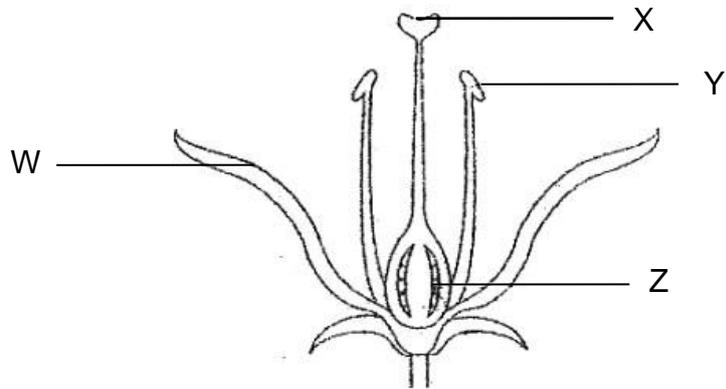


SECTION A: (28 x 2 MARKS)

For questions 1 to 28, four options are given. Choose the correct answer for each question and shade its appropriate answer in the Optical Answer Sheet (OAS) provided.

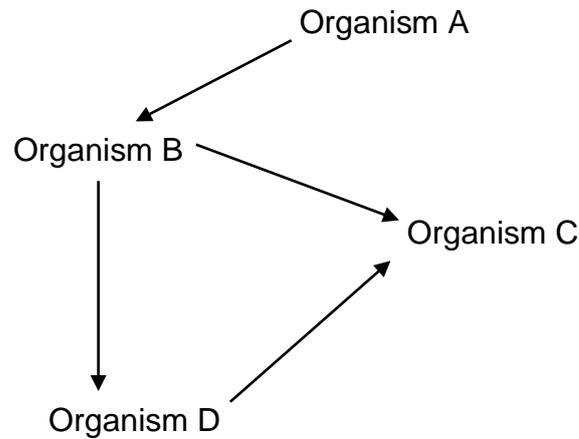
1. The diagram below shows a cross-section of a flower.



Which part of the flower does fertilisation take place?

- (1) W
- (2) X
- (3) Y
- (4) Z

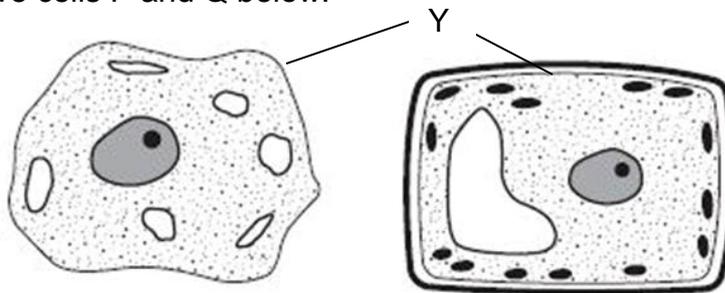
2. Study the food web below.



Based on the food web, which of the following statements about the organisms is correct?

- (1) Organism C is the food producer.
- (2) Organism D is both a predator and a prey.
- (3) There are four consumers in the food web.
- (4) Organism B gets its energy from other animals.

3. Observe cells P and Q below.



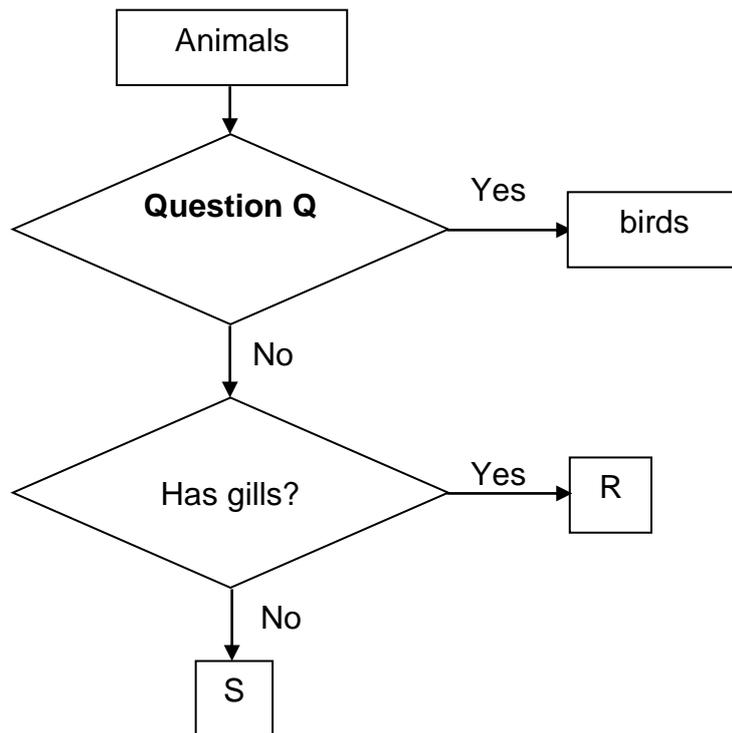
Cell P

Cell Q

Which of the followings correctly identify cells P and Q and the function of Part Y?

	Cell P	Cell Q	Function of Part Y
(1)	Plant cell	Animal cell	Allows movement of substances in and out of cell
(2)	Plant cell	Plant cell	Give the cell its shape
(3)	Animal cell	Plant cell	Give the cell its shape
(4)	Animal cell	Plant cell	Allows movement of substances in and out of cell

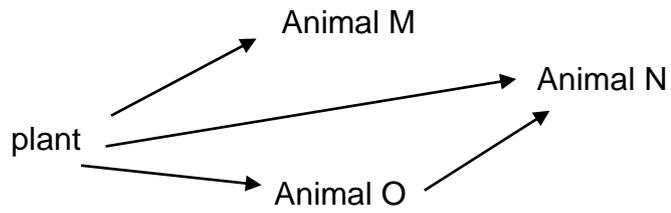
4. Study the flow chart below.



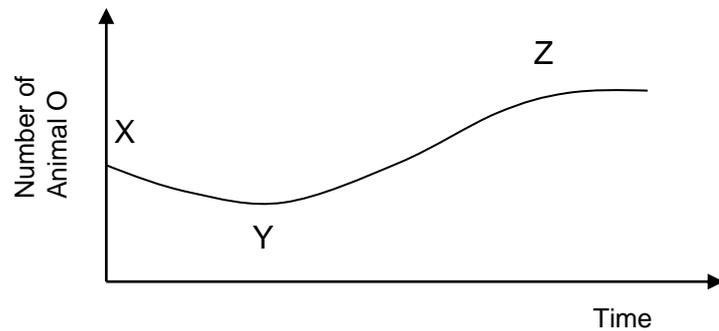
Which of the following correctly represents Question P, B and C?

