

Name: \_\_\_\_\_ ( )

Class: Primary 6 \_\_\_\_\_

# CHIJ ST NICHOLAS GIRLS' SCHOOL



**Primary 6**  
**Preliminary Examinations – 2016**  
**SCIENCE**  
**BOOKLET A**  
**25 August 2016**

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

**30 questions**  
**60 marks**

**Do not open this booklet until you are told to do so.**  
**Follow all instructions carefully.**  
**Answer all questions.**

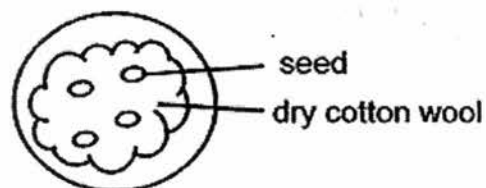
***This booklet consists of 22 printed pages.***

**Section A (30 x 2 marks = 60 marks)**

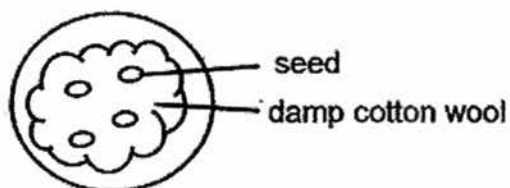
For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet provided.

1. Tom set up an experiment as shown in the diagram below.

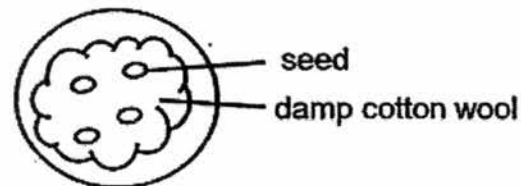
Left in the garden



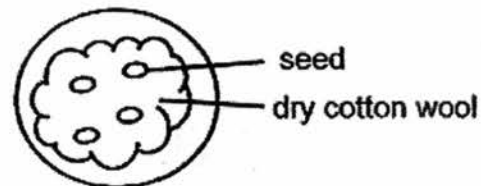
Left in the garden



Left in an enclosed cardboard box



Left in an enclosed cardboard box



At the end of the experiment, it was observed that the seeds grew into seedlings in some of the set-ups but not in others.

From this experiment, Tom was trying to find out if \_\_\_\_\_.

- (1) seeds need light to germinate
- (2) seedlings need light for photosynthesis
- (3) seedlings need water and light to germinate
- (4) seeds need water and light to grow into seedlings

2. Which of the following activities will contribute to global warming?

- A Using wind turbine to obtain electricity
- B Burning of crops to clear land for farming
- C Turning off the lights when they are not in use
- D Having more cars and motorcycles on the roads

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

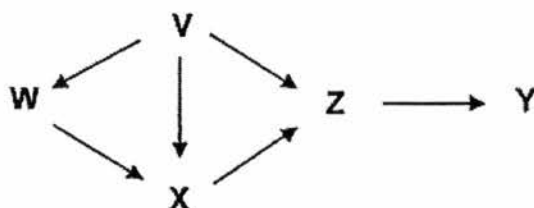
3. The list below shows some adaptations of penguins.



- A They huddle together for warmth.
- B In summer, they stand on their heels to further reduce heat loss.
- C Their streamlined bodies allow them to swim rapidly through water
- D Their black backs and white bellies camouflage the penguin from predators when it is in the water.

Which of the above are behavioural adaptations?

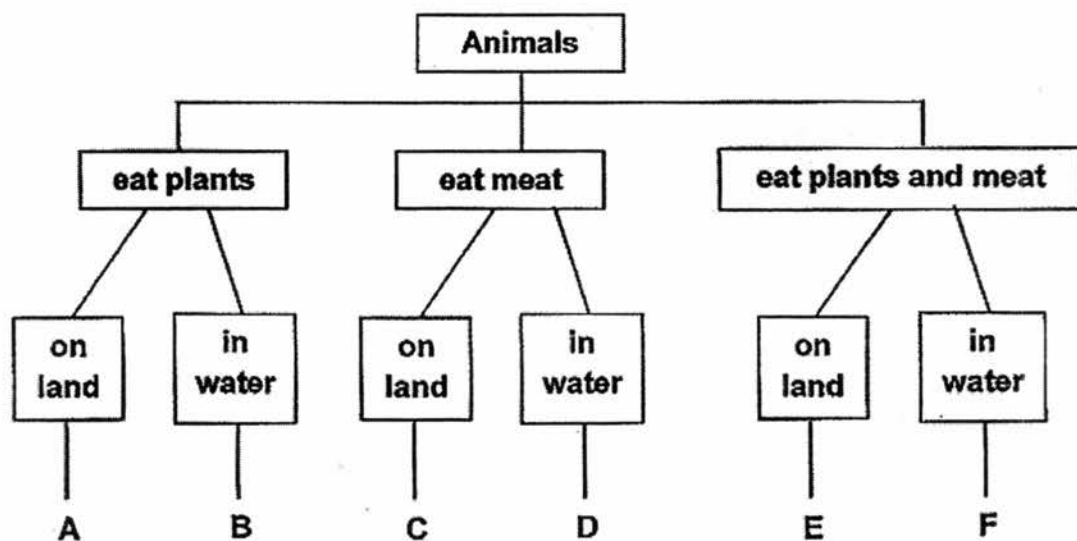
- (1) A and B only
- (2) A and C only
- (3) B and D only
- (4) C and D only

