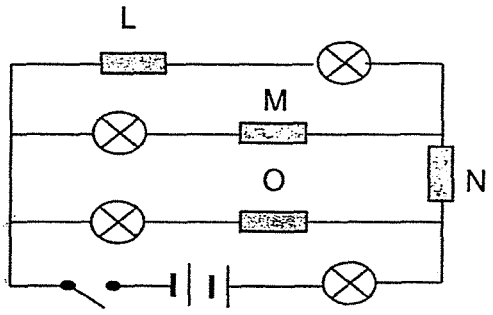
16. The diagram below shows the arrangement of four bulbs, A, B, C and D, in a circuit.



Which one of the bulbs can be controlled by the switch?

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

17. Study the circuit diagram below carefully.

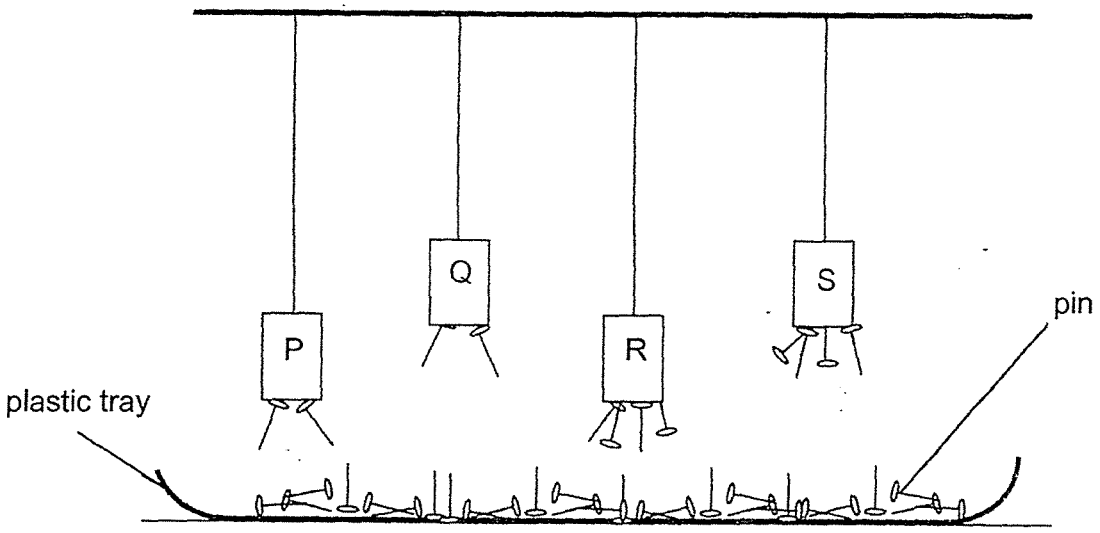


Four objects, L, M, N and O, are connected to the circuit. One of them is a non-conductor of electricity while the others are conductors of electricity. When the switch is closed, only two bulbs light up.

Which one of the following objects is a non-conductor of electricity?

(1) L
(2) M
(3) N
(4) O

18. Wendy hung four magnets, P, Q, R and S, above a tray of identical iron pins. Her observation is shown below.



Which of the following statements are correct?

A Magnet S is the strongest magnet.

B Magnet P is weaker than Magnet R.

C Magnet R is stronger than Magnet Q.

D Both Magnets P and Q have the same strength.

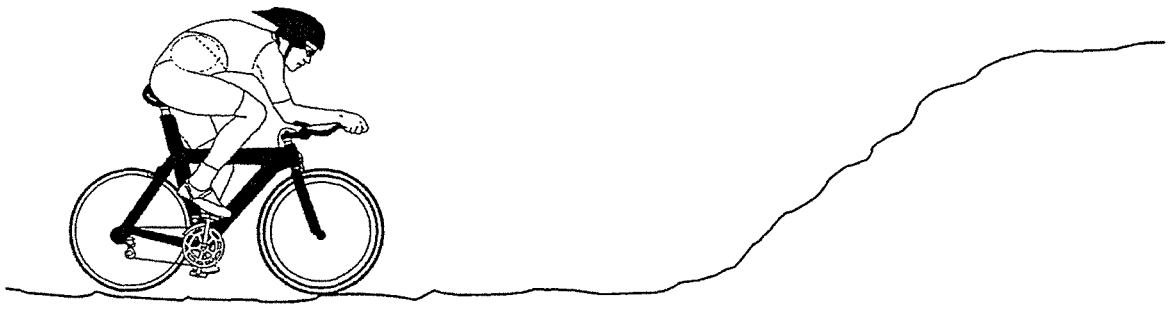
(1) A and B only

(2) B and D only

(3) A, B and C only

(4) A, C and D only

19. Peter cycles along the path shown below.



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

A He lowers his body and head to reduce air resistance in order to cycle faster.

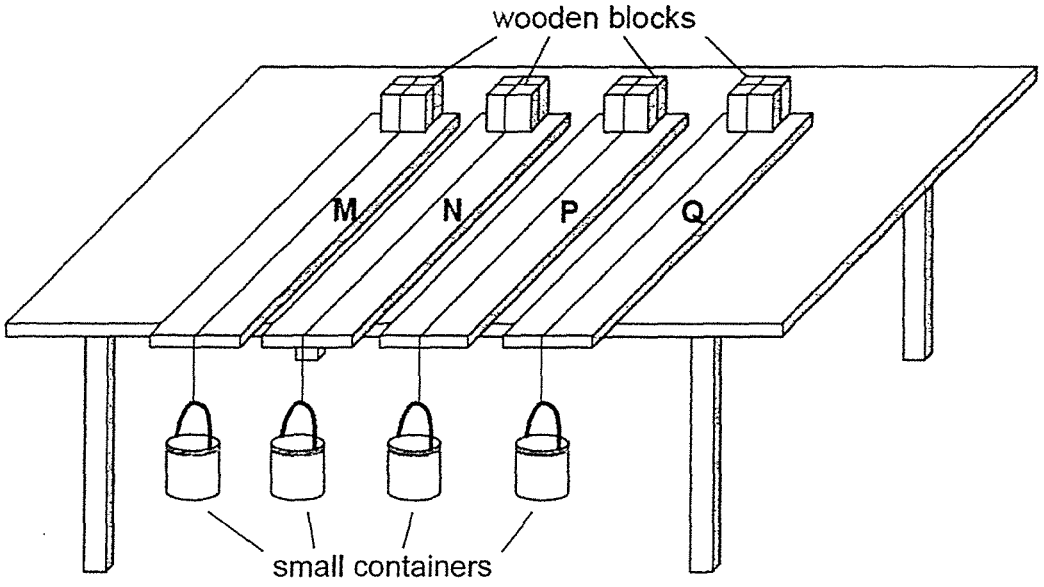
B He lowers his body and head to increase air resistance in order to cycle faster.

C He finds it harder to cycle up slope because he is moving against the direction of gravity.

D He finds it harder to cycle up slope because he is moving in the same direction of gravity.

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

20. Marcus set up the experiment as shown below. He **each identical wooden block** to a small container. Next, he placed the wooden blocks on **four** different surfaces labelled M, N, P and Q.



Marcus added 10g-weight one by one into each container until the wooden block attached started to slide across the surface. He recorded the results in the table below.

Surface	Number of 10g-weights required for block to start sliding
M	8
N	2
P	10
Q	5

Based on the information above, which of the following statement(s) is/are correct?

A Surface M is smoother than P but rougher than N and Q.