	Question Q	R	S
(1)	Have feathers?	fish	bird
(2)	Give birth?	reptile	fish
(3)	Lay eggs?	amphibian	insect
(4)	Breathe through lungs?	reptile	bird

5. Study the food web shown below.



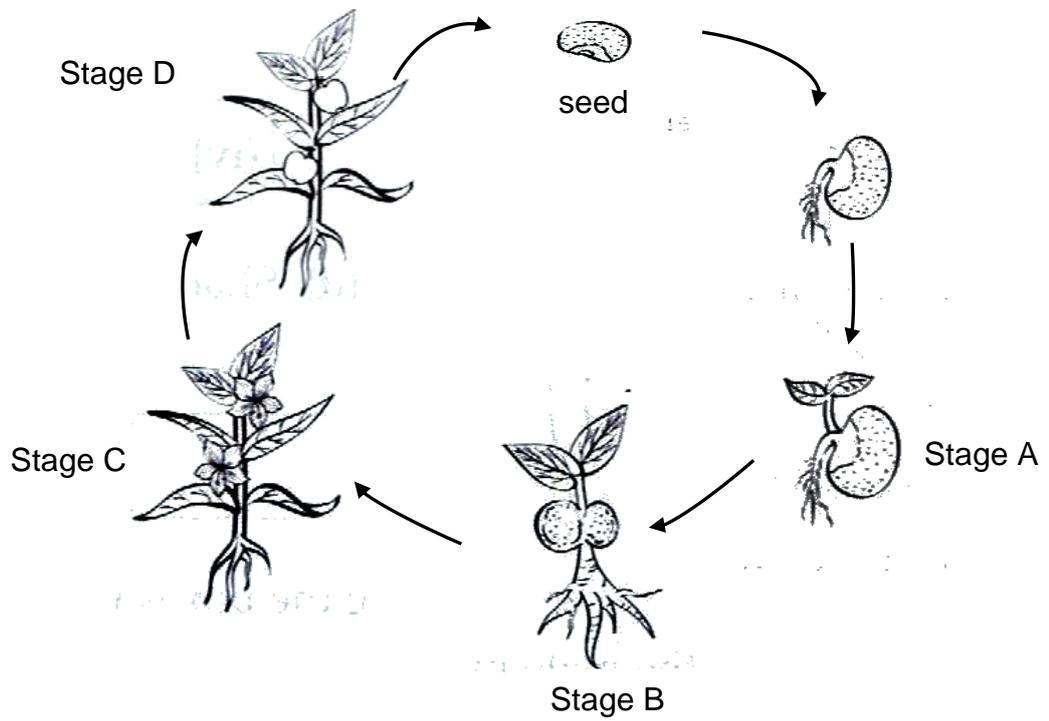
The graph below shows the number of Animal O over time.



Which of the following correctly explains the change in number of Animal O during XY and YZ?

	XY	YZ
(1)	Removal of Animal N from the habitat	Addition of plant to the habitat
(2)	Removal of Animal M from the habitat	Addition of Animal N to the habitat
(3)	Addition of Animal N to the habitat	Removal of Animal N from the habitat
(4)	Addition of Animal M to the habitat	Removal of plant from the habitat

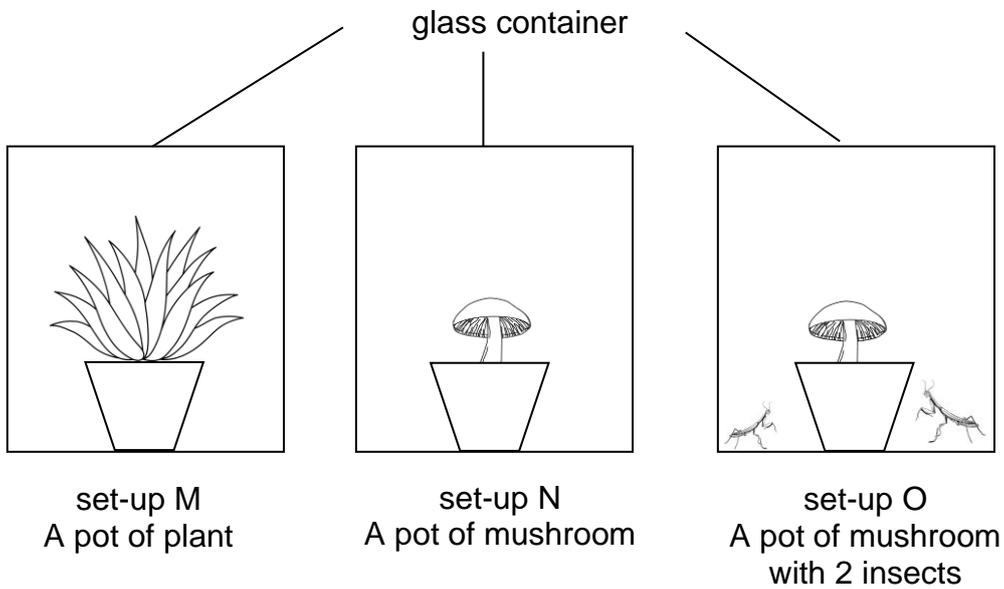
6. The diagram below shows the growth stages of a plant.



At which state would the most number of pollinators be seen at the plant?

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

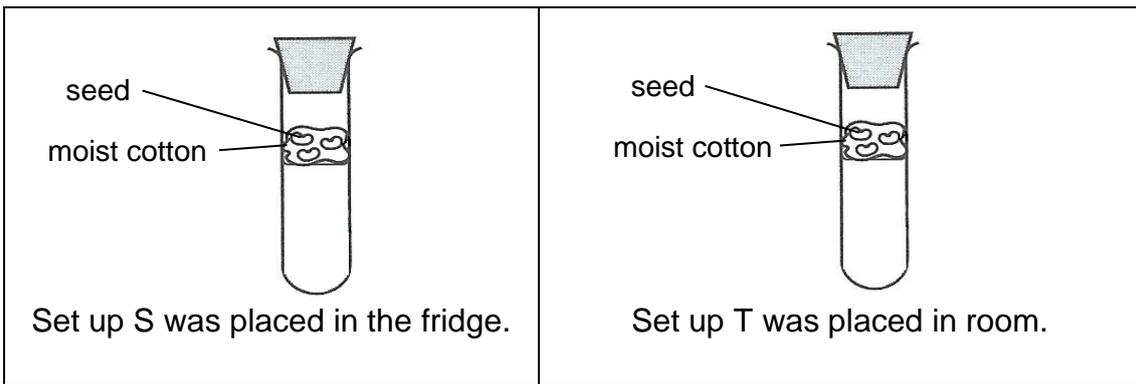
7. The diagrams below show three set-ups M, N and O placed under the sun.



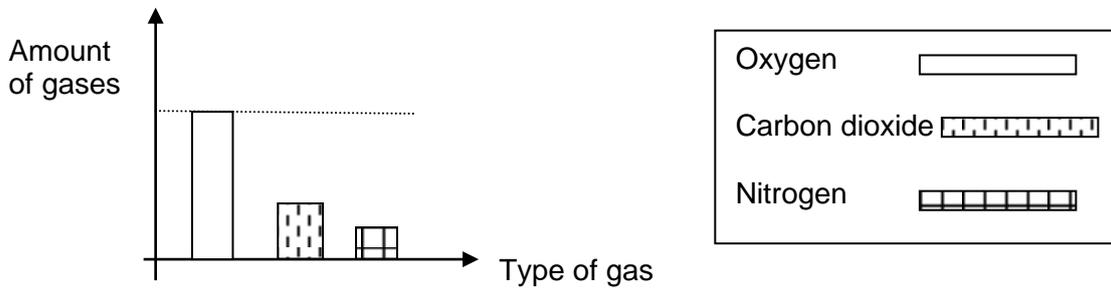
Which of the following correctly arranges the amount of oxygen in the glass container after two days?

	Least amount of oxygen	→	Most amount of oxygen
(1)	M		O
(2)	O		M
(3)	N		M
(4)	O		N

8. The seeds in set-up S and T were given different conditions to germinate.

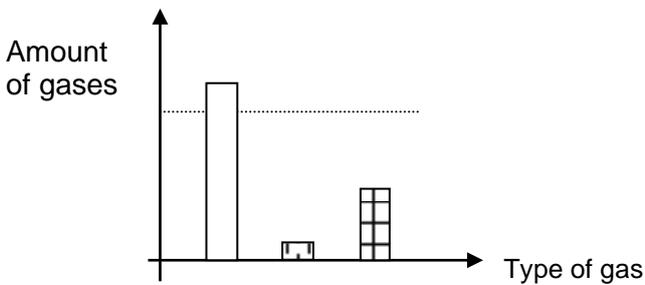


At the end of two days, the amount of oxygen, carbon dioxide and nitrogen in set-up S is shown in the graph below.