4. The diagrams below show a food web and the feet structures of two animals.



Feet structure of animal X	Feet structure of animal Y
	

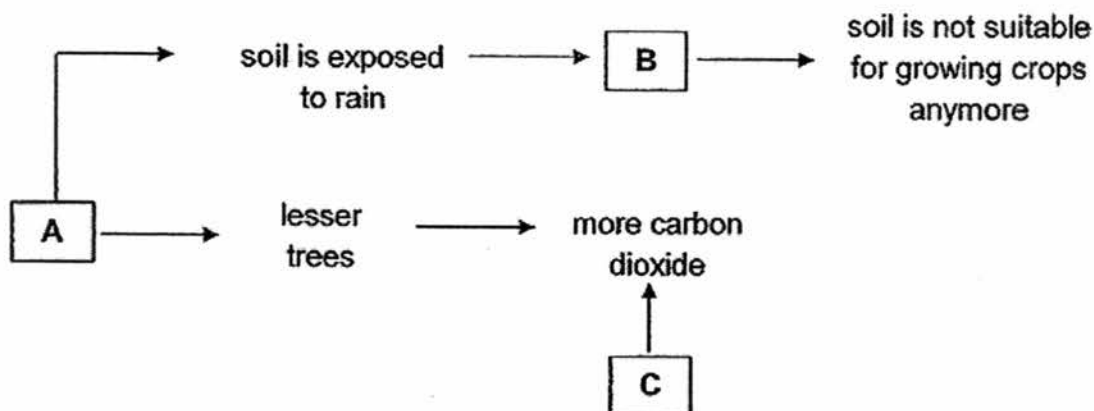
Study the classification chart below.



Which of the following shows how animals, X and Y, should be classified?

	Animal X	Animal Y
(1)	B	C
(2)	E	A
(3)	F	C
(4)	D	E

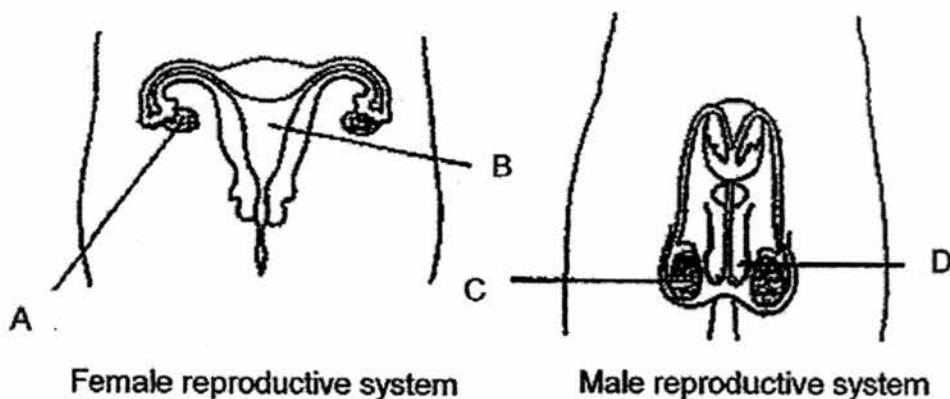
5. The diagram below shows Man's activities which affect the environment.



Which one of the following is correctly represented by A, B and C?

	A	B	C
(1)	burning of fossil fuels	global warming	deforestation
(2)	soil erosion	burning of fossil fuels	deforestation
(3)	global warming	deforestation	soil erosion
(4)	deforestation	soil erosion	burning of fossil fuels

6. The diagram below shows the female and male reproductive systems.



Which of the parts, A, B, C or D, will produce the cells that are necessary for human reproduction to take place?

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

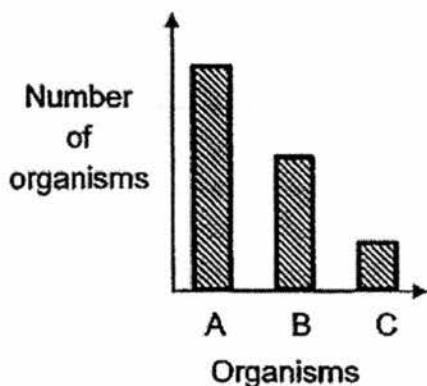
7. The characteristics of three organisms, A, B and C, are presented in the table below. A tick (✓) represents the presence of the characteristic.

Characteristics	Organisms		
	A	B	C
Preys on other animals		✓	
Moves around freely		✓	✓
Produces food	✓		

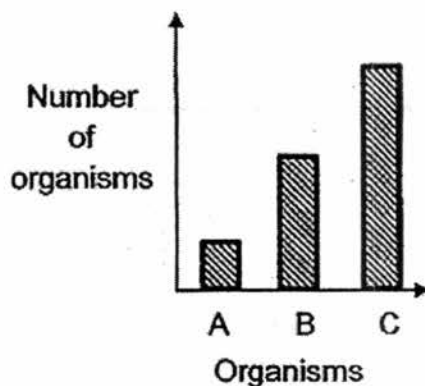
The graphs below show the number of organisms, A, B and C, present in a community.

Which one of the graphs correctly represents organisms, A, B and C?

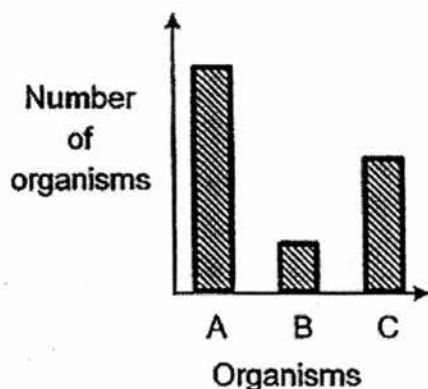
(1)



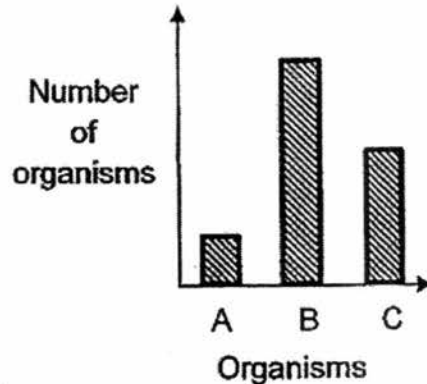
(2)