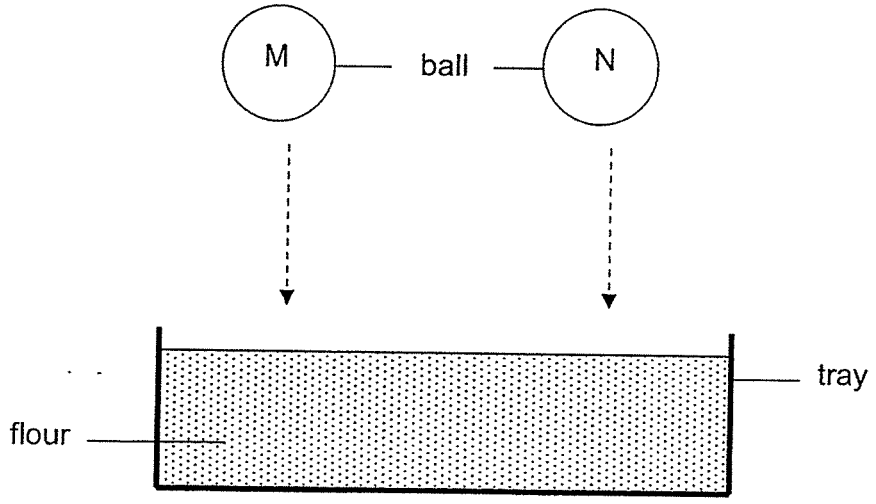
B Most gravitational force is acting on the block sliding on surface P.

C Frictional force between the wooden block and surface had to be overcome before it started sliding.

D The minimum amount of weights required to move the wooden block on surface N is 20g.

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

21. Catherine dropped two balls, M and N, of the same size into a tray of flour from the same height as shown below. Ball M has a greater mass than ball N.



She recorded the depth of the dent made by the balls in the tray of flour in the table below.

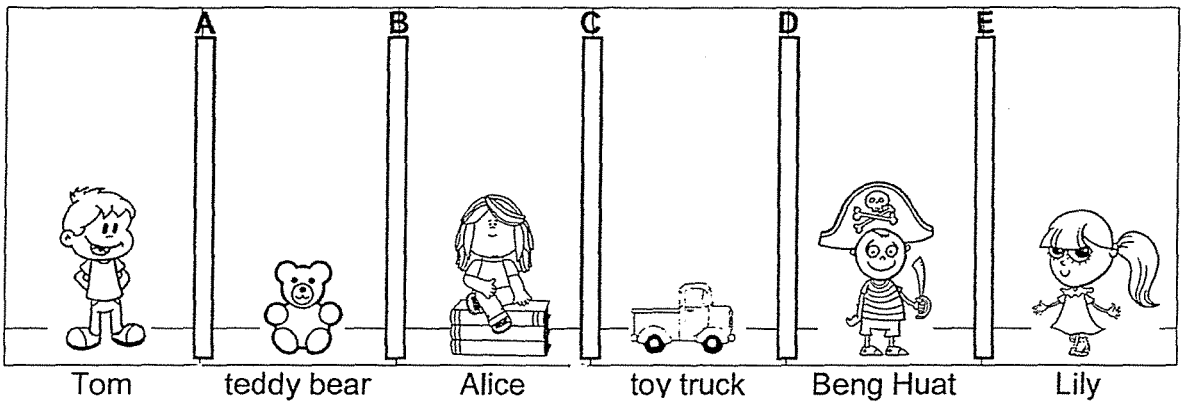
	Depth of dent (cm)			
Ball	**1st try**	**2nd try**	**3rd try**	**Average**
M	3	3.5	3.5	3.33
N	?	?	?	?

Based on the information above, which of the following statement(s) is/are definitely correct?

A More frictional force was acting on M than N.
B More amount of gravitational force was acting on M than N.
C The average depth of the dent made by ball N would be less than 3.33cm.

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

22. Study the diagram below.



Four children and two of their toys are separated by screens, A, B, C, D and E.

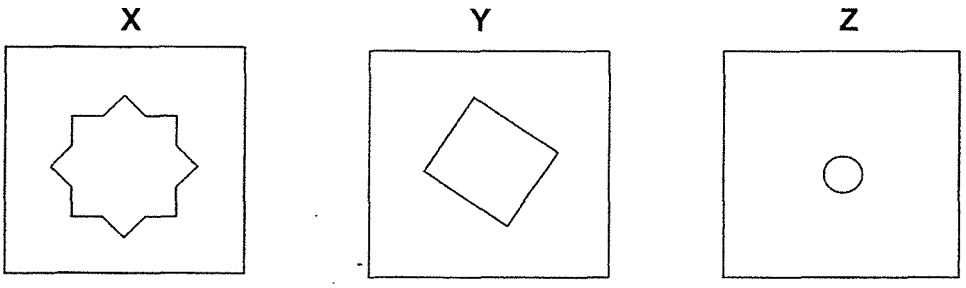
Given that the screens are made of different materials, the following results were recorded:

- Tom is unable to see Alice.
- Lily is unable to see the toy truck.
- Alice can see both the teddy bear and the toy truck.

Based on the information above, which one of the following could possibly be the materials that have been used to make the screens?

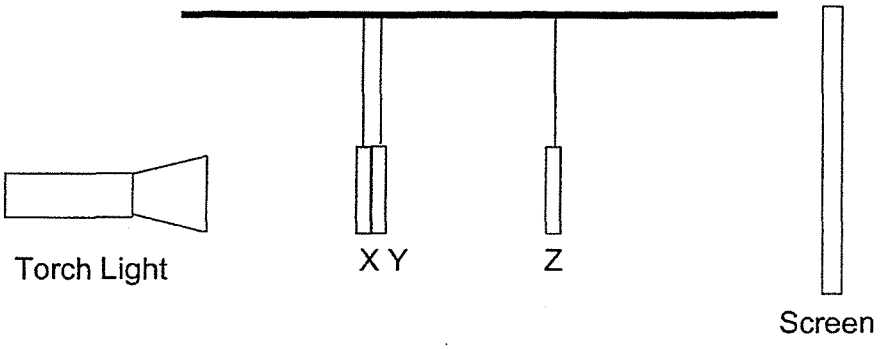
	A	B	C	D	E
(1)	clear plastic	metal	clear plastic	wood	clear glass
(2)	wood	clear plastic	clear glass	metal	clear plastic
(3)	clear plastic	clear glass	metal	wood	clear glass
(4)	metal	metal	wood	clear plastic	clear glass

23. Gary cut out holes of different shapes and sizes in the centre of three squares, X, Y and Z, which are made of plastic, wood and tracing paper respectively.



plastic wood tracing paper

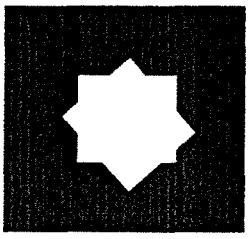
Next, Gary shone light on the three shapes using the set-up below. The three shapes are placed at different distances from the torch.



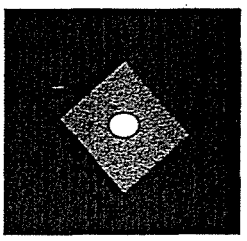
The diagrams below show what was seen on the screen.

Which one of the following shadows is most likely to be formed on the screen?

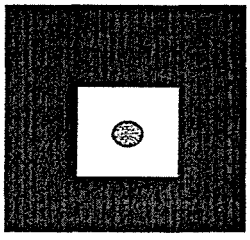
(1)



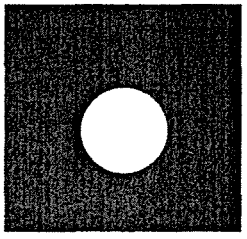
(2)



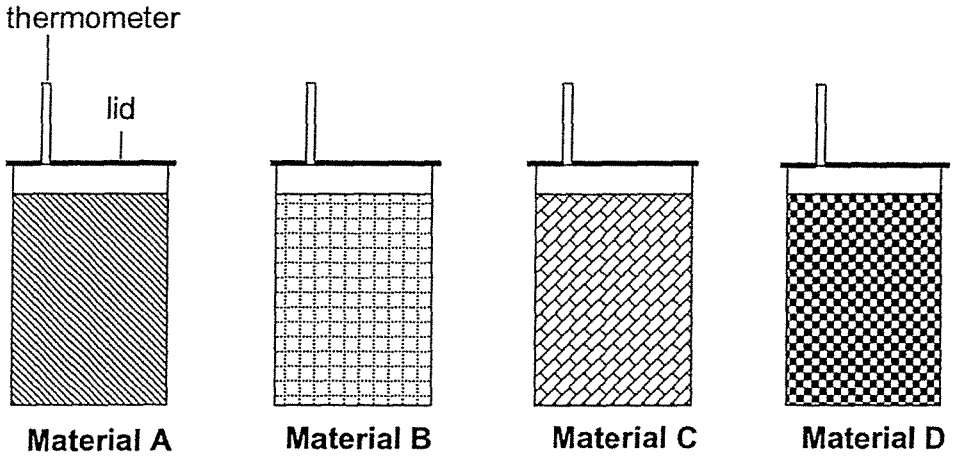
(3)



(4)



24. Natalie wanted to **make a shirt to keep her warm on cold days. She** wrapped four materials, A, B, C and D, around each identical container covered with a lid. Each container was filled with the same amount of hot water as shown below.



