METHODIST GIRLS' SCHOOL

Founded in 1887

MID-YEAR EXAMINATION 2018
PRIMARY 6
SCIENCE

BOOKLET A1

Total Time for Booklets A and B: 1 hour 45 minutes

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.
Follow all instructions carefully.
Answer all questions.
Shade your answers in the Optical Answer Sheet (OAS) provided.

Name: _____

Class: Primary 6._____

Date : 8 May 2018

This booklet consists of 10 printed pages including this page.

For each question from 1 to 14, 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 (OAS).

[28 marks]

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1 Samy and his friends, ~~Tim~~, Usha and Vanessa, wanted to find out the conditions needed for mould to grow. They prepared the set-ups as shown in the diagram below.

Set-up A uncooked rice | Set-up B cooked rice | Set-up C cooked rice

The set-ups were kept at the locations and conditions as shown in the table below.

	Set-up A	Set-up B	Set-up C
Location	kitchen	freezer	kitchen
Temperature of location	30°C	0°C	30°C

Three days later, they found mould growing on the rice in Set-up C but not in Set-ups A and B.

Based on their observation, Samy and his friends suggested why mould did not grow in Set-ups A and B.

Samy	There was a lack of moisture in Set-up A.
Tommy	There was not enough warmth in Set-up B.
Usha	There was not enough air in Set-up B.

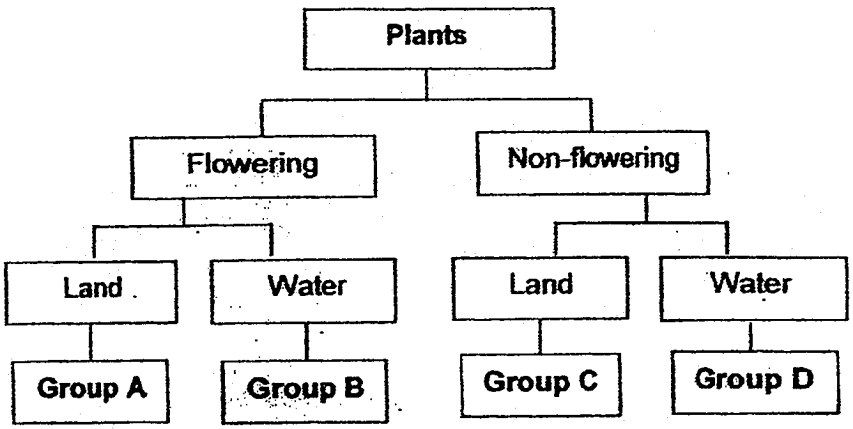
Who made the correct statement(s)?

(1) Samy only
(2) Tommy only
(3) Samy and Tommy only
(4) Samy, Tommy and Usha

2 The table below provides information on the characteristics of four plants, W, X, Y and Z.

	Characteristics	
Plants	**Have flowers**	**Grow in water**
W	Yes	Yes
X	No	Yes
Y	Yes	No
Z	No	No

Which groups, A, B, C or D, would plants W, X, Y and Z be classified correctly?



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

(Go on to the next page)

3 Study the three groups of organisms, A, B and C below.

Group A Group B Group C

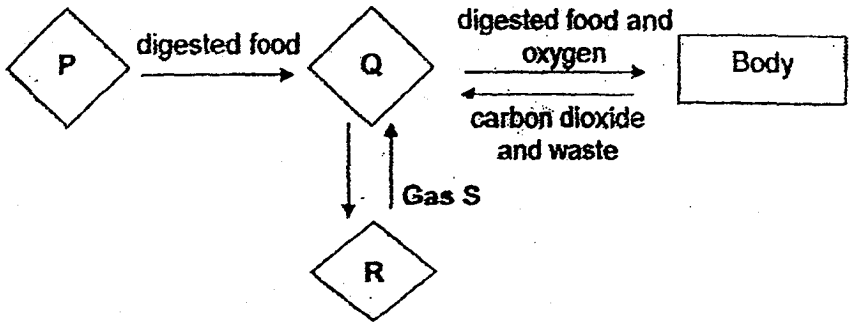
Based on the diagram, some pupils listed the characteristics of the animals in each group in the table below.

Name of pupils	Group	Characteristics
Andy	A	• Lay eggs • Breathe through their moist skin and lungs • Covered with scales
Bala	B	• Give birth to young alive • Breathe through their lungs • Covered with hair
Chris	C	• Give birth to young alive • Breathe through their lungs • Covered with scales

Which pupil(s) had listed the characteristics of the animal group correctly?