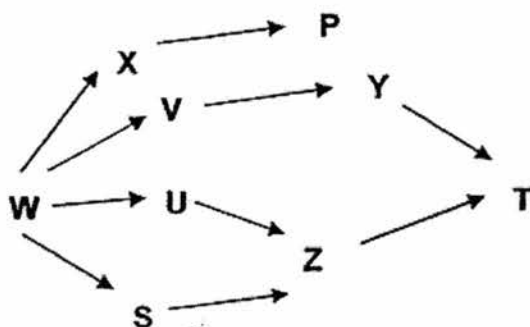
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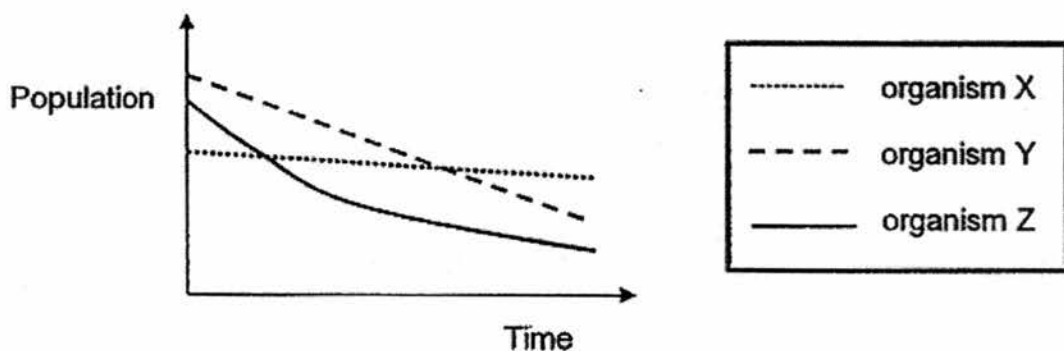
(4)



8. Study the food web below.



The graph below shows the population of organisms, X, Y and Z over a 2-month period.

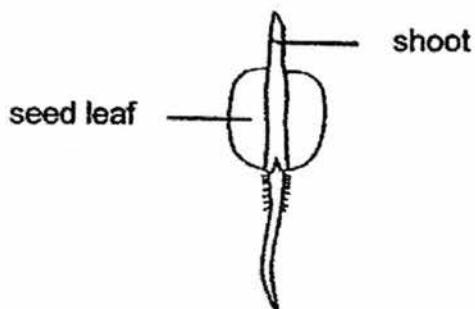


Based on the graphs, which one of the following is the most possible cause for the change in the population of organisms, X, Y and Z?

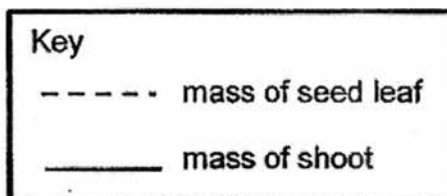
- A A decrease in the population of W
- B An increase in the population of T
- C A decrease in the population of P
- D An increase in the population of V

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

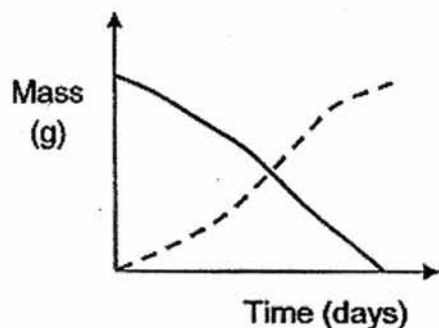
9. Mary carried out an experiment on a seed growing into a seedling as shown below.



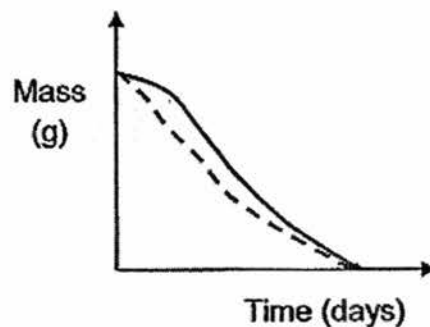
Which one of the following graphs shows the changes in the mass of the shoot and the mass of the seed leaf during the experiment?



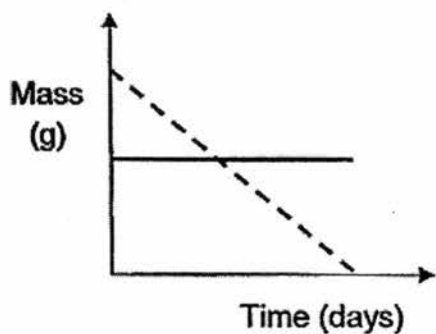
(1)



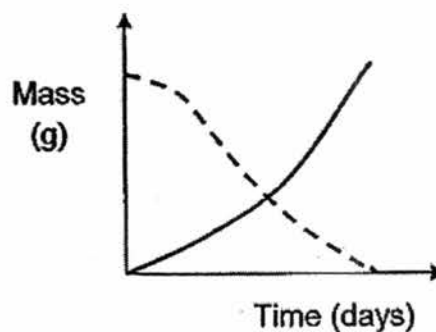
(2)



(3)



(4)





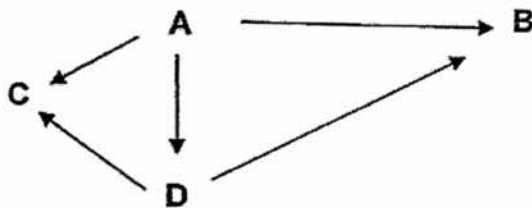
10. Cheryl made some statements about decomposers as shown below.

- A Fungi and centipedes are decomposers.
- B Decomposers feed on dead plants only.
- C Carbon dioxide is given out during decomposition.
- D Decomposers break down dead matter into simpler substances.

Which of the statements about decomposers are correct?