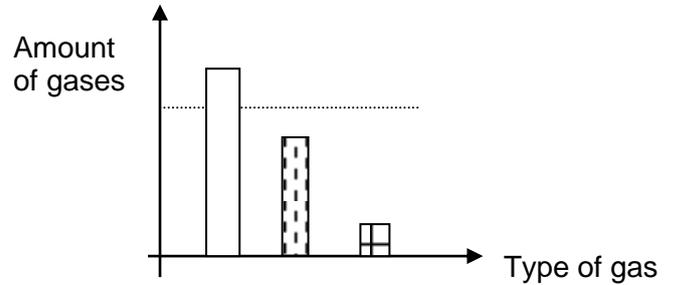


Which of the following graphs shows the amount of oxygen, carbon dioxide and nitrogen in set-up T?

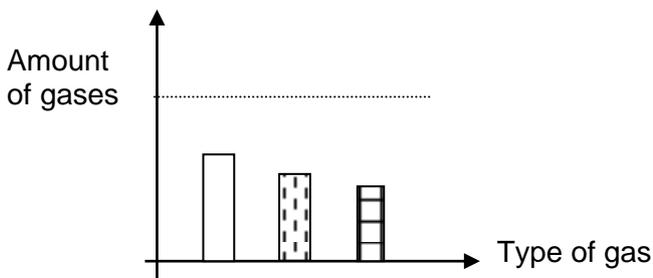
(1)



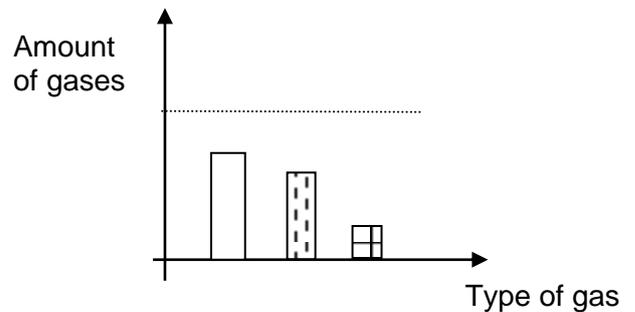
(2)



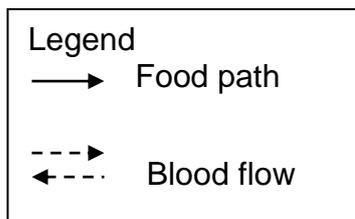
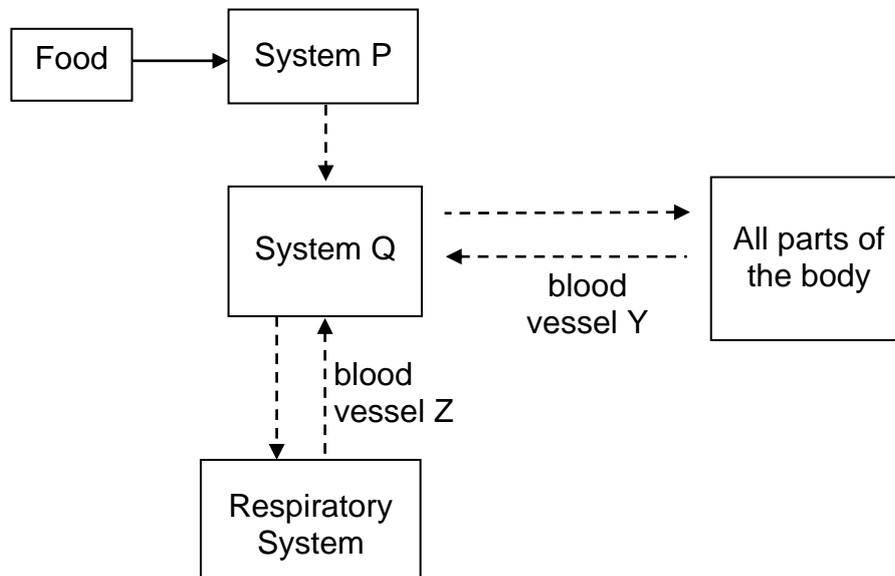
(3)



(4)



9. The chart below shows how food and air is transported in the blood around the body.

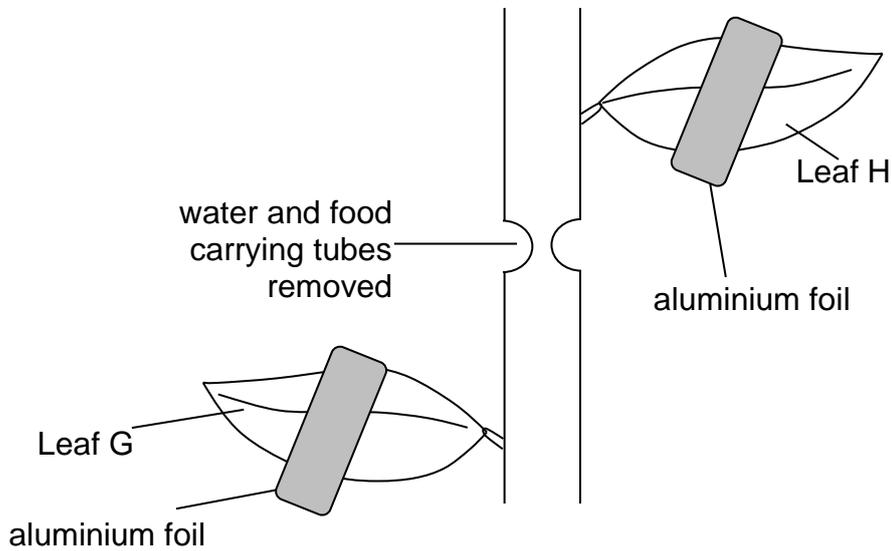


Identify Systems P, Q, and Gases Y and Z.

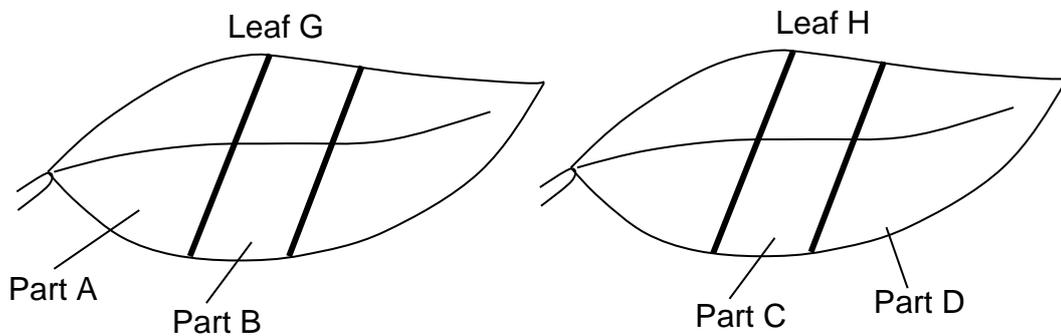
	System P	System Q	Blood vessel Y	Blood vessel Z
(1)	Circulatory system	Skeletal system	Rich in oxygen	Rich in Carbon dioxide
(2)	Digestive system	Circulatory system	Poor in oxygen	Poor in carbon dioxide
(3)	Digestive system	Circulatory system	Poor in carbon dioxide	Poor in oxygen
(4)	Circulatory system	Digestive system	Rich in carbon dioxide	Rich in oxygen

10. A plant had a ring of its water and food carrying tubes removed as shown below. The plant was watered daily.

Leaf G and H were partially covered with aluminium foil on both its sides.