(1) Andy only
(2) Bala only
(3) Chris only
(4) Chris and Andy only

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

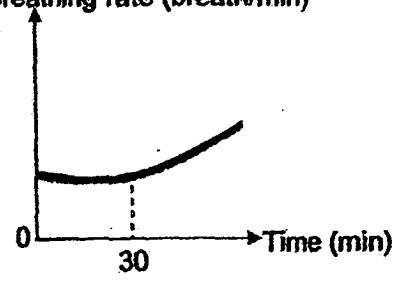


Based on the diagram above, what is Gas S and which systems do P, Q and R represent?

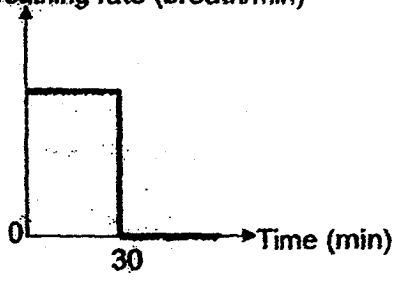
	Gas S	System P	System Q	System R
(1)	oxygen	circulatory	digestive	respiratory
(2)	oxygen	digestive	circulatory	respiratory
(3)	carbon dioxide	digestive	respiratory	circulatory
(4)	carbon dioxide	circulatory	respiratory	digestive

5 Sarah jogged continuously up the hill for thirty minutes and then took a rest. Which graph shows her breathing rate during the jogging session?

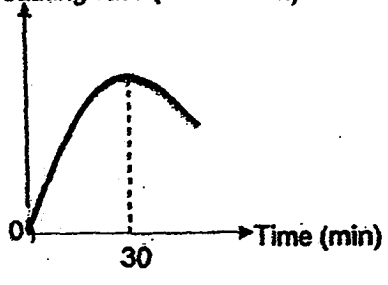
(1) Breathing rate (breath/min)



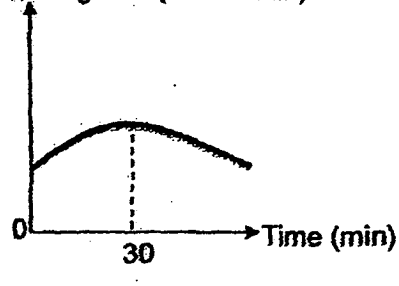
(2) Breathing rate (breath/min)



(3) Breathing rate (breath/min)



(4) Breathing rate (breath/min)



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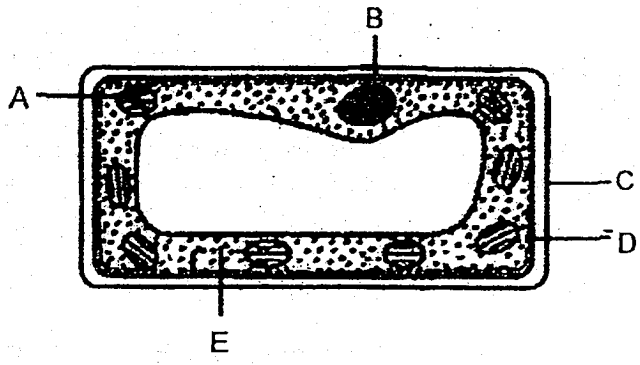
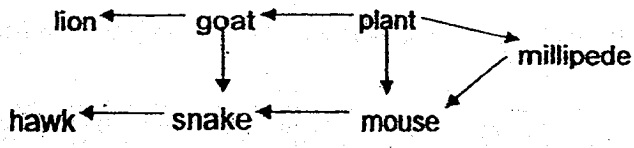
6 Danielle observed the cell of a hydrilla leaf under a microscope as shown in the diagram below. Parts of the cell are labelled as A to E.



Which of the following parts of the plant cells (A to F) have been matched correctly to the information provided in the table?

	Where light energy is being trapped	Controls the movement of substances in and out of the cell	Where the plant gets its traits from
(1)	A	C	B
(2)	E	A	D
(3)	A	D	B
(4)	B	E	C