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

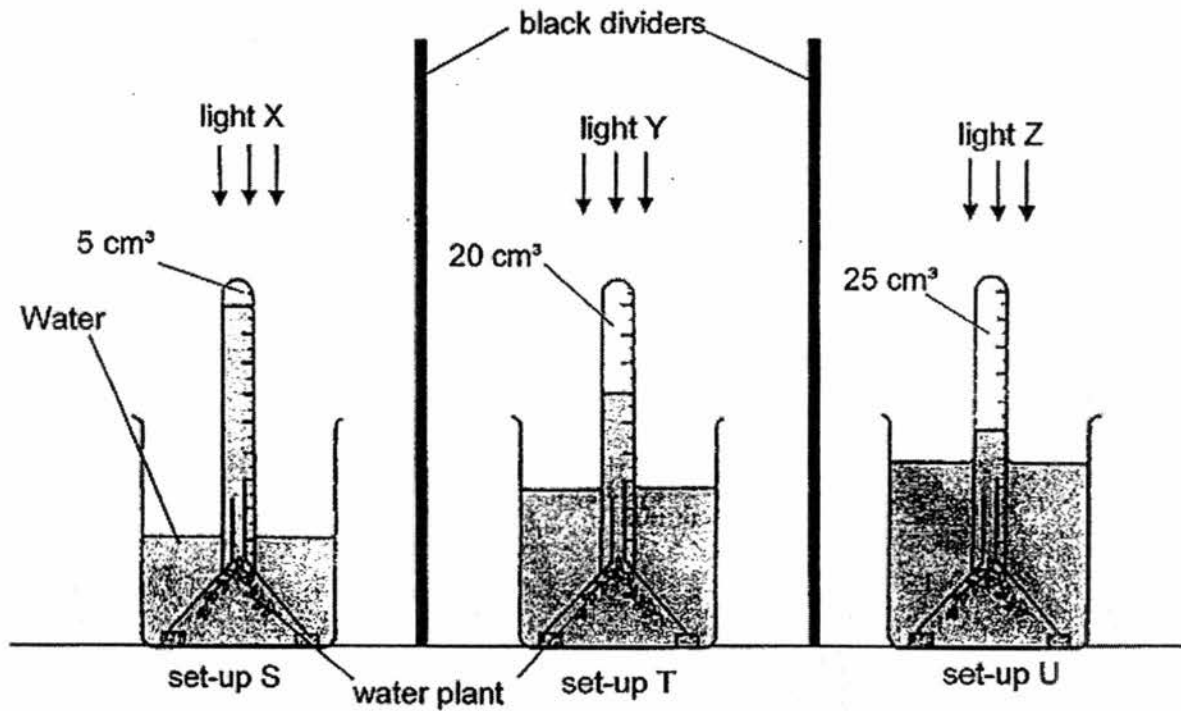
11. The diagram below represents a food web.



Which one of the following organisms will benefit directly if the level of carbon dioxide in the surroundings increases?

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

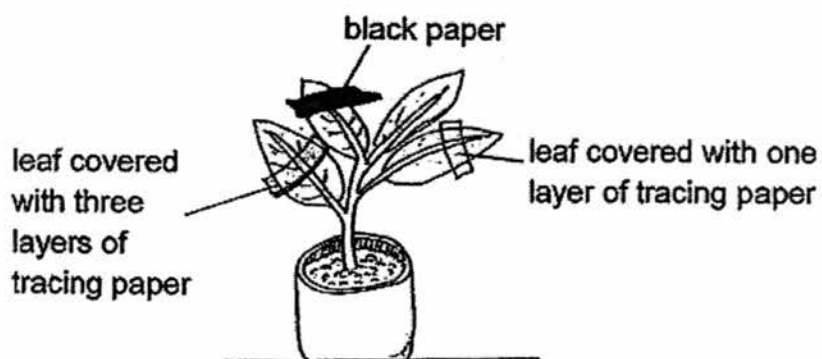
12. Sam wanted to find out if different coloured lights affect the amount of oxygen produced by the plant during photosynthesis. He used three similar water plants and the same volume of water to conduct his experiment. After a period of time, the results were shown in the diagrams below.



Based on the results above, which of the conclusions given below are most likely correct?

- A The water plant produces less oxygen in light Z than in light X.
  - B The water plant produces more oxygen in light Y than in light X.
  - C The amount of carbon dioxide in the water is the least in set-up S.
  - D The amount of oxygen produced by the water plant is affected by the colour of the light.
- (1) A and B only  
(2) A and C only  
(3) B and D only  
(4) C and D only

13. Study the set-up below. Two leaves are covered with different layers of tracing paper of the same size and one of the leaf is covered with a strip of black paper. The whole plant is placed under a light source for 8 hours.



Which one is **not** a possible aim of the above experiment?

- (1) To find out if light is necessary for photosynthesis.
- (2) To find out if the amount of light would affect the rate of photosynthesis.
- (3) To find out if the thickness of the tracing papers affect the rate of photosynthesis.
- (4) To find out if the presence of carbon dioxide would affect the rate of photosynthesis.

14. The picture below shows a peacock.



Which one of the following adaptations of the peacock is stated **incorrectly**?

	<b>Adaptation</b>	<b>Explanation</b>
(1)	Structural	The peacock has talons to grab onto things.
(2)	Structural	The peacock has a beak to eat seeds and fruits.
(3)	Behavioural	The peacock has beautiful tail feathers to attract a peahen.
(4)	Behavioural	The peacock spreads out its beautiful tail feathers to attract a peahen.

15. Mrs Raju wanted to find out how temperature affects the rate of evaporation of water.

<b>Set-up</b>	<b>Volume of water (ml)</b>	<b>Exposed surface area of water (cm<sup>2</sup>)</b>	<b>Temperature of water (°C)</b>	<b>Wind Speed (km/h)</b>
A	120	60	70	10
B	120	45	40	15
C	120	60	40	10
D	120	45	70	20
E	120	60	25	10
F	120	45	25	20

Which three set-ups can she use to conduct a fair test?