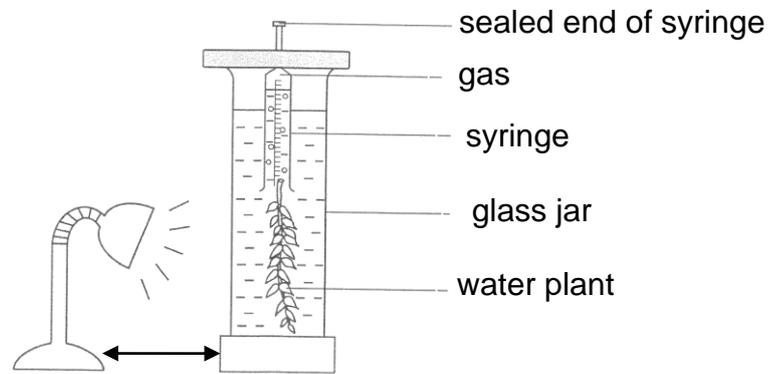
After three days, leaf G and H was tested for starch using iodine solution. Iodine solution turns blue black in the presence of starch.



Which part(s) of the leaf would the iodine solution turn blue black?

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

11. Sarah carried out an experiment to find out how distance from lamp, d , affects the rate of photosynthesis. She had four set-ups with different distances in a dark room. One of her set-ups is as shown below.



distance from lamp, d

She left the four set-ups on the table for one day and measured the height of the gas collected in the syringe.

Set-up	Volume of gas collected in syringe/cm ³
A	3
B	2
C	1
D	5

Based on her data, which of the following correctly arrange the set-up according to the distance between the lamp and glass jar, starting with the nearest d ?

	Nearest d \longrightarrow Furthest d			
(1)	C	A	D	B
(2)	C	B	A	D
(3)	D	B	A	C
(4)	D	A	B	C

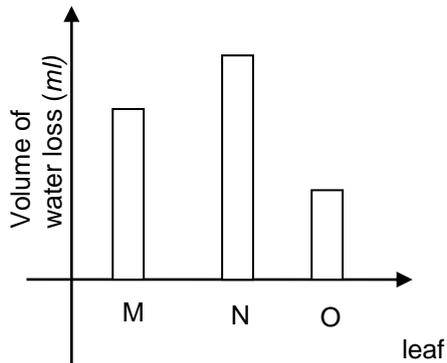
12. Zaki set up an experiment using three similar leaves, M, N and O on the same plant. These leaves have more stomata on the upper surface than the lower surface.

She coated some surfaces of the leaves with oil and placed the plant under bright sunlight as shown in the table below.

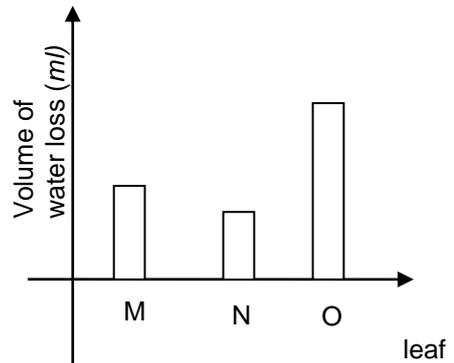
Leaf	Coated with oil	
	Upper surface	Lower surface
M	No	Yes
N	Yes	Yes
O	Yes	No

Which one of the following correctly shows the volume of water loss from the leaves?

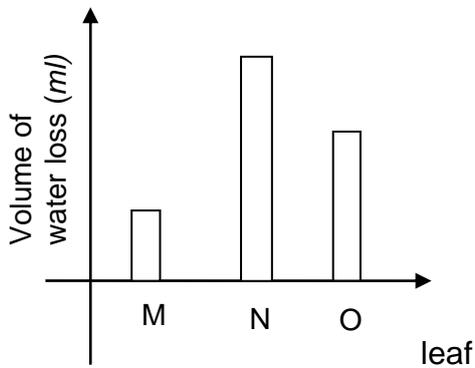
(1)



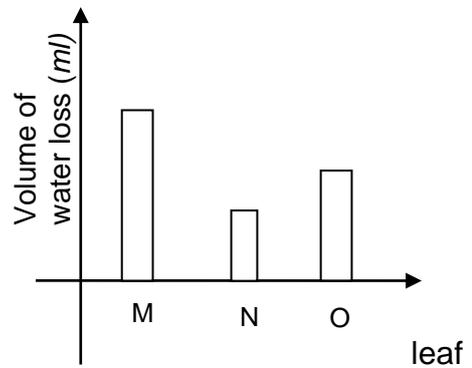
(2)



(3)



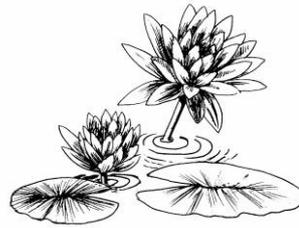
(4)



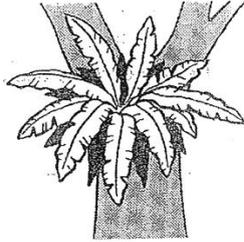
13. Study the organisms below.



mushroom



water lily plant



bird's nest fern

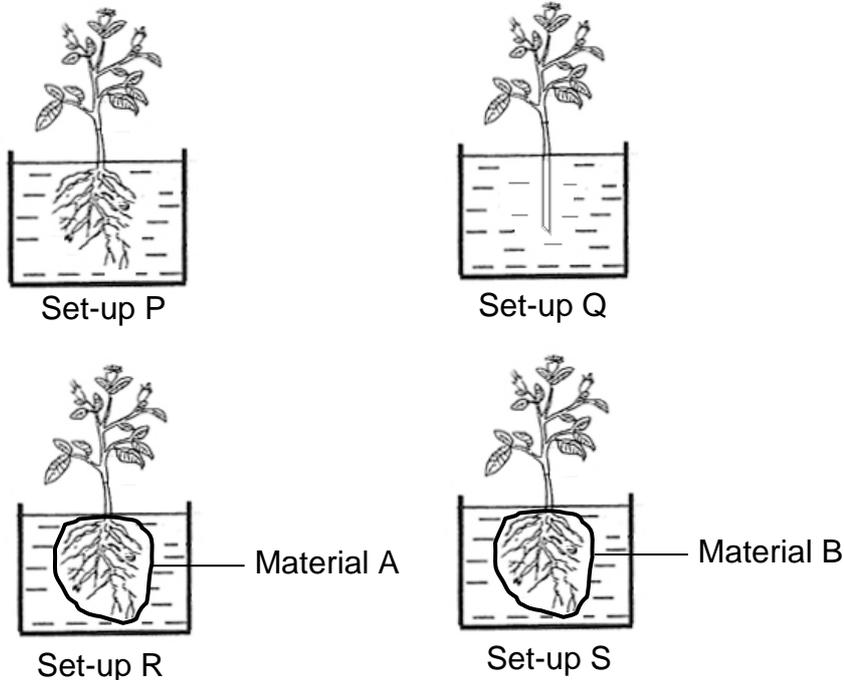


cactus

Which of the following organisms cannot make its own food?

- (1) cactus
- (2) mushroom
- (3) bird's nest fern
- (4) water lily plant

14. Johan placed four plants in red coloured water in set-ups P, Q, R and S. The roots in set-up Q were removed while the roots in set-up R and S were wrapped with material A and B as shown below.