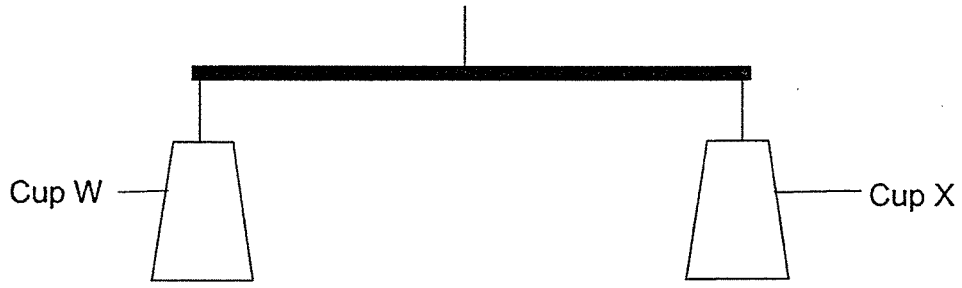
Natalie recorded the temperature of the water at the start of the experiment and twenty minutes later. The results of her experiment are recorded below.

Time (min)	Temperature of water (°C) in container wrapped with ...			
	Material A	Material B	Material C	Material D
0	60	60	60	60
20	32	40	38	36

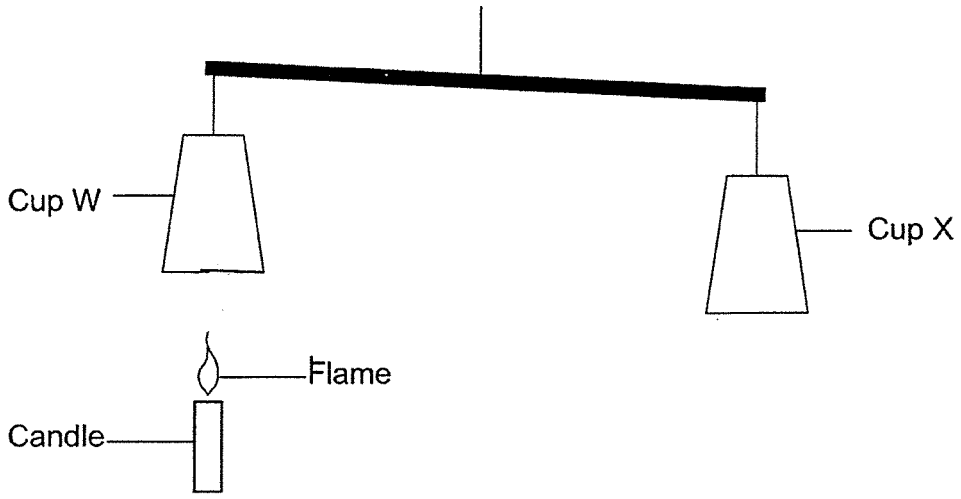
Based on the results, which cloth material should Natalie choose for making the shirt?

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

25. Kenneth attached two cups, W and X, on a balanced rod as shown below.



He placed a candle below Cup W and observed the following ten minutes later.



Three of his classmates gave the following explanations for the above observations:

Alex : Cup X is made of a better conductor of heat.

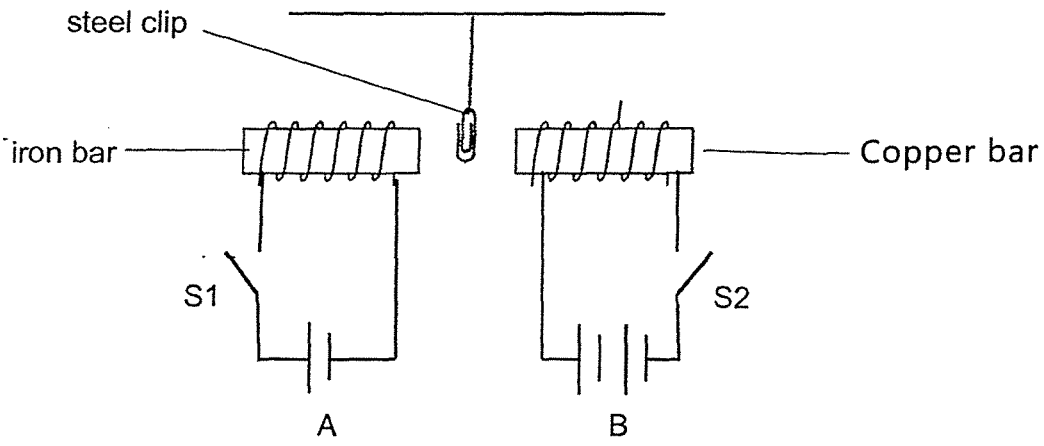
Betty : The air above the candle flame gained heat.

Cody : The air above the candle flame rose.

Which of his classmates correctly explained the observation?

(1) Betty only
(2) Cody only
(3) Alex and Betty only
(4) Betty and Cody only

26. Serene placed a steel clip between 2 electrical circuits, A and B, as shown in the diagram below.



When Serene closed switches S1 and S2 at the same time, which one of the following observations would she make? The steel clip would _____.

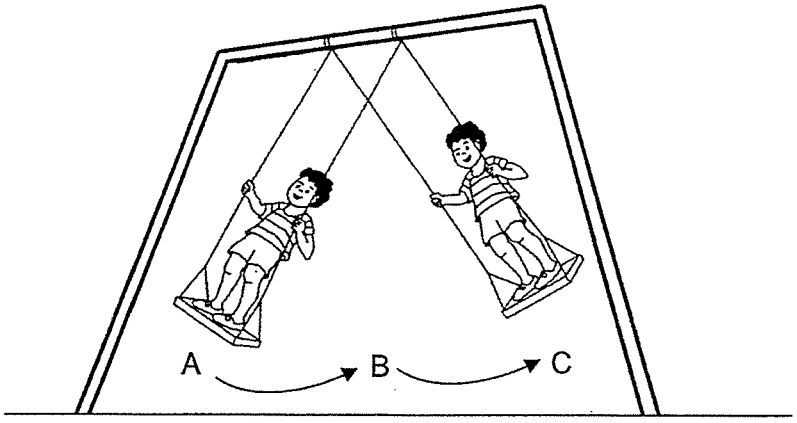
(1) be attracted to the iron bar

(2) be attracted to the copper bar

(3) remain in its original position

(4) be attracted to the copper bar and then to the iron bar

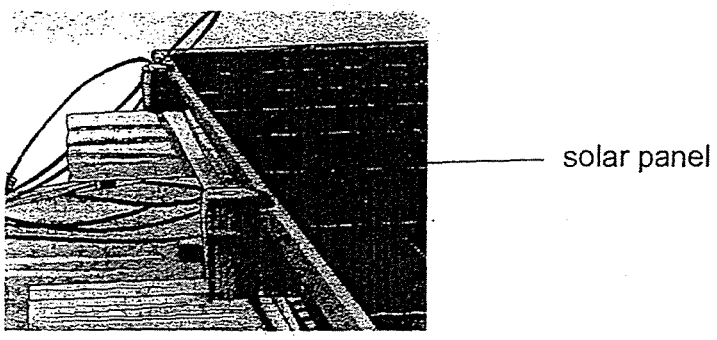
27. Denny was playing on a swing as shown in the diagram below.