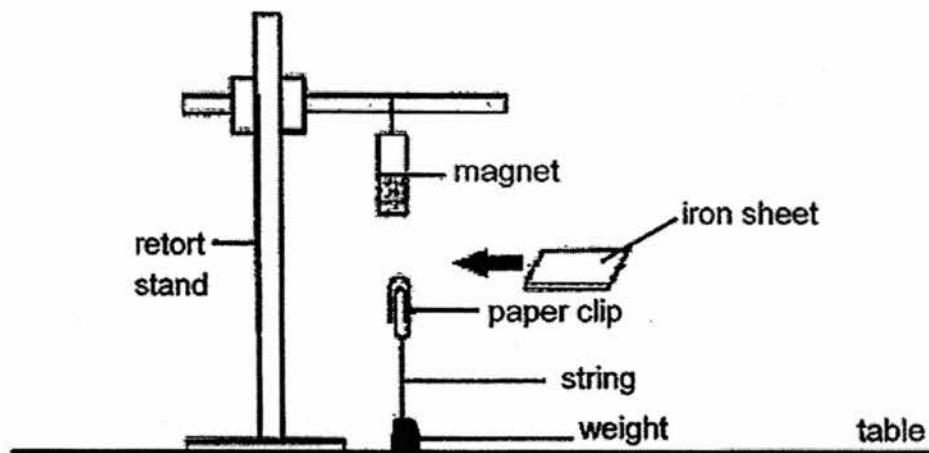
- (1) A, B and E  
 (2) A, C and E  
 (3) B, D and F  
 (4) C, D and F

16. Razoo mixed three powders, X, Y and Z, together in a container. These powders cannot be dissolved in water. The other properties of the three powders are given in the table below.

Powder	Property A	Property B	Property C
	Is it magnetic?	Does it sink in water?	Is it a good conductor of heat?
X	No	No	No
Y	No	Yes	Yes
Z	Yes	No	Yes

Which one of the following allow him to separate the three powders quickly?

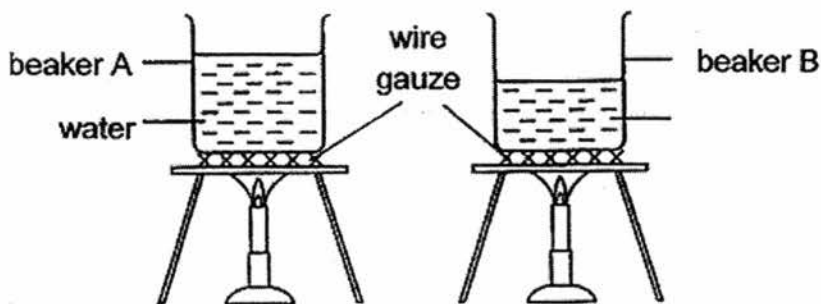
- (1) A only
  - (2) B only
  - (3) A and B only
  - (4) A and C only
17. Study the set-up shown below.



What will happen to the paper clip if an iron sheet is placed between the magnet and the paper clip?

- (1) The paper clip will remain suspended as magnetism can pass through the iron sheet.
- (2) The paper clip will remain suspended as the magnetic force is strong and is able to overcome the pull of gravity.
- (3) The paper clip will drop to the table as the magnetic force is weak and is not able to overcome the pull of gravity.
- (4) The paper clip will drop to the table as magnetism cannot pass through the iron sheet.

18. In the experiment below, two beakers containing different volumes of water at room temperature were heated until the water in both beakers reached 50°C.



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

- A The water in Beaker A has more heat energy than in Beaker B.
- B The water in Beaker B took a shorter time to be heated to 50°C.
- C The water in Beaker A had gained heat faster than the water in Beaker B.
- D The water in Beaker A and Beaker B have the same amount of heat energy.

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

19. Which of the following items possess chemical potential energy?

- A sugar
- B battery
- C cooking oil
- D a compressed spring

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

- 20 The table below shows the state of four substances, W, X, Y and Z, at different temperatures.

	State of substance at _____.		
Substance	10°C	50°C	190°C
W	Solid	Solid	Solid
X	Solid	Liquid	Liquid
Y	Solid	Solid	Liquid
Z	Liquid	Liquid	Liquid

Based on the information above, which one of the following statements is correct?

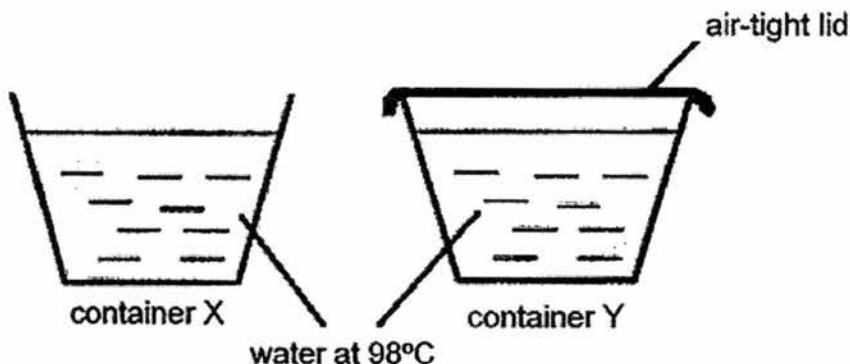
- (1) The boiling point of X is 10°C.
  - (2) The freezing point of Y is 50°C.
  - (3) Substance W has the lowest boiling point.
  - (4) Substance Z has the lowest freezing point.
- 21 Jack threw a ball from A to B as shown below.



Which one of the following statements is not correct?

- (1) The mass of the ball remained the same.
- (2) The force exerted by Jack moved the ball.
- (3) The potential energy of the ball increased from A to B.
- (4) The gravitational force acting on the ball increased from A to B.

22. Two identical containers, X and Y, were filled with an equal amount of hot water. Container Y was covered with an air-tight lid as shown in the diagram below.



Which of the following statements is/are true?

- A Evaporation will take place in both containers.
- B Evaporation will take place in container X but not in container Y.
- C The temperature of the water in container Y will remain constant.
- D The temperature of the water in both containers will drop after some time.