After 2 days, she cut the stem of each of the plant and drew her observations.

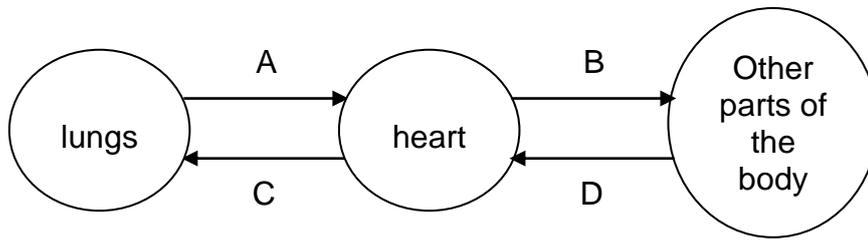
Set-up P	Set-up Q	Set-up R	Set-up S
water-carrying tube stained red	water-carrying tube stained red	water-carrying tube not stained	water-carrying tube stained red

Which of the following can be inferred from the observations above?

- A Material A is waterproof.
- B Material B is waterproof.
- C The stem transports water to the flowers.

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

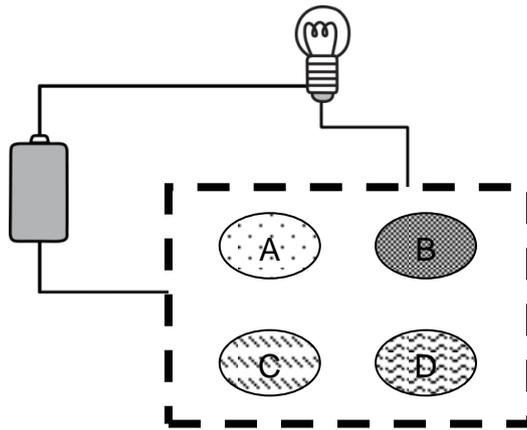
15. The diagram below represents the flow of blood in a human circulatory system.



Which of the following statements correctly describes the blood flowing in the blood vessels?

- (1) There is no oxygen in C.
- (2) C has the most amount of carbon dioxide.
- (3) D is rich in oxygen while B is poor in oxygen.
- (4) A is rich in carbon dioxide while B is poor in carbon dioxide.

16 A circuit is connected to objects A, B, C and D, which are hidden in a box.



The objects were connected to see if the bulb can light up.

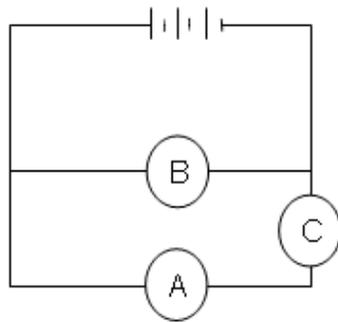
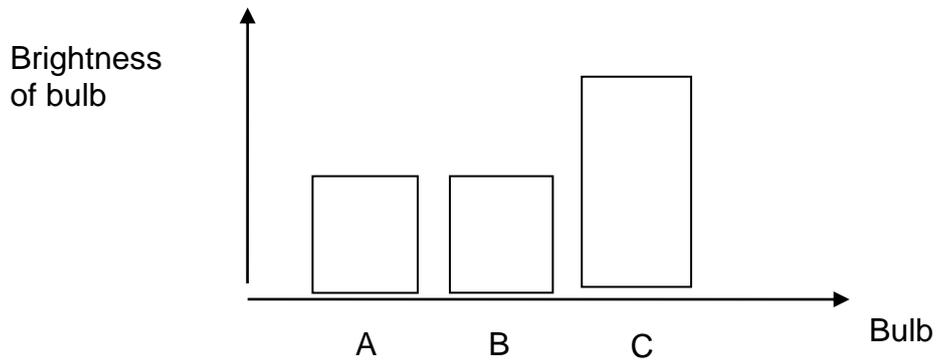
Objects connected	Did the bulb light up?
A and B	Yes
B and D	Yes
C and D	No

Which of the following is likely the material of objects A, B, C and D?

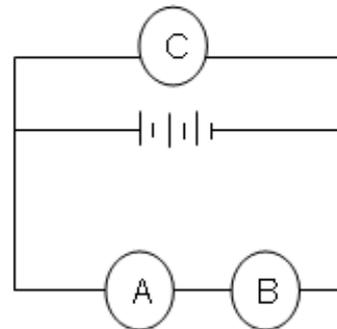
	A	B	C	D
(1)	Ceramic	Steel	Rubber	Aluminium
(2)	Rubber	Ceramic	Copper	Steel
(3)	Aluminium	Copper	Rubber	Steel
(4)	Steel	Rubber	Aluminium	Ceramic

()

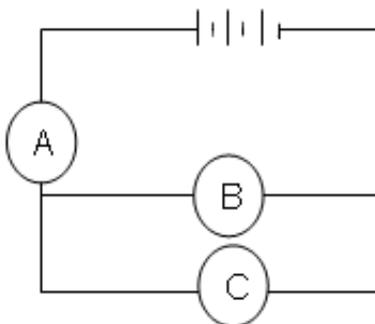
- 17 Gani set up a circuit using some wires, three bulbs, A, B and C and three batteries. He then plot the graph below to show the brightness of the bulb.



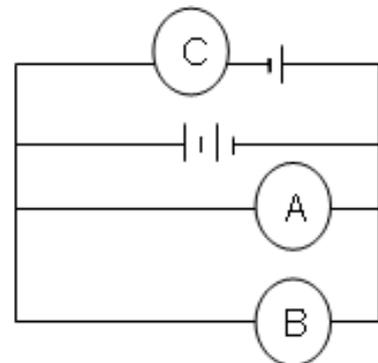
Circuit W



Circuit X



Circuit Y



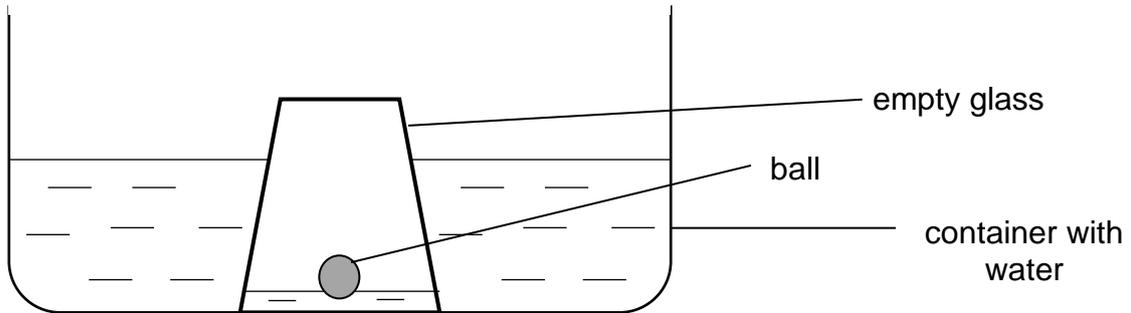
Circuit Z

Which of the above circuits, W, X, Y or Z correctly represents the graph shown?

- (1) W and Y
- (2) W and Z
- (3) X and Y
- (4) X and Z

()

- 18 Leman lowered an empty glass with a small ball into a container of water until it touched the bottom of the container. The ball still floated as shown below.