Which one of the following statements is true when Denny swung from position A to B and then to C?

(1) The potential energy at A, B and C are the same.
(2) Potential energy was the highest at A and was lost at B.
(3) Kinetic energy increased from A to B and again from B to C.
(4) Kinetic energy increased from A to B and decreased from B to C.

28. The picture below shows a solar panel which is found on the roof of a house. The solar panel is connected to the water heater in the bathroom.



Which of the following shows the correct energy conversion, taking place from the solar panel to the water heater?

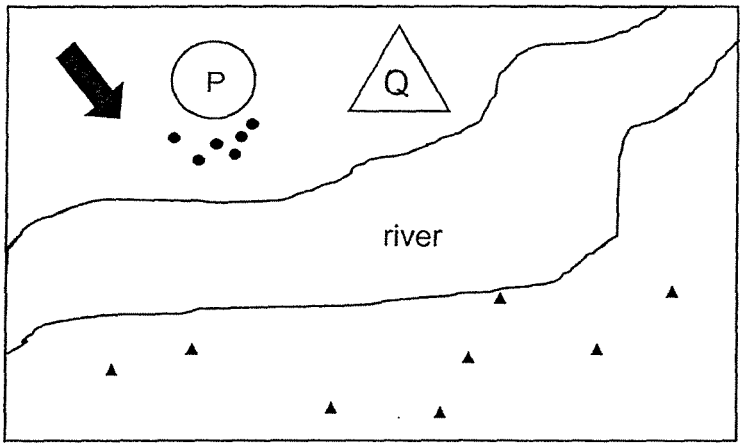
(1) potential energy → light energy → heat energy
(2) light energy → electrical energy → heat energy
(3) kinetic energy → electrical energy → heat energy
(4) electrical energy → chemical energy → heat energy

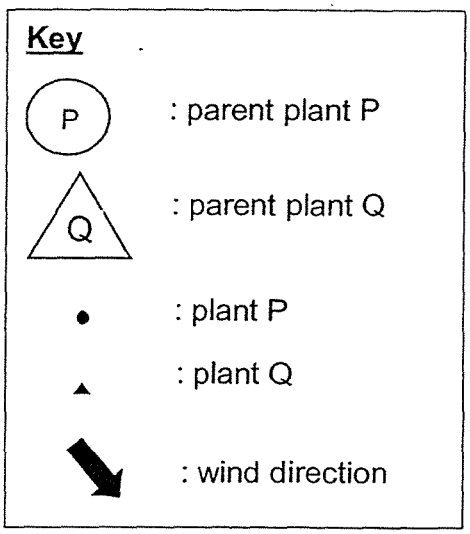
Name : _____ Index No : _____ Class : P6 ___ 44

SECTION B (44 marks)

For questions 29 to 41, write your answers clearly in the spaces provided.
The number of marks available is shown in the brackets [ ] at the end of each question or part question.

29. Sam conducted a field study on the seed dispersal of plants P and Q. He recorded his observations on the distribution of seeds by the plants in the diagram below.





(a) State the method of dispersal of plant P and Q. [1]

(i) P: _____

(ii) Q: _____

(b) Give a reason for your answer in (a)(i). [1]

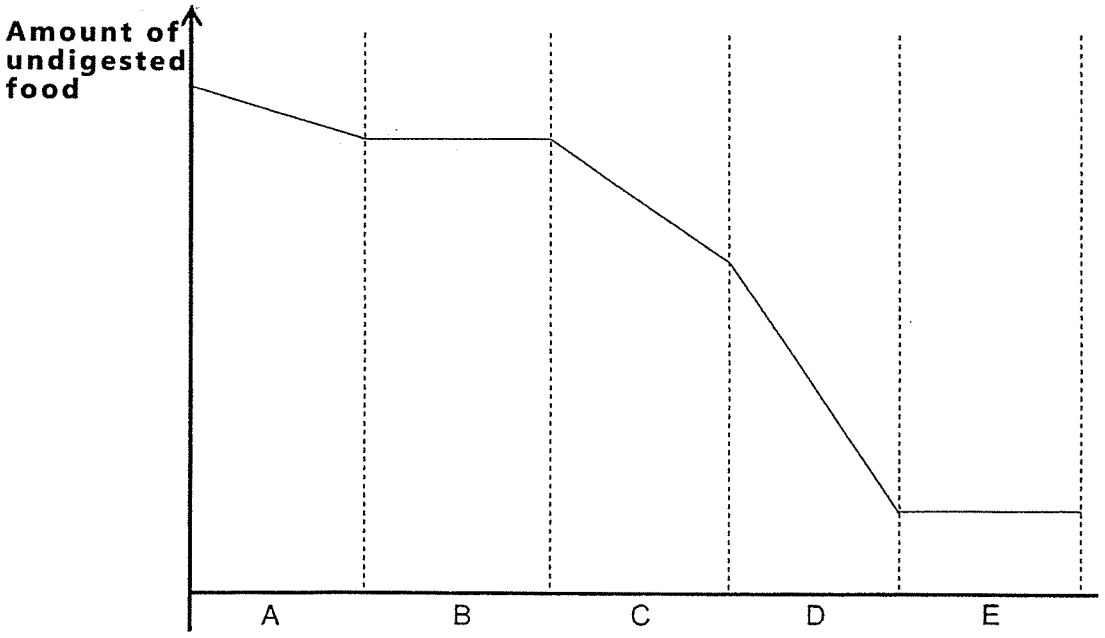
_____

(c) State one physical characteristic the fruit of Q is most likely to have that helps in its dispersal. [1]

_____

Score 3

30. The graph below shows the amount of undigested food as it goes though the different parts of the digestive system.



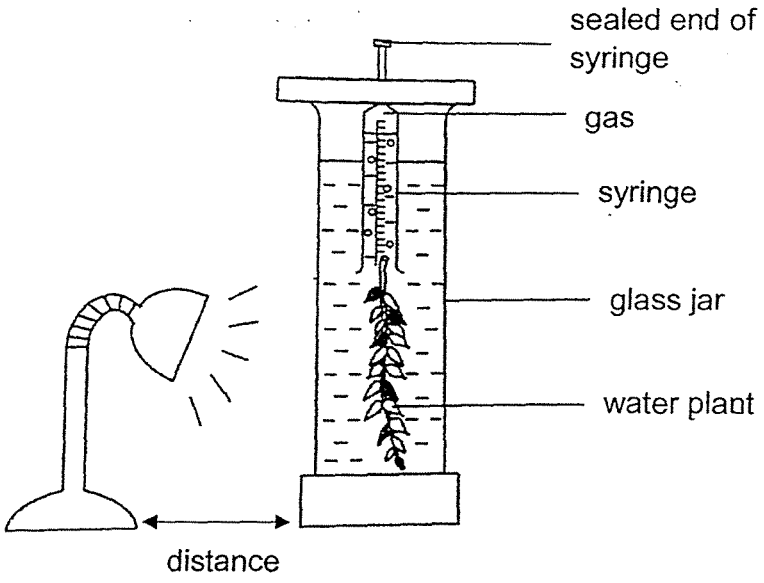
Parts of digestive system

(a) Based on the graph, in which part of the digestive system, A, B, C or D, was the greatest amount of food digested? Explain your answer. [2]

(b) Which part of the graph represents the large intestine? Give a reason for your answer. [1]

Score	3

31. Peter conducted an experiment shown below in a dark room. He then repeated his experiment by adding some water snails.



He recorded his result in the table below.