7 Study the food web shown below.

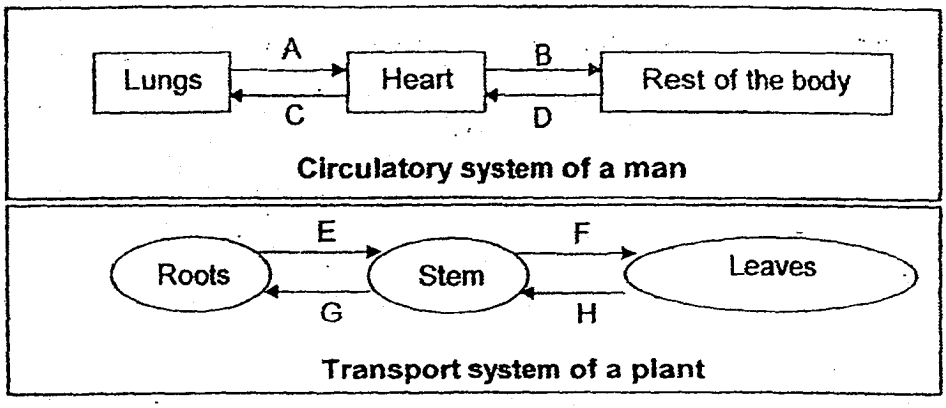


Which of the following statements about the food web are true?

A Only the plant is a food producer.
B The millipede is both a prey and a predator.
C All the organisms except the plant are food consumers.
D A decrease in the population of plant will cause an increase in the populations of the millipede, mouse and goat.

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

8 The diagrams below show how substances are transported in the circulatory system of a man and the transport system of a plant.



Based on the diagrams above, which of the following statements are correct?

W A, B, C, and D carry blood rich in oxygen.
X E and F transport water and mineral salts.
Y G and H transport food made by the leaves.
Z Like the heart, the stem is needed to pump the substances in the plant.

(1) W and X only
(2) X and Y only
(3) Y and Z only
(4) W, X and Y only

9 The table below shows the characteristics of three types of inedible fruits belonging to plants, X, Y and Z.

Plant	Other characteristic of its fruits
X	stiff hair
Y	fibrous husk
Z	wing-like structure

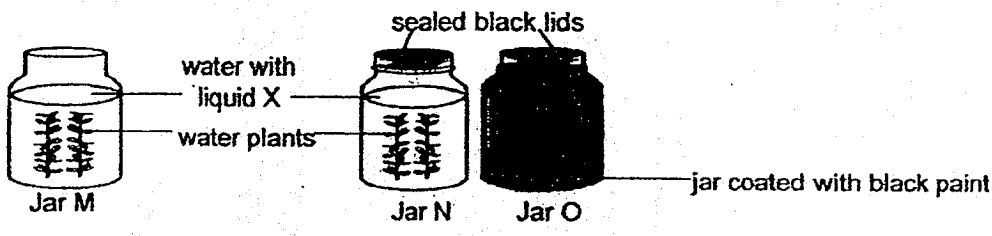
Based on the information above, which of the following statements are true?
The fruits of plant _____.

A X are dispersed by animal
B Y are dispersed by explosive action
C Z are dispersed by wind

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

(Go on to the next page)

10 Janine set up an experiment to compare the amount of carbon dioxide produced by water plants. She used identical glass jars, M, N and O. Each jar contained the same amount and type of water plants and was filled with 500ml of water. An equal amount of liquid X was added to each jar of water. Only Jar O was coated with black paint as shown in the diagram below.



All the set-ups were placed near a window on a sunny day from 9am to 5pm.

The colour of water with liquid X will change when exposed to different amount of carbon dioxide as shown below.

Amount of carbon dioxide in water	higher than normal	normal	less than normal
Colour of water with liquid X	yellow	red	purple

Which of the following shows Janine's observation of the colour of water with liquid X correctly at the end of the experiment?

	Jar M	**Jar N**	**Jar O**
(1)	yellow	red	purple
(2)	red	yellow	yellow
(3)	yellow	yellow	purple
(4)	purple	purple	yellow

11 Penguins are warm-blooded animals.

Which of the following are [redacted] adaptations that allow them to cope with the cold environment?

A Wings modified into flippers.
B Huddling themselves together.
C Thick layer of fat under the skin.
D Steamlined body to swim faster.
E Closely-packed overlapping feathers.