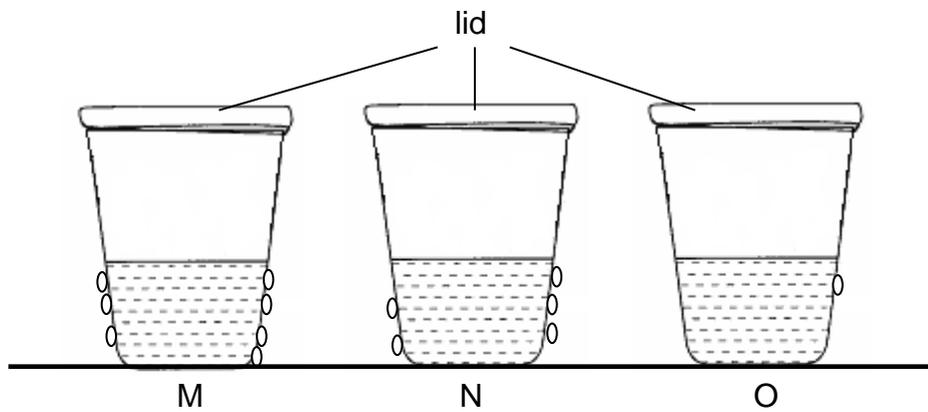


What could be the reason for the difference in the water level inside and outside the glass?

- (1) The ball in the glass occupied space.
- (2) The air trapped in the glass occupied space.
- (3) The ball pushed the water out from the glass.
- (4) The air trapped in the glass does not have a fixed shape.

()

- 19 Ali has three identical glasses of water, M, N and O. The temperature of the water in the glasses was 10°C at the start. Ali then placed the glasses in three different locations for 3 minutes and noticed that some water droplets were formed on the glasses as shown below.

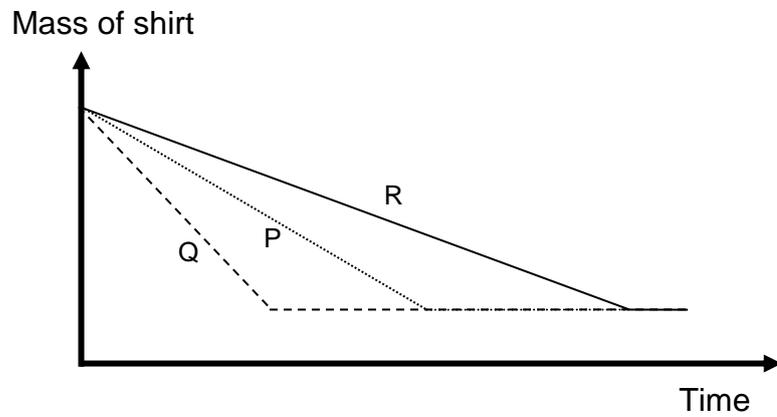


If cup N was placed in a room at 20°C, which of the following is likely the temperature of the location where glasses M and O were placed during the 3 minutes?

	M	O
(1)	40°C	15°C
(2)	10°C	30°C
(3)	15°C	10°C
(4)	30°C	40°C

()

- 20 Three identical shirts, P, Q and R were soaked with the same amount of water. The shirts were placed under the sun to dry. The graph below shows the change in the mass of the shirts over a period of time.



Which of the following correctly shows how the shirts, P, Q and R were folded to dry under the sun?

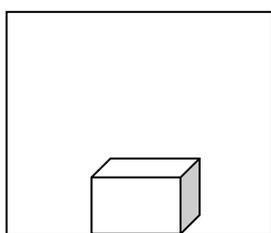
	Shirt P	Shirt Q	Shirt R
(1)			
(2)			
(3)			
(4)			

()

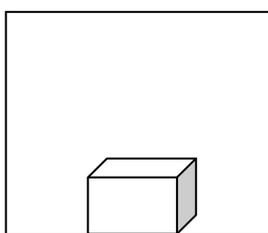
- 21 The table below shows the melting and boiling point of three substances S, T and U.

Substances	S	T	U
Melting point/ °C	16	3	60
Boiling point/ °C	117	50	220

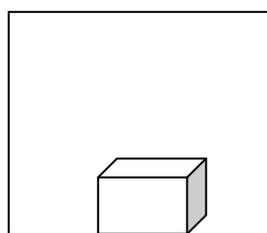
Callie froze the three substances and put them into three identical sealed containers.



S

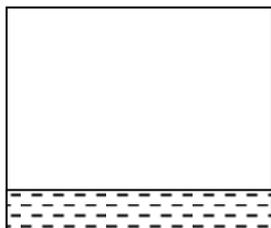


T

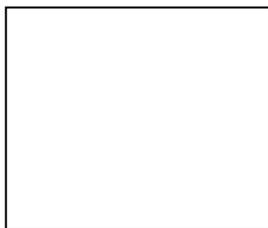


U

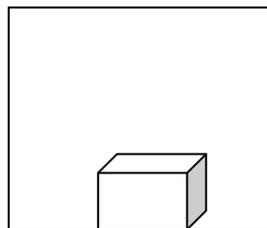
She then heated up the containers to $X^{\circ}\text{C}$ and observed the following in the containers.



S



T



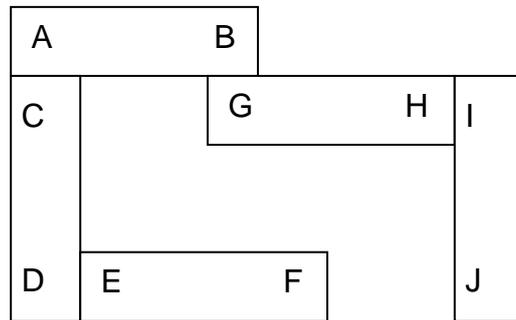
U

Which of the following is likely to be $X^{\circ}\text{C}$?

- (1) 15°C
- (2) 45°C
- (3) 55°C
- (4) 75°C

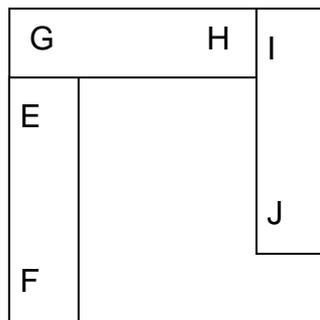
()

22 Five bar magnets with their ends marked A to J can be arranged as shown below.

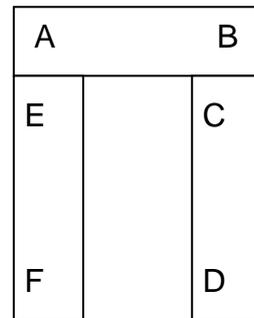


Which one of the following diagrams shows an arrangement of the magnets that is **not** possible?

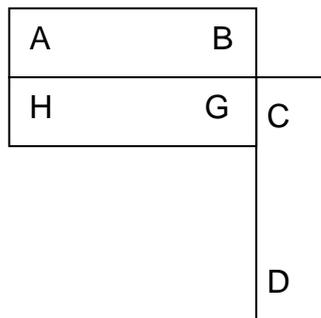
(1)



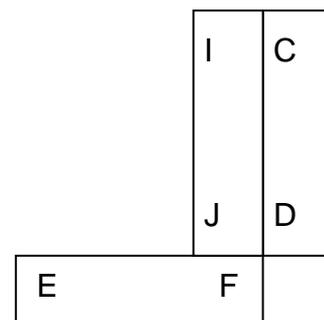
(2)



(3)

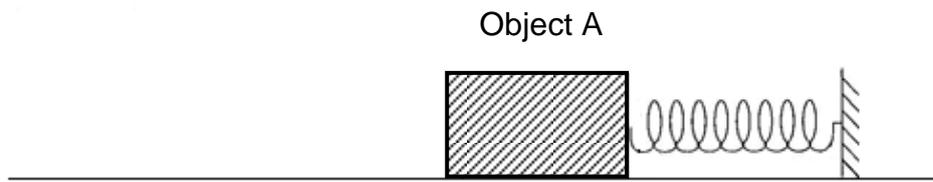


(4)

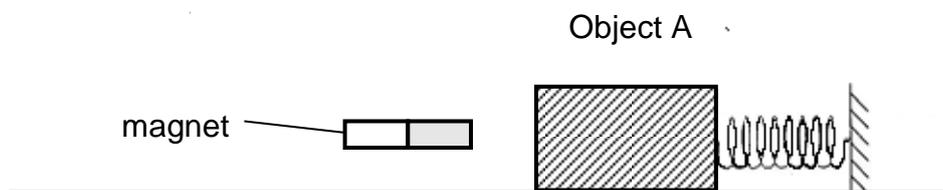


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23 Lena placed object A on the table in front of a spring as shown below.