Distance of lamp from water plant (cm)	Number of bubbles produced per minute	
	Without water snail	With water snails
5	16	19
10	11	14
15	6	10
20	2	5

(a) In the absence of water snail, the number of bubbles produced decreases as the distance from the lamp increases. Explain why. [1]

_____

_____

(b) Explain why there was an increase in the number of bubbles produced water snails were present. [2]

_____

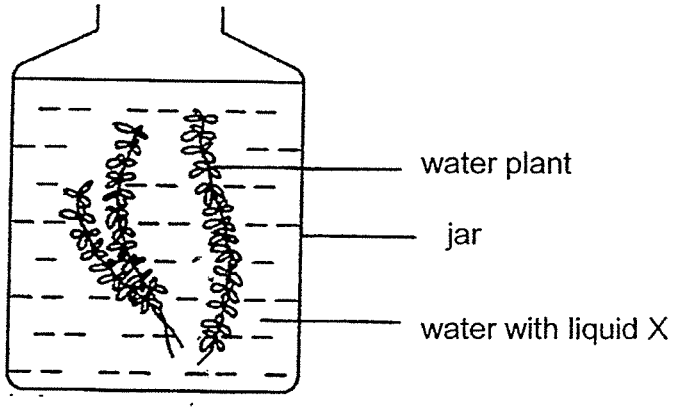
_____

(c) Peter conducted the experiment in a dark room. Give a reason why this helped to make the experiment a fair test. [1]

_____

Score	4

32. Kennis used the set-up below to find out whether water plants affect the amount of carbon dioxide in water at different times of the day.



She placed the set-up near the window and added a few drops of a liquid X to the water. The table below shows how Liquid X changes colour as it interacted with the different concentration of carbon dioxide in the water.

Amount of carbon dioxide in water (cm^3)	**Less than normal**	**Normal**	**Higher than normal**
Colour of water with liquid X	Purple	Red	Yellow

(a) In the table below, write the colour of water with liquid X be at noon and at midnignt. [2]

Time of the day	**At noon**	**At midnight**
Colour of water with liquid X		

(b) Explain your answer provided for "at midnight" in (a) clearly. [2]

_____

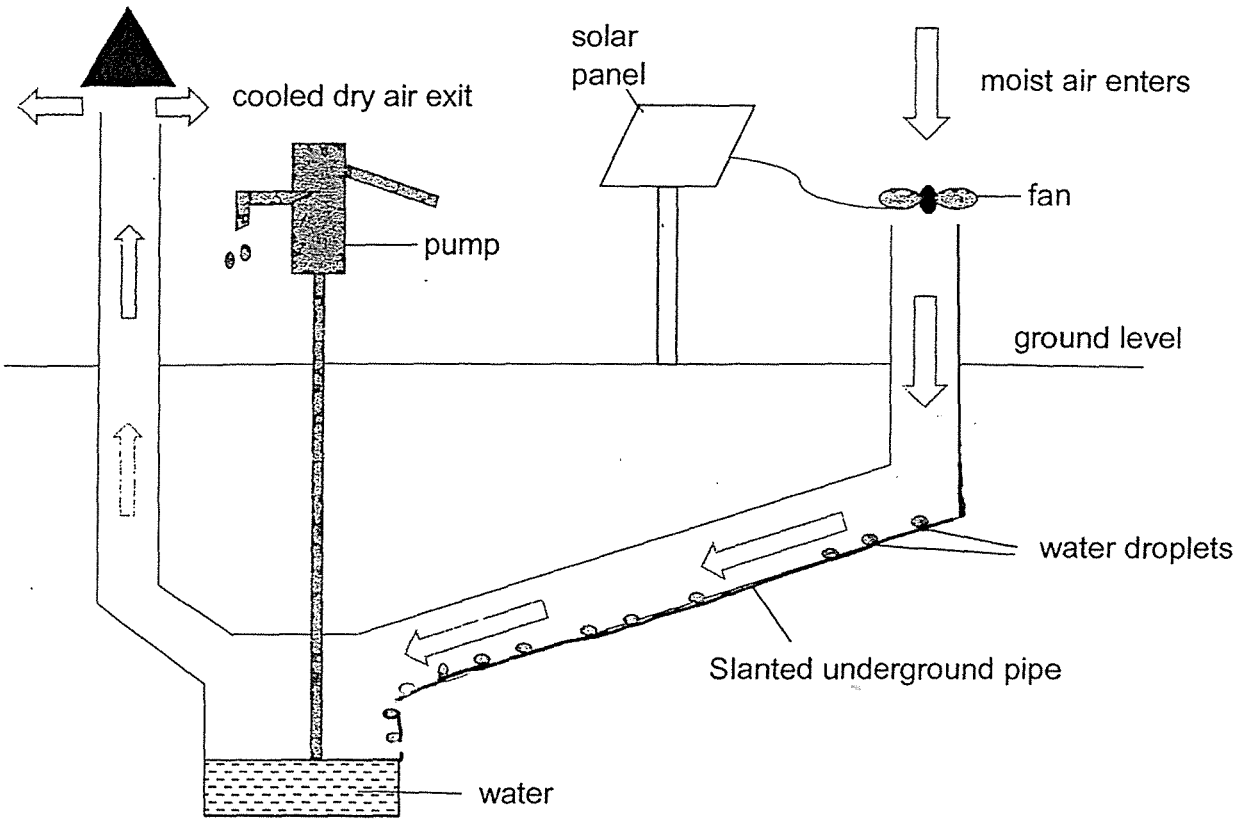
_____

_____

Score	/ 4

33. The device below is used in some countries to obtain pure drinking water from the surrounding air. The solar panel which is attached to the fan, powers the fan. Air from the surrounding will be drawn underground through the underground slanted pipes when the fan rotates. Pure drinking water obtained by this method could be pumped above the ground with the help of the pump attached.

Buried pipe to obtain pure drinking water

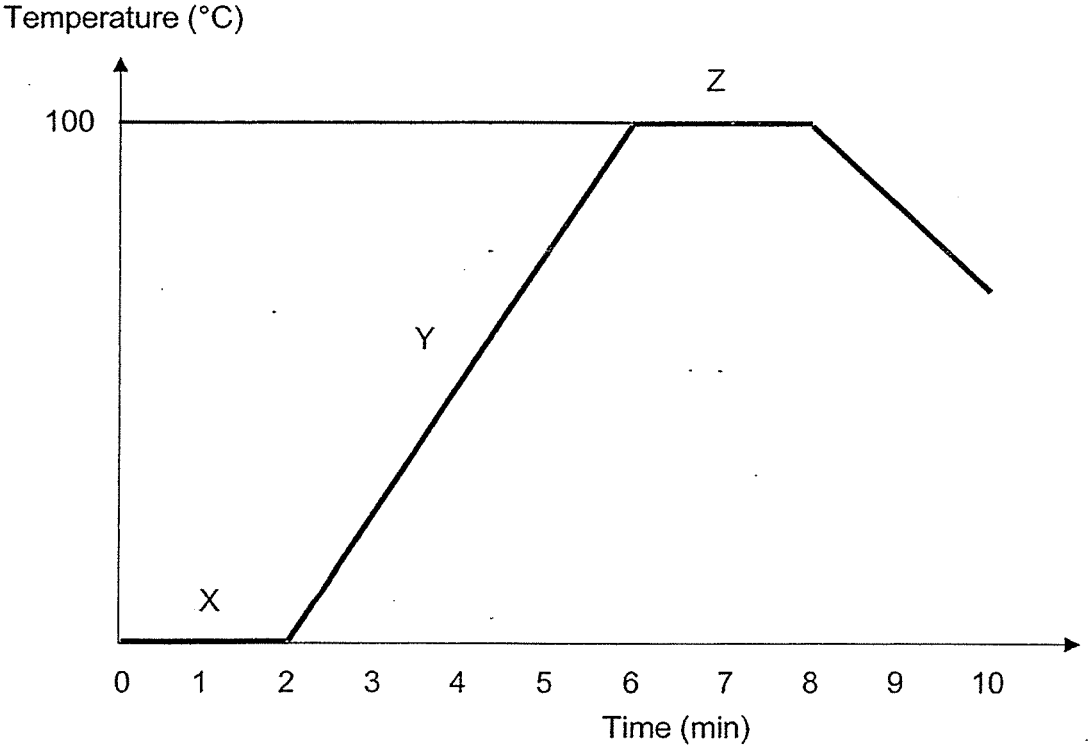


(a) The temperature of air above the ground ranges from 18°C to 46°C while the temperature underground ranges from 7°C to 18°C. Explain how water can be obtained from the air that passes through the pipes. [2]

(b) One way to collect more water using this device is to pass more air through the inlet. Suggest two other changes to the device that would enable it to collect more water over a fixed period of time. [2]

Score	/4

34. A beaker of ice was heated and the change in temperature was recorded in the graph below.



(a) Name the processes that are represented by parts X and Z of the graph.[2]

X	
Z	

Score	2

Continue on next page

Continued from previous page

(b) Fill in the blanks below with a (√) against the parts X, Y, Z in the table to indicate if there is heat gain as water changes from one state to another. [1]

Parts	Heat gain
X	
Y	
Z	

(c) The burner was not switched off throughout the experiment.