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

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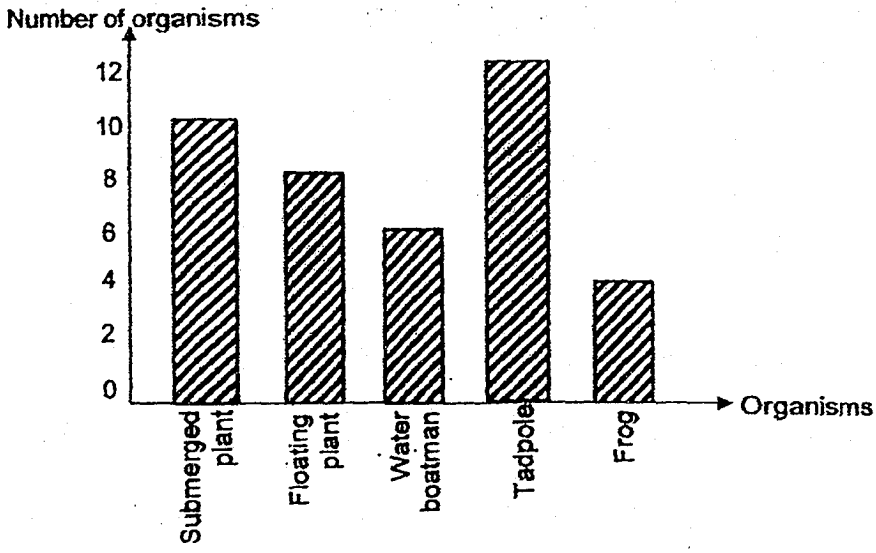
12 Siti counted the number of plants and animals in her pond. Her findings are shown in the graph below.



Which of the following statements are true?

A The populations of the different organisms above form a habitat.
B There are at least five populations of animal and plants.
C There are at least ten animals at the adult stage.
D There are at least two populations of plants.

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

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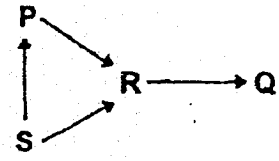
13 Study the food web below.



The following diagrams show the feet of Animals Q and R

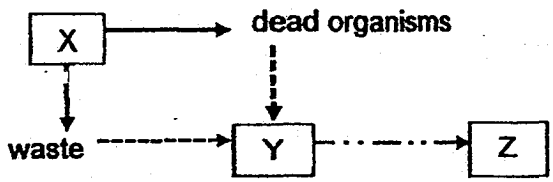
foot of Animal Q

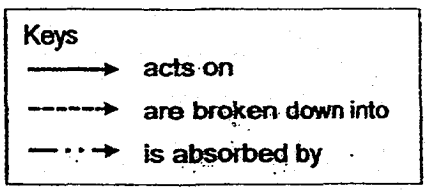
foot of Animal R

Which one of the following shows the correct classification of Animals Q and R?

	Animals					
	Herbivore		Carnivore		Omnivore	
	Can swim	Cannot swim	Can swim	Cannot swim	Can swim	Cannot swim
(1)				Q	R	
(2)			Q			R
(3)	R			Q		
(4)		R	Q			

14 The diagram below shows how nutrients can be recycled back to the environment.





Which of the following best represent X, Y and Z respectively?

	X	Y	Z
(1)	bacteria	mineral salts	plants
(2)	fungi	plants	mineral salts
(3)	mineral salts	bacteria	plants
(4)	plants	mineral salts	fungi

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METHODIST GIRLS' SCHOOL

Founded in 1887

MID-YEAR EXAMINATION 2018

PRIMARY 6

SCIENCE

BOOKLET A2

Total Time for Booklets A and B: 1 hour 45 minutes

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.
Follow all instructions carefully.
Answer all questions.
Shade your answers in the Optical Answer Sheet (OAS) provided.

Name: _____

Class: Primary 6._____

Date : 8 May 2018

This booklet consists of 12 printed pages including this page.

For each question from 15 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 (OAS).

[28 marks]

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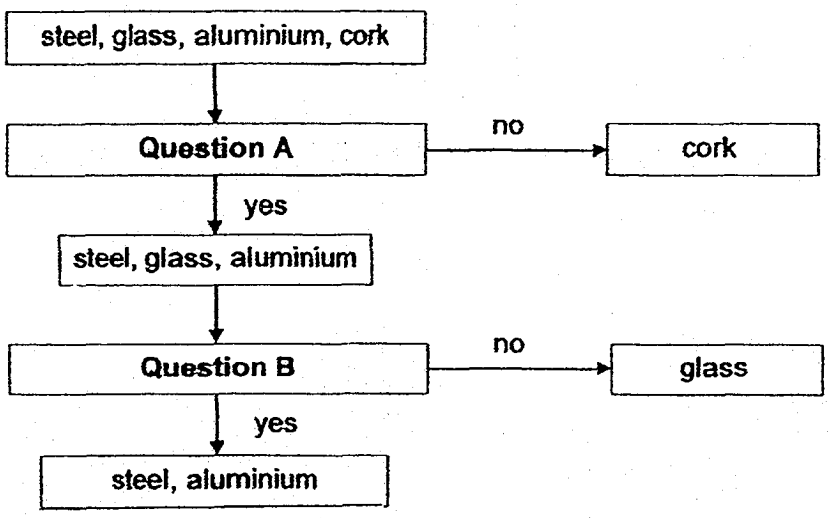
15 Study the flow chart below carefully.