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

23. The diagram below shows a solar-powered calculator without an attached battery.

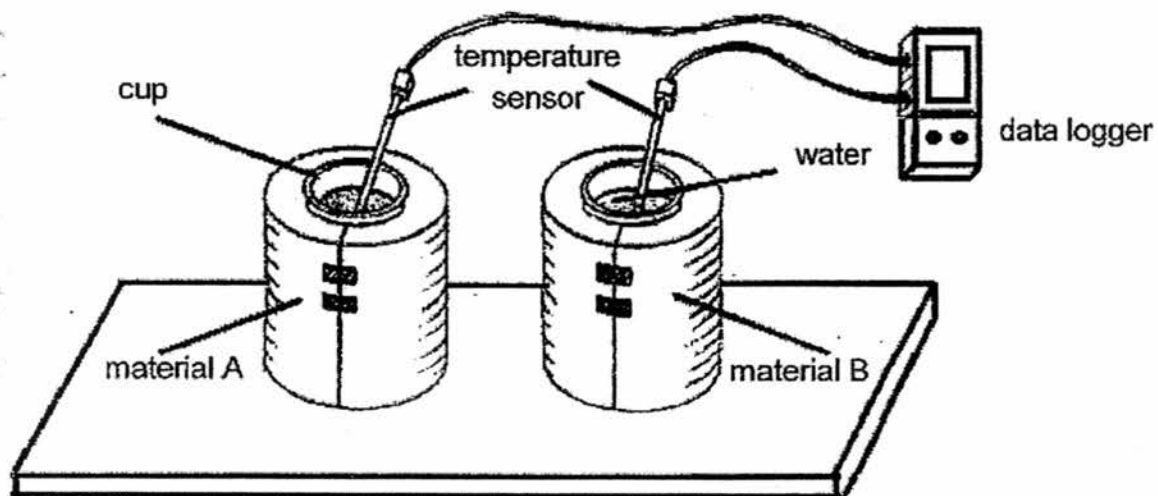


Which of the following shows the energy conversion when the calculator is turned on?

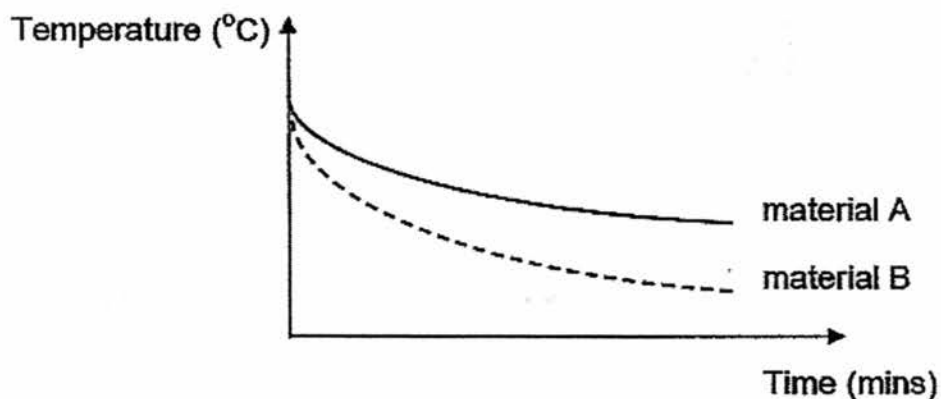
- (1) Heat energy  $\rightarrow$  light energy  $\rightarrow$  kinetic energy
- (2) Light energy  $\rightarrow$  electrical energy  $\rightarrow$  light energy
- (3) Light energy  $\rightarrow$  electrical energy  $\rightarrow$  kinetic energy
- (4) Chemical potential energy  $\rightarrow$  electrical energy  $\rightarrow$  light energy



24. Aisha conducted an investigation to find out which material, A or B, is a poorer conductor of heat. She wrapped two identical cups, filled with the same amount of water of the same temperature, with the two materials as shown below.



She used temperature sensors to measure the temperature of the water over a period of time. The graph below shows the result of her experiment.



Based on the graph above, which of the following is correct?

	To keep hot tea warm for a longer period of time	To keep ice water cool for a longer period of time
(1)	Material A	Material B
(2)	Material B	Material A
(3)	Material A	Material A
(4)	Material B	Material B

25. Charlie carried out an experiment with a torch, a tennis ball and a screen as shown below.



He wrote down what he did below:

Step:

- I. Switch on the torch.
- II. Measure the height of the shadow of the tennis ball formed on the screen.
- III. Move the tennis ball 5 cm closer to the torch.
- IV. Measure the height of the shadow again.
  
- V. Repeat steps (III) and (IV) twice, moving the tennis ball 5 cm closer to the torch each time.

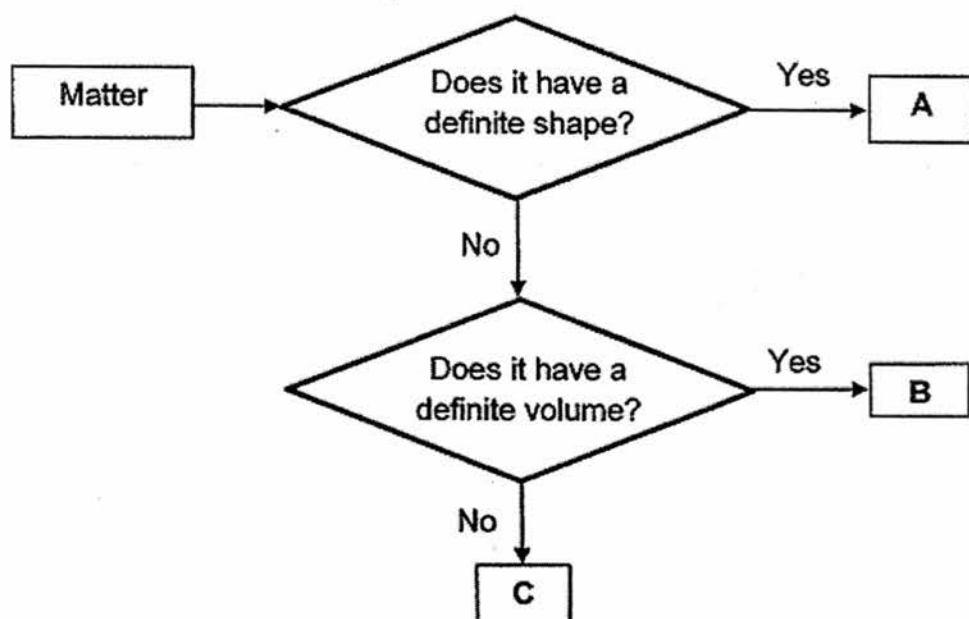
Which one of the following is the correct **hypothesis** for his experiment?