She then placed a magnet near Object A and it moved as shown below.

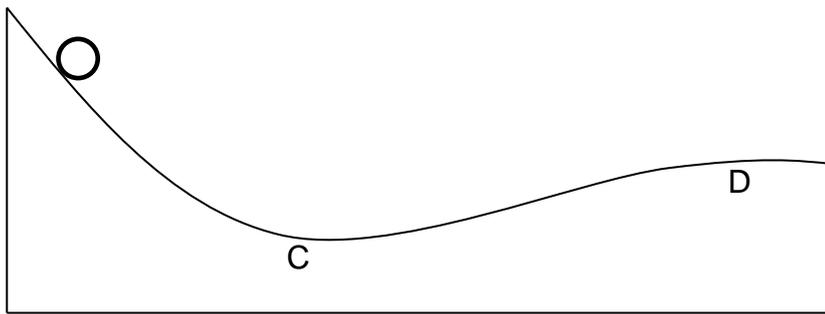


Which of the following correctly shows the direction of force acting on Object A?

	Magnetic Force	Elastic Spring Force	Frictional Force
(1)	→	←	→
(2)	←	→	←
(3)	→	←	←
(4)	←	→	→

()

24 The diagram below shows a ball rolling on a ramp.

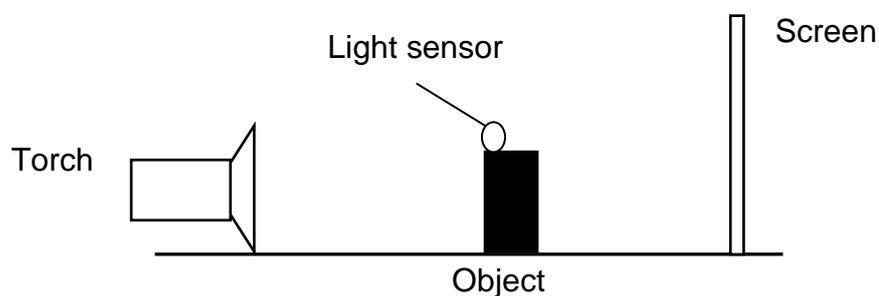


Which of the following correctly describes the ball as it moves from C to D?

	Gravitational Force	Gravitational Potential Energy
(1)	Remains the same	Increase
(2)	Remains the same	Decrease
(3)	Increase	Remains the same
(4)	Decrease	Increase

()

25 Pak Saat used the set-up below to conduct an experiment. He used a light sensor to measure the amount of light on the screen.



He changed the position of one of the items in the set-up and recorded his observations for each position as follows.

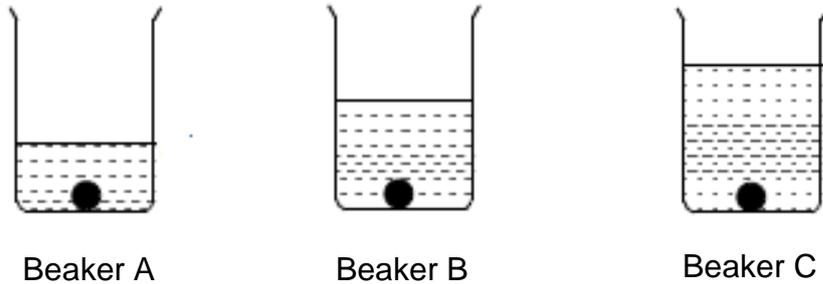
Height of Shadow (cm)	Light sensor reading (units)
190	19
150	19
120	19
100	19

What change did Pak Saat made?

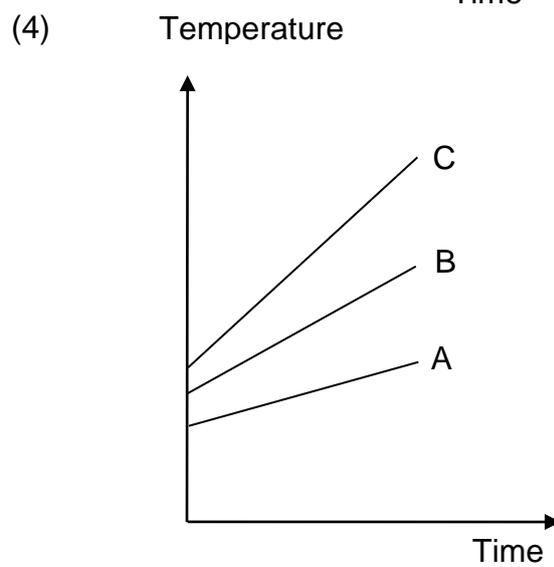
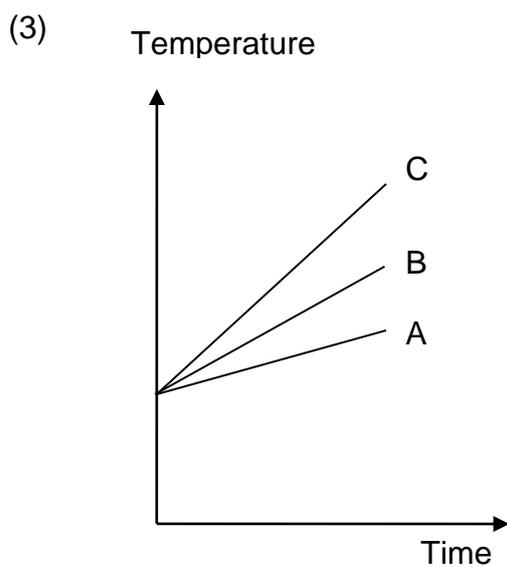
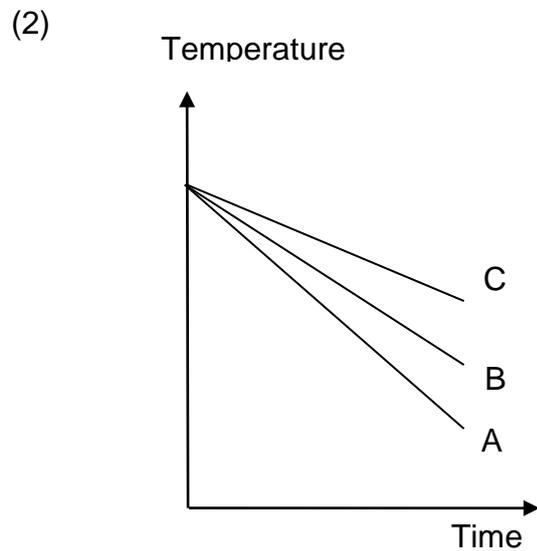
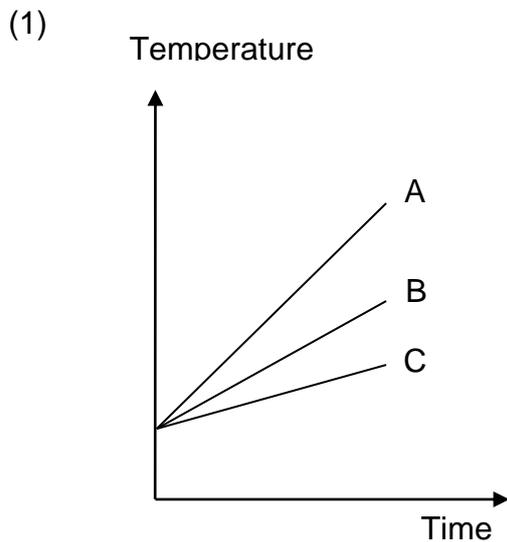
- (1) The torch was moved nearer to the object.
- (2) The screen was moved nearer to the object.
- (3) The torch was moved further away from the object.
- (4) The screen was moved further away from the object.