What are the two questions, A and B?

	Question A	Question B
(1)	Will it sink in water?	Is it magnetic?
(2)	Will it float on water?	Is it strong?
(3)	Will it sink in water	Does it conduct electricity?
(4)	Will it float on water?	Does it conduct electricity?

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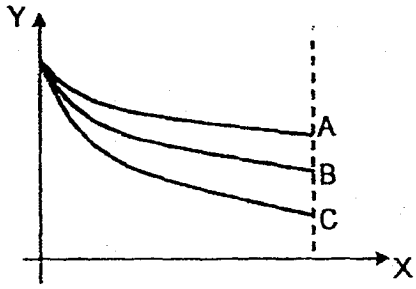
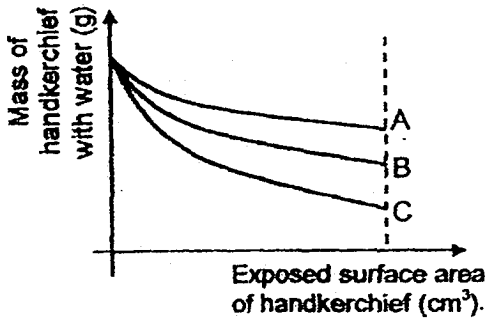
16 Jolene hung three identical handkerchiefs, A, B and C, containing the same amount of water to dry in the sun. Each handkerchief was folded to expose a different amount of surface area. The three handkerchiefs were weighed after half an hour. Jolene plotted her results on a graph.

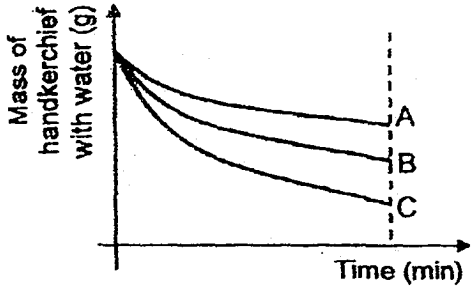


Which one of the following gives the correct labels for X and Y of the graph plotted by Jolene?

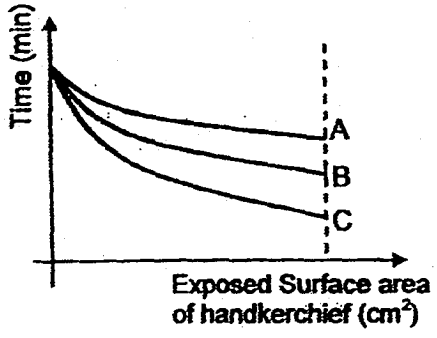
(1)



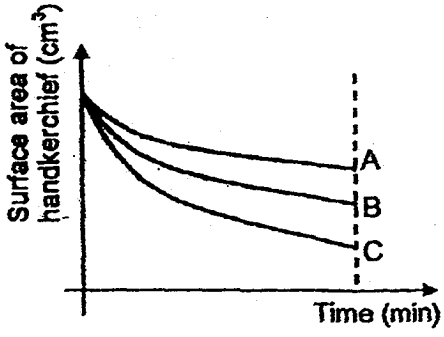
(2)



(3)



(4)



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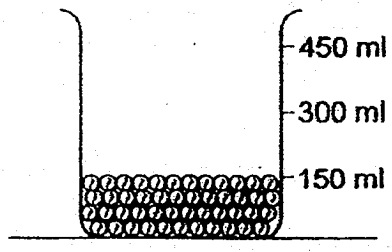
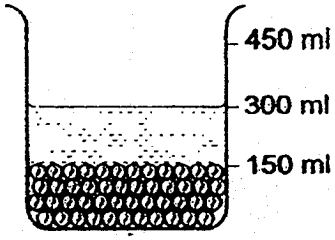
17 Ali filled a beaker with marbles up to the 150 ml mark as shown below.

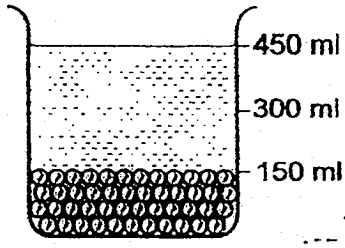


He then poured 300 ml of water into the beaker. Which one of the following diagrams correctly shows the water level in the beaker?