- (1) The size of the torch will affect the shape of the shadow.
- (2) The colour of the tennis ball will affect the sharpness of the shadow.
- (3) The distance between the torch and the tennis ball will affect the height of the shadow.
- (4) The distance between the tennis ball and the screen will affect the shape of the shadow.

26. The table below gives some information about objects, P and Q, and their characteristics. A tick (✓) represents the presence of the characteristic.

Characteristic	Object	
	P	Q
Occupies space	✓	✓
Can be compressed		✓
Takes the shape of the container it is in	✓	✓

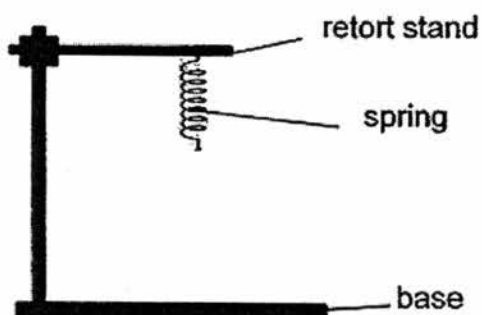
Objects, P and Q, can be represented by letters, A, B or C, in the flowchart shown below.



Based on the flowchart above, which letters, A, B or C, represent Objects P and Q respectively?

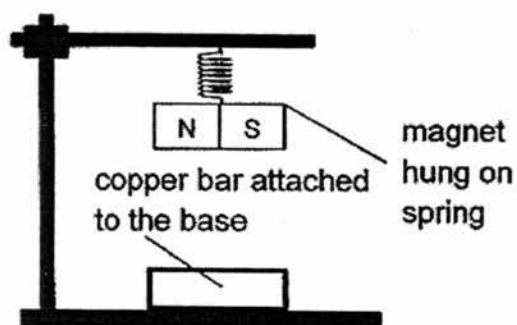
	Object P	Object Q
(1)	A	B
(2)	C	A
(3)	B	C
(4)	C	B

27. The diagram below shows the original length of a spring hung on a retort stand.

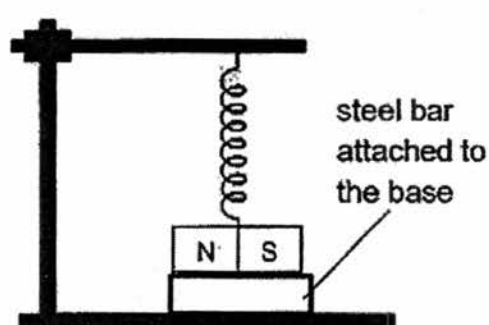


Which one of the following shows a correct observation?

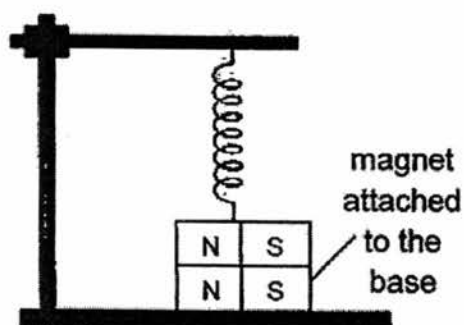
(1)



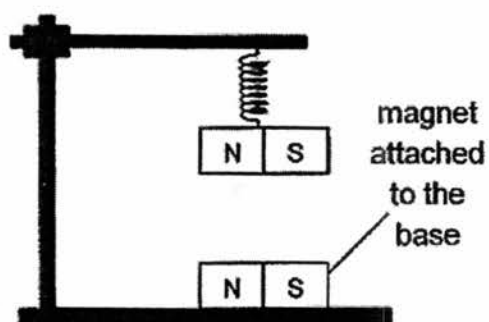
(2)



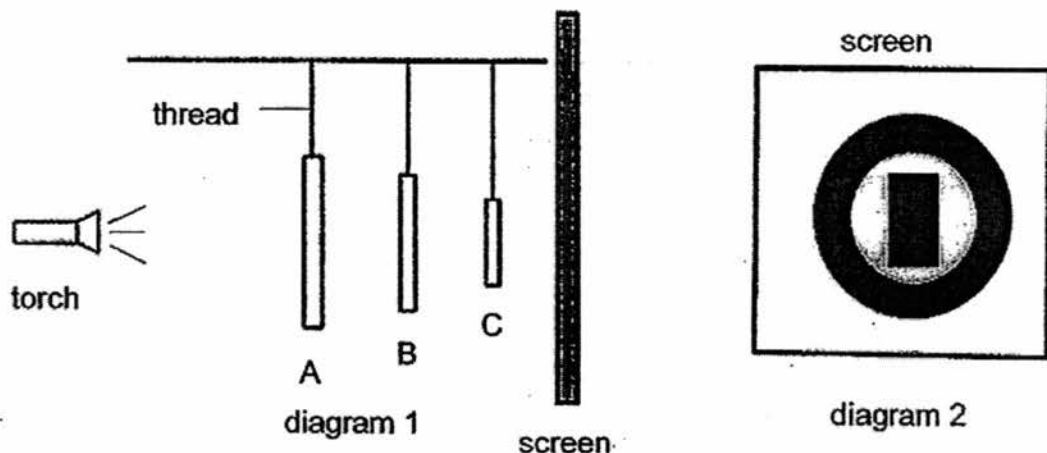
(3)



(4)



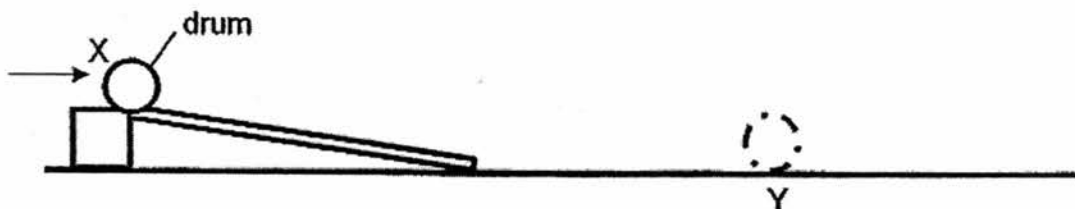
28. Diagram 1 below shows light shining on three shapes, A, B and C, made of cardboard. The shapes are of different sizes and they are placed at different distances from the torch. Diagram 2 shows the shadow of the shapes on the screen.