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26 Three identical metal balls were heated to 100°C . The three metal balls were then dropped into three beakers of water, A, B and C, each containing different amount of water at room temperature.

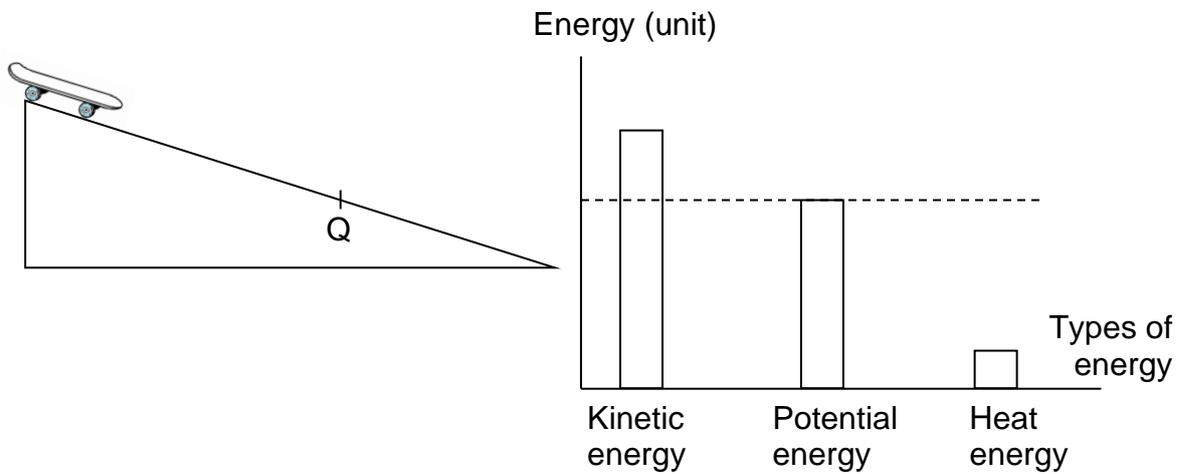


Which graph best represents the change in the temperature of the water in the three beakers after the metal balls has been added?

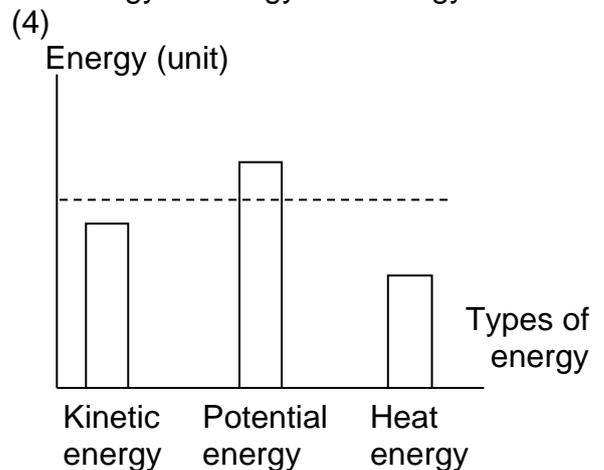
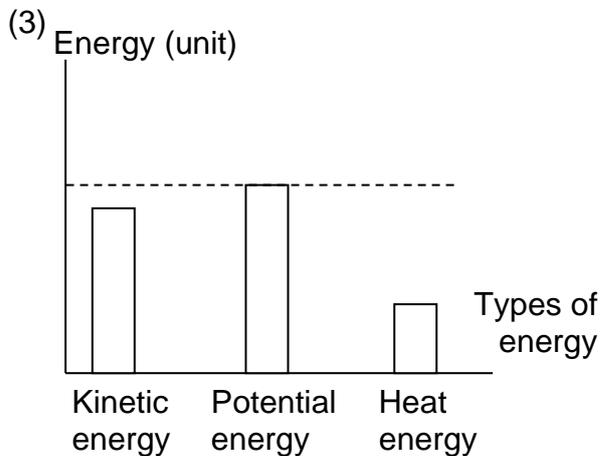
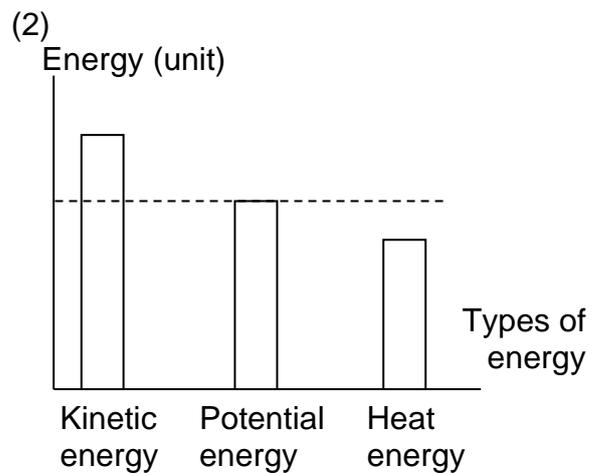
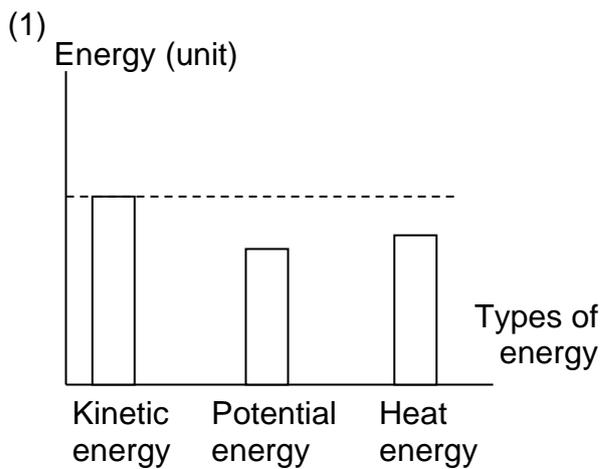


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27 Johann released a skateboard down a slope as shown in the diagram below. The graph shows the amount of different types of energy of the skateboard at point Q.



He poured some sand on the ramp and released the skateboard. Which graph shows the amount of different types of energy at point Q after the sand was poured?



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- 28 Siti can reach the second floor of a shopping centre from the first floor by climbing the stairs or using the lift.



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

- A She does not gain gravitational potential energy by climbing the stairs.
 - B She uses more chemical potential energy to climb the stairs than taking the lift.
 - C She gains more gravitational potential energy by climbing the stairs than taking the lift.
 - D The gravitational potential energy she gained is the same whether she climbs the stairs or takes the lift.
- (1) B only
- (2) B and D only
- (3) A and C only
- (4) A, C and D only