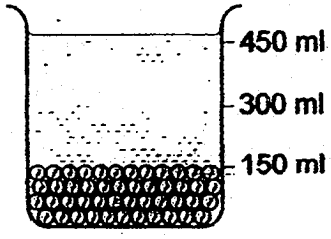
(1)



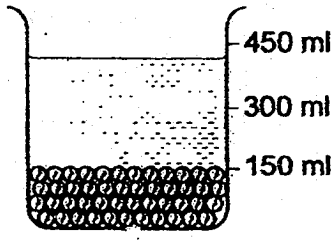
(2)



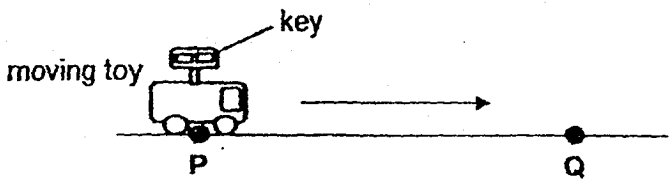
(3)



(4)



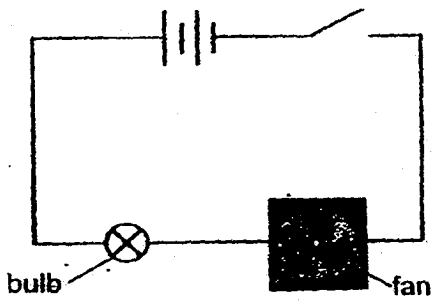
18 A wound-up toy, at position P was moving forward until it stopped at position Q.



Which one of the following statements about the toy car is true?

(1) The toy has more potential energy at P compared to Q.
(2) The toy stopped at Q because it had used up all its energy.
(3) The toy stopped at Q because there was no force acting on it.
(4) The toy slowed down as it moved to Q because frictional force increased.

19 Study the set-up below.



Which of the following correctly shows the main energy conversion when the switch is closed?

(1) Electrical energy ⟶ Light energy ⟶ Kinetic energy
(2) Electrical energy ⟶ Light energy + Kinetic energy
(3) Potential energy ⟶ Electrical energy ⟶ Light energy + Kinetic energy
(4) Potential energy ⟶ Electrical energy ⟶ Light energy ⟶ Kinetic energy

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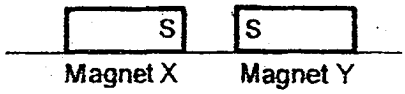
20 Two magnets, X and Y, were held close together with their south poles as shown below.

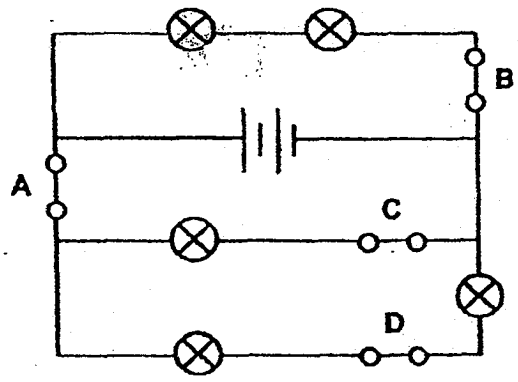


When Magnet X was released, it moved along the surface of the floor.

Which of the following shows the direction of the magnetic force acting on Magnet X and the direction of the gravitational force acting on Magnet Y?

	Magnetic force acting on X	Gravitational force acting on Y
(1)	→	←
(2)	←	↓
(3)	→	↓
(4)	←	→

21 Mrs Lee set up an electric circuit with switches, A, B, C and D, as shown below. All the bulbs lit when all the switches are closed.

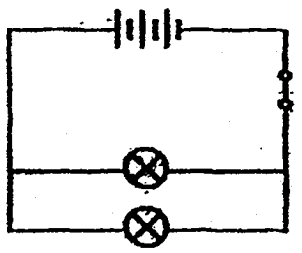


Mrs Lee wanted the fewest number of bulbs to be lit by opening one switch Which switch should she open?

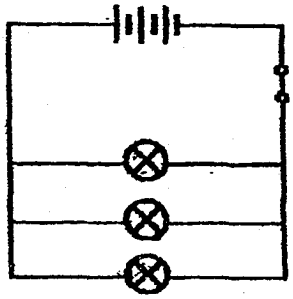
(1) A
(2) B
(3) C
(4) D

22 All the circuits below have identical batteries and bulbs which are in good working condition.

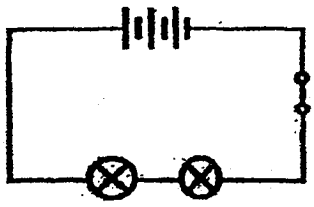
A



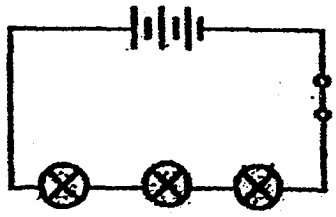
B



C



D



In which circuit(s) will the bulbs be lit the brightest?