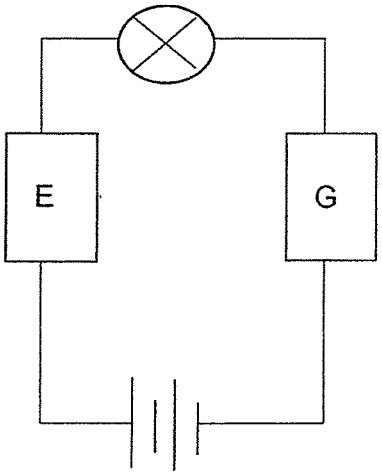
Suggest one reason why there was a decrease in temperature after the 8th minute. [1]

_____

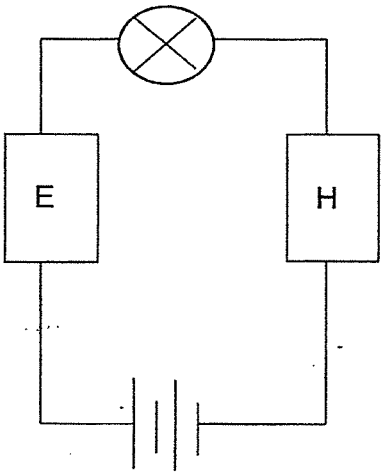
_____

Score	2

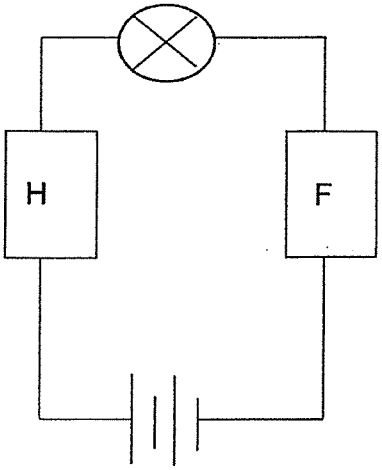
35. The circuits below are set up with different materials, E, F, G,and H.



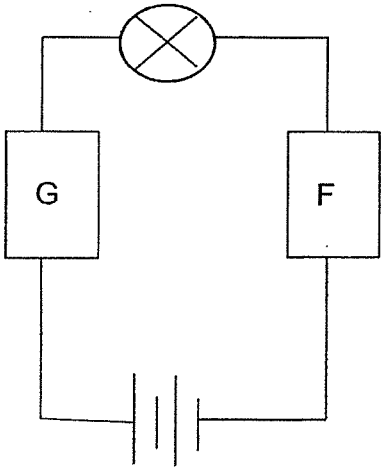
Set-up A



Set-up B



Set-up C



Set-up D

The results of the 3 set-ups, A, B and C, are shown in the table below.

Set-up	Does the bulb light up?
A	No
B	Yes
C	Yes

continue on the next page

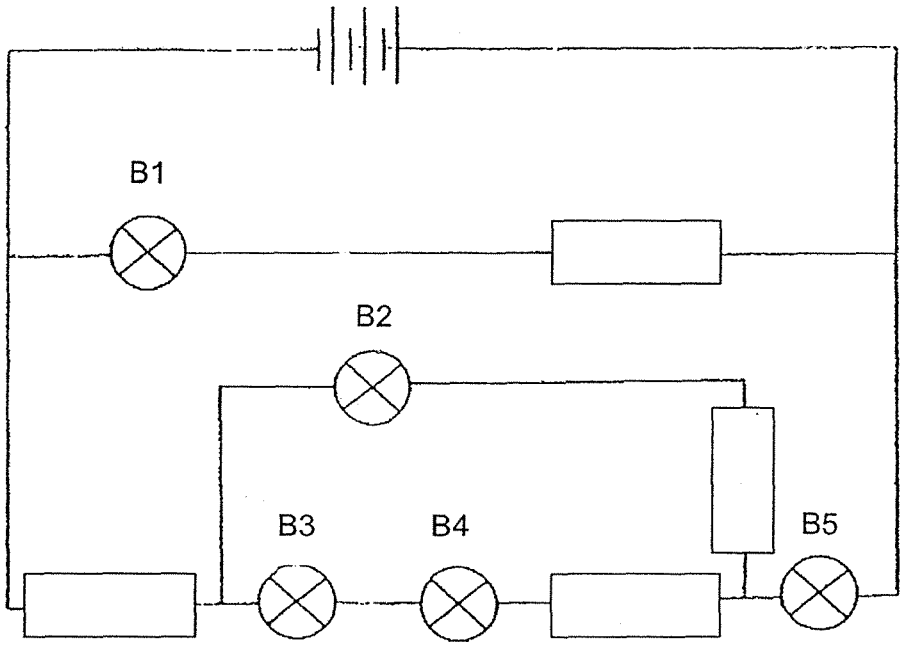
continue from the previous page

(a) Will the bulb light up in Set-up D? Explain your answer. [2]

_____

_____

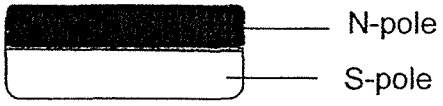
The materials E, F, G and H are connected in another circuit as shown below.



(b) In the circuit diagram above, **write E, F, G and H** in the correct box so that **only three bulbs** in the circuit will light up. [1]

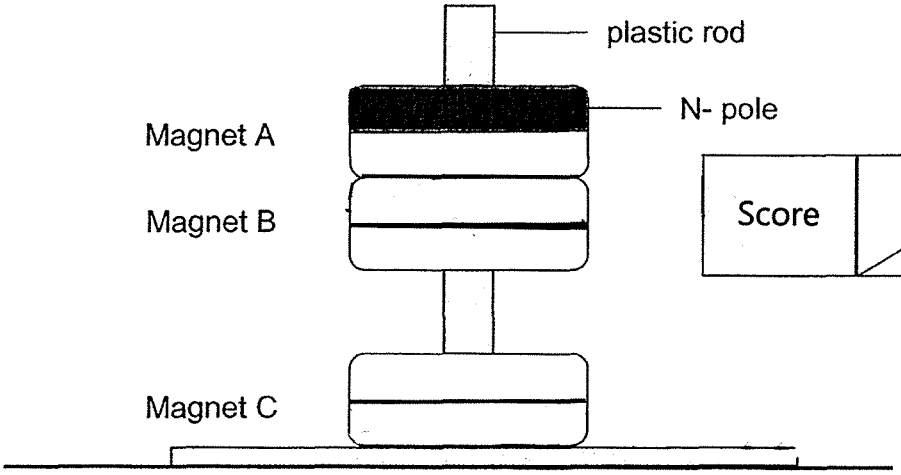
Score	/3

36. Chris placed 3 ring magnets through a plastic rod. Each ring magnet has a N-pole and S- pole as shown below.



Magnet A

(a) Shade and label the N-pole of the magents B and C in the diagram below. [1]

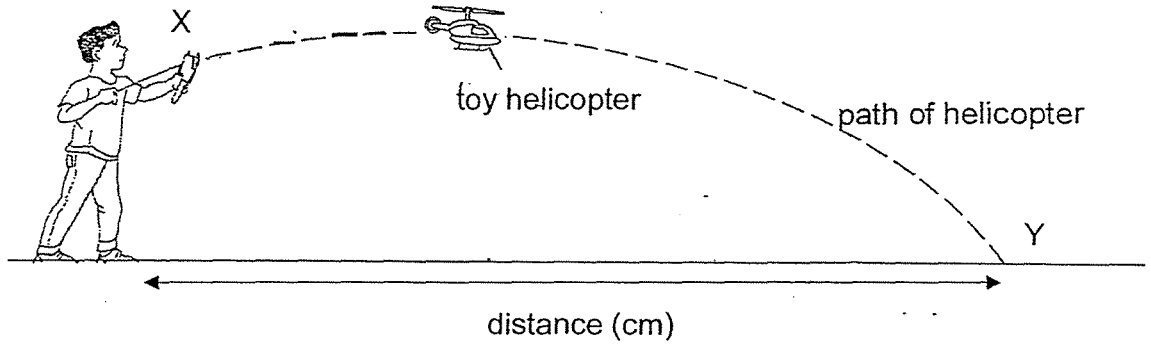


Score	3

(b) What should Chris do to make magnet A 'float' above magnet B? Explain your answer. [2]

Score	3

37. James carried out an experiment on two different toy helicopters, A and B, using the set-up shown below.



He launched the helicopter A at an angle. His results are shown below.