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

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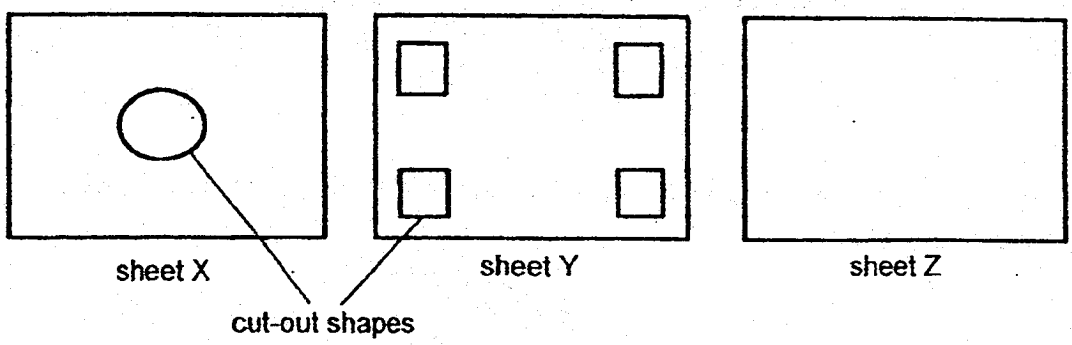
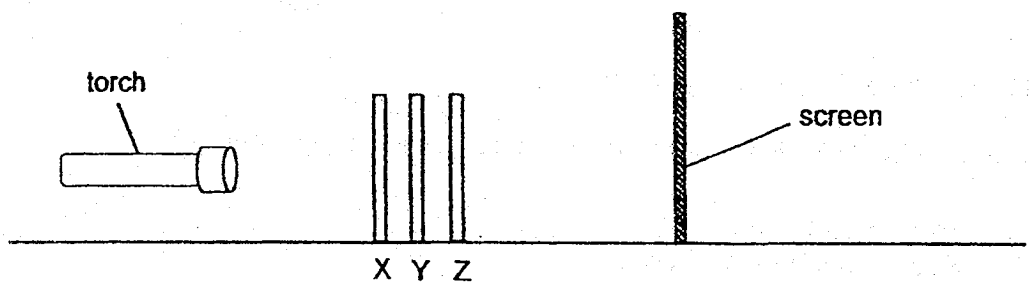
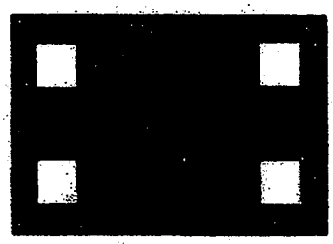
23 Mr Aziz had three different sheets of materials that were of the same size. He cut out shapes from sheets X and Y as shown below.



Then he arranged the three sheets in a straight line and shone a torch on them to observe the shadow formed on the screen.



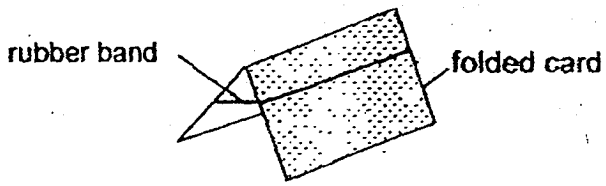
The shadow observed on the screen was shown below.



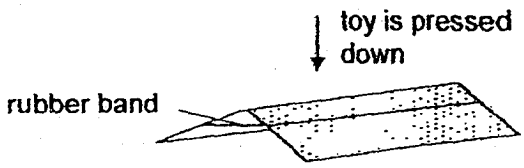
Which one of the following correctly identifies the material of each sheet?

	Sheet X	Sheet Y	Sheet Z
(1)	clear plastic	wood	frosted glass
(2)	clear glass	metal	clear plastic
(3)	frosted plastic	frosted glass	clear glass
(4)	ceramic	styrofoam	clear plastic

24 Zac made a jumping toy using a folded card and a rubber band fastened to both ends as shown below.



He pressed the toy down on the floor as shown in the diagram below. Then he released the toy.



He observed that the toy jumped up.

Which of the following changes below could make the toy jump higher?

A Use a bigger card.
B Use a thicker rubber band.
C Add one more rubber band.
D Press the toy flatter on the floor.

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

EXAM PAPER 2018(P6)

SCHOOL : MGS

SUBJECT : SCIENCE

TERM : SA1

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

29)a)It has a breathing tube to take in oxygen from the air.

b)Yes I do. Adding a layer of oil would prevent the mosquito larva's breathing tube from receiving any oxygen from the surrounding air, as oxygen from the surrounding air would not be able to pass through the oil, depriving the organism of sufficient oxygen, killing it.

c)To increase the chance of survival of the young into adulthood.

d)Its population will increases as the increase in temperature will reduce the number of days for the mosquito to complete its life cycle.

30)a)As the surface area of the paper increases, the time taken for it to reach the ground also increases.

30)b)Squirrel X. The stretched loose skin provided a larger surface area which would increase air resistance, allowing it to stay longer in the air.

c)i)Its ability to stay longer in the air allowed it to escape from its predators better.

ii)Having stretched loose skin allowed it to land on the ground safely and travel further to look for food.

d)Like the loose skin, the material provided the glider with a larger surface area to increase friction and keep him afloat longer in the air.

31)a)i)R ii)S iii)T

b)Animal Q was the predator and animal T was the pray.

c)The population of animal S increased. When animal Q was introduced, Q fed on T, decreasing the population of T. As T is the only predator for S, there were less T to feed on S, increasing the population of S.

32)a)To increase the reliability of the experiment's results.

b)The number of bubbles produced is higher indicating that more oxygen is produced through photosynthesis.

c)Stefanie must measure the distance between the torch and the beaker and then count the number of bubbles released over a fixed period of time. After that she must change the distance between the troch and the beaker in order to change the light intensity.

d)Graph A. As the amount of light increased the rate of photosynthesis increased which caused more oxygen to be released as bubbles.

33)a)Predators of the spider would think that it is bird-droppings and would not consume it.

b)Organism D. As the spider hunts at night, it is not possible for the spider to be a herbivore.

Q34 (a) In a hot environment, when water is scarce, the leaves curl up to decrease their exposed surface area, reducing the rate of water loss to the surroundings.

(b) As the upper surface of the leaves is waxy, the water droplets would roll down the leaf to the drip tips, which would allow the water droplets to roll off the leaf, reducing the chances of the plant being waterloosed.

(c) Part Y. The waxy leaf allows water to roll off the leaf quickly, ensuring that the stomata on the upper surface of the leaf is not covered, reducing the chances of the plant sinking.

Q35 (a) Waterproof and denser than water.

(b) Material Y as it is strong enough to withstand the weight of 40kg before it sinks it is waterproof.

(c) Material W as as wood can float and is absorbent.

Q36 (a) Set-up P. The water in set-up P has a greater exposed surface area than the water in set-up Q, speeding up the rate of evaporation, allowing more water to be collected in the beaker in P than Q.

(b) Ice cubes would increase the temperature difference between the water vapour and the plastic sheet, speeding up the rate of condensation.

Q37 (a) Pot B. Pot B was placed in pot C and there was air between the two pots. As air is a poor conductor of heat the heat from pot B was transferred to the surrounding air less quickly than pot A.

(b) The dense layer of fur would trap more air, keeping animal S warm as air is a poor conductor of heat so it reduces heat loss to the surroundings.

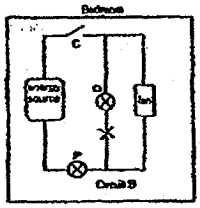
Q38 (a) When an opaque object was blocking the path of the laser, the light sensor could not receive any light, causing the buzzer to ring.

(b) The customer would block the laser, just like the opaque styrofoam board and the metal sheet, blocking the sensor from the light, making the buzzer ring, alerting Mr Chow.

(c) **The three-year-old child was not tall enough to block the laser, so the sensor could receive light, thus it did not ring.**

Q39 (a) **Circuit A. A has two switches while B has one. With two switches, the lights and the fan would be able to be controlled separately, allowing Mr Ravi to save electricity.**

(b)



(c) **If bulb Q fused, the fan would still be able to be turned on.**

Q40 (a)

(b) When the ball hit struetures A and B, some of the kinetic energy was converted into heat and sound energy.

(c) Tilting the gameboard allowed the pinball to have more gravitational potential energy than before which would be converted to more kinetic energy.

(d) Faster. Adding powder reduced the friction between the ball and the gameboard, allowing the ball to move faster.

Q41 (a) **Spring B. When the same weight was added to both springs, spring B had a greater extension than spring A.**

(b) **Spring D is not elastic enough and was not able to be stretched by the weight / reached its elastic limit.**

(c) **Spring C as the spring was compressed after a weight was added to it.**