Attempts	Distance (cm)
1st	330
2nd	370
3rd	350

(a) Give a possible reason why the distance moved by helicopter A was different for each attempt. [1]

_____

(b) Name two forces that were acting on the helicopter when it was moving. [1]

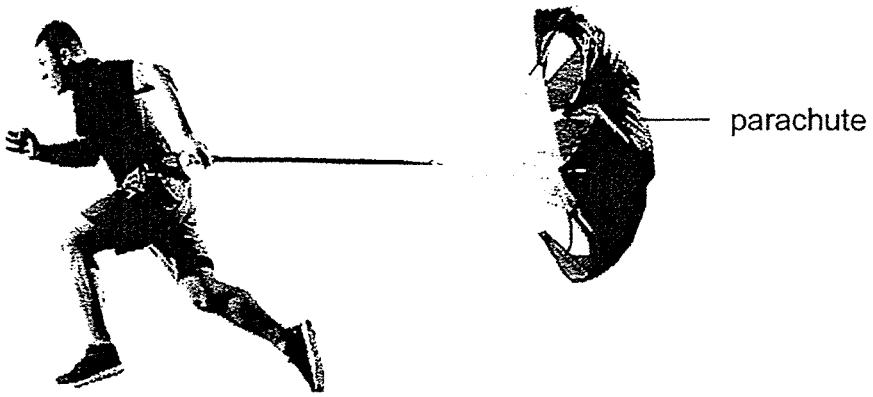
_____

(c) The average distance moved by the 15g toy helicopter A is 350 cm. If James launched a 35g toy helicopter B in the same direction with the same force, draw the path of toy helicopter B on the diagram above using the same starting point at X. [1]

Score	/3

38. **Peter wanted to find out how the surface area of a parachute affected the time taken for him to run five meters with it.**

The diagram below shows Peter running with the parachute.



Peter recorded his readings in the table below.

Surface area of parachute (cm^2)	Time taken to complete five metres (s)
900	20
1000	28
1100	34
1200	45
1300	59

(a) Based on the information above, what is the relationship between the surface area of the parachute and the time taken to complete the five-metre run? [1]

_____

_____

Peter cut a few holes on the 1300-cm^2 parachute and then ran with it.

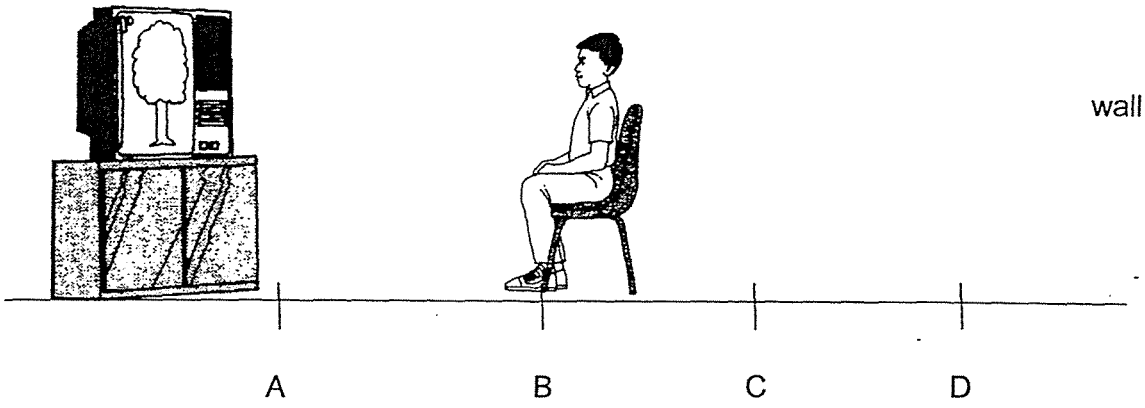
(b) Would the time recorded for Peter to complete running 5 metres be "more than", "less than" or "the same" as 59 seconds?
Explain your answer clearly. [2]

_____

_____

Score	/ 3

39. Jerry was watching television at position B in a dark room as shown below.



(a) Why was Jerry able to see the television screen in the dark? [1]

_____

_____

Tom measured the length of the shadow cast on the wall as Jerry moved from Position A to D.

(b) In the table below, write the length of the shadow when Jerry was at Position C. [1]

Jerry's position	Length of shadow cast (cm)
A	**180**
B	**164**
C	
D	**104**

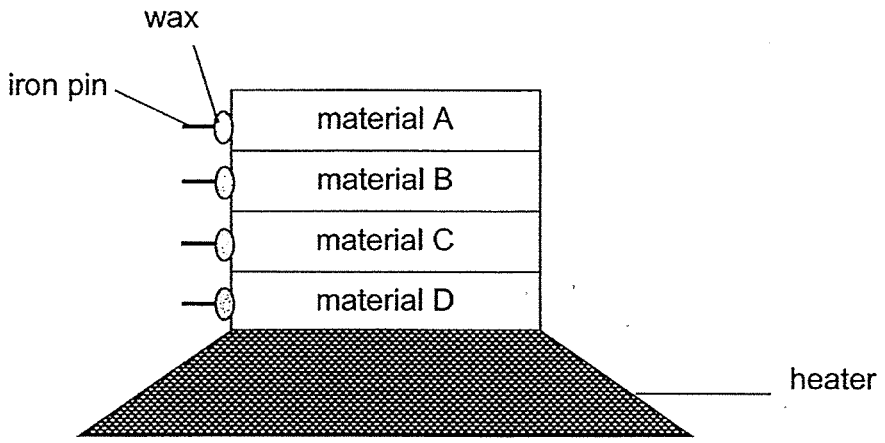
(c) Describe where Jerry must be positioned in order to cast a shadow of about 170 cm long. [1]

_____

_____

Score	/ 3

40. Ahmad set up the experiment shown below to find out the heat conductivity of four different materials, A, B, C and D.



Ahmad recorded the results of his experiment in the table below.

Material	Time taken for iron pin to drop (min)	Put a cross (X)
A	13	
B	9	
C	15	
D	2	

(a) Ahmad's sister said that he had recorded ONE of the results wrongly. Put **ONE** cross (X) in the table above to indicate the mistake he had made. [1]

continue on the next page

Score 1

continue from the previous page

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

_____

_____

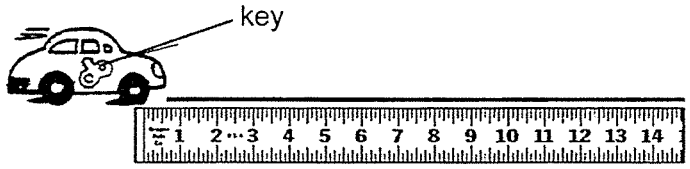
(c) Ahmad's sister also said that he did not conduct a fair test. Suggest what Ahmad can do to the set-up to ensure a fair test. [1]

_____

_____

Score	/ 2

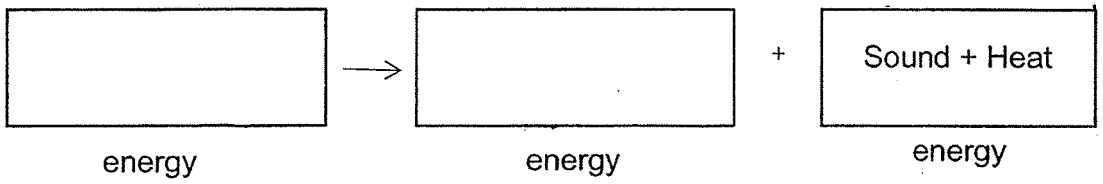
41. Su Min conducted an experiment using a wound-up toy car. She wound-up the toy car by turning the key and recorded the distance it travelled on the floor before coming to a complete stop.



She recorded her results as shown below.

Number of turns of key	Distance travelled (cm)
2	3
4	6
6	9
8	12

(a) State the energy conversion of the wound-up toy car when it was released in the boxes provided. [1]



(b) What is the relationship between the number of turns of the key and the distance travelled by the toy car? [1]

(c) Using the same toy car and floor surface, suggest one change Su Min could make to the car to enable it to travel a further distance. [1]

(d) Explain why the toy car stopped moving after travelling a distance. [1]

Score	4

The End

SCHOOL : RAFFLE GIRL'S PRIMARY SCHOOL
LEVEL : PRIMARY 6
SUBJECT : SCIENCE
TERM : 2020 PRACTICE PAPER

SECTION A

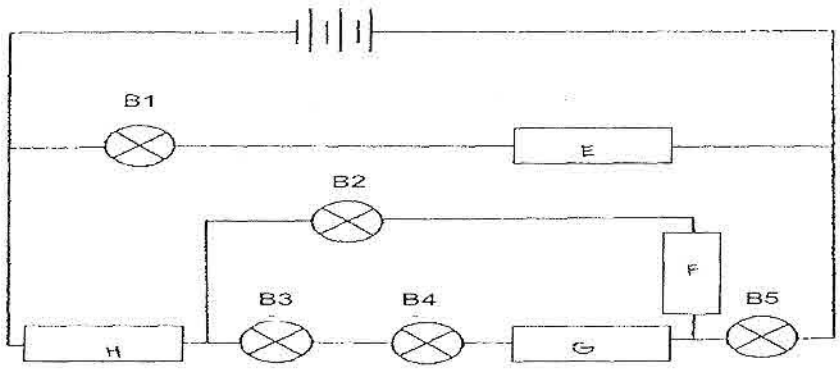
Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
4	4	3	2	3	4	4	3	3	4
Q 11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
2	1	2	4	1	3	3	1	3	4
Q 21	Q22	Q23	Q24	Q25	Q26	Q27	Q28		
4	2	2	2	4	1	4	2		

SECTION B

Q29)	a) (i)Splitting (ii)By wind/By animal b) Plant P was dispersed very close to the parent plant P. c) Wind: Wing like structures. Animal: Fleshy, brightly coloured, hook like structures.
Q30)	a) Part D There was the greatest decrease in the amount of undigested food in part D of the digestive system, indicating that Part D digested the most amount of food. Digestion takes place at the greatest rate at the small intestine. b) E: There is the least amount of undigested food left. Amount of undigested food remains the same. R: No digestion takes place in the large intestine so E represents the large intestine.
Q31)	a) The water plant receives less light from the lamp, causing the rate of photosynthesis of the plant to decrease. Thus, it produces less oxygen bubbles.

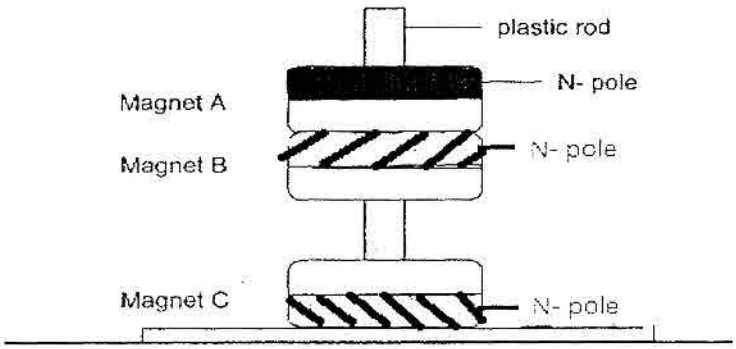
	b) The water snails produced carbon dioxide during respiration. With more dissolved carbon dioxide in the water, the water plant had a higher rate of photosynthesis, thus producing more oxygen bubbles. c) It prevented light from external light sources from affecting the rate of photosynthesis of the plant, ensuring that the number of bubbles produced per minute by the water plant was due solely to the light it received from the lamp.
Q32)	a) At noon: purple At midnight: yellow b) At midnight, there was no sun. The water plant did not receive any light to undergo photosynthesis, so it did not take in carbon dioxide. The plant took in oxygen and gave out carbon dioxide during respiration, causing the amount of carbon dioxide in the water to be higher than normal and thus turning the water with liquid X yellow.
Q33)	a) The water vapour in the air from above the ground comes into contact with and loses hear to the cooler inner surface of the underground pipe, condensing into water droplets. b) – Increase the surface area of the solar panel – Add more solar panels to the set-up –Increase the length of the pipe –Have the pipes deeper underground so that the temperature is lower than 5 degrees celcius.
Q34)	a) X: Melting Z: Boiling b) X: √ Y: √ Z: √ c) Some water or ice had been added to the beaker.
Q35)	a) No, it will not. G is an insulator of electricity and no electricity can pass through G, forming an open circuit. Thus, no electricity can flow through the bulb, causing it to remain unlit.

b)



Q36)

a)

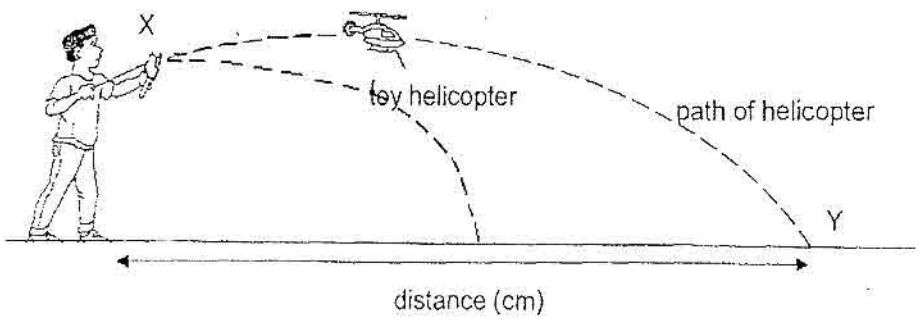


c) He should flip it over such that the North-pole of magnet A is facing North-pole of magnet B. Their like poles will face, causing A and B to repel each other. This will allow A to 'float' above B.

Q37)

a) He launched helicopter A at a different angle for each attempt.

b) Gravitational force and air resistance between the helicopter and the air.



c)

Q38)

a) As the surface area of the parachute increases, the time taken to complete the five meter run also increases.

b) Less than 5.9 seconds. Cutting holes in the parachute reduced the surface area of the parachute exposed to the surrounding air, causing there to have less air resistance between the parachute and the air, enabling peter to run faster then before.

Q39)

a) Light from the television reached Jerry's eyes, allowing him to see the television screen.

b) Position C : 130

c) He must be positioned between Positions A and B.

Q40)

a)

Material	Time taken for iron pin to drop (min)	Put a cross (X)
A	13	
B	9	
C	15	X
D	2	

b) C is the second nearest material to the heat source. It would gain heat faster than A and B, thus causing the wax to melt faster and the pin should take a shorter time to drop as compared to A and B.

c) He can heat each material separately

He can place each material at the same distance from the heat source.

He can provide an identical heater for each material.

Q41)

a) Elastic potential > Kinetic energy + Sound and Heat energy

b) As the number of turns of the key increases, the distance travelled by the toy car also increases.

c) Turn the key a greater number of times than before.

d) All the kinetic energy of the toy car had been converted to sound and heat energy, thus it had no more kinetic energy to move.