Which one of the following represents correctly shapes, A, B and C, respectively?

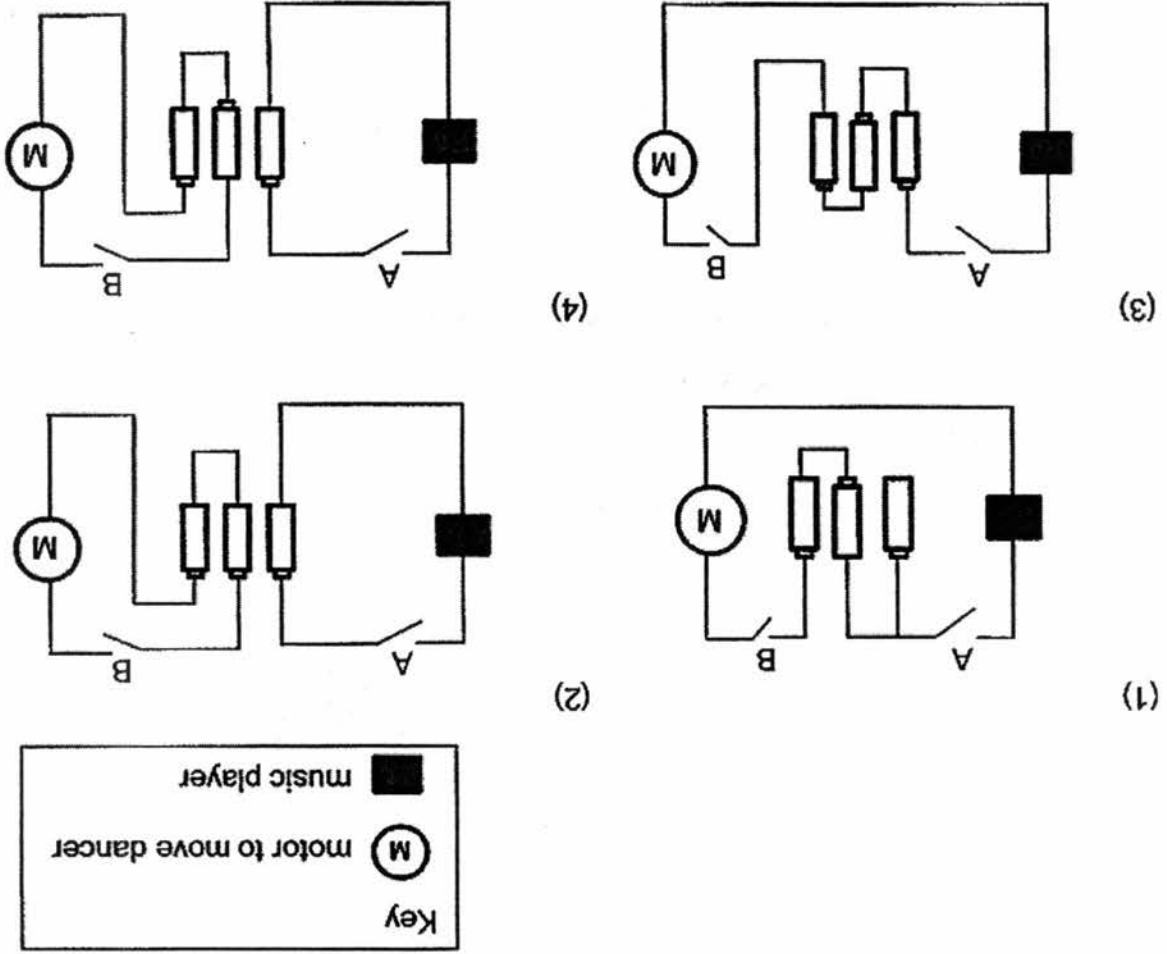
	A	B	C
(1)	circle	ring	rectangle
(2)	circle	rectangle	ring
(3)	ring	circle	rectangle
(4)	ring	rectangle	circle

29. A man wanted to move a drum down a ramp. He gave a push to the drum at point X and the drum rolled to point Y and stopped.



Which of the following force(s) acted on the drum causing it to stop at point Y?

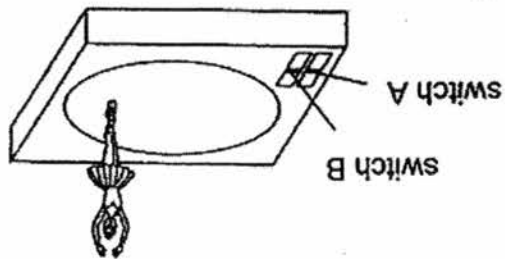
- A kinetic force  
 B frictional force  
 C magnetic force  
 D gravitational force
- (1) B only  
 (2) A and C only  
 (3) B and D only  
 (4) A, B and D only



Which one of the circuits below is a possible circuit of the toy?

Switched on	Observation
Both A and B	Dancer moved in circles. There was music.
A only	Dancer did not move. There was music.
B only	Dancer moved in circles. There was no music.

Her observations are shown below.



30. Alysia has a toy that works on batteries as shown in the diagram below.

Name : \_\_\_\_\_ ( )

Class : Primary 6 \_\_\_\_\_

## CHIJ ST NICHOLAS GIRLS' SCHOOL



**Primary 6**  
**Preliminary Examinations – 2016**  
**SCIENCE**  
**BOOKLET B**

**25 August 2016**

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

**14 questions**  
**40 marks**

**Do not open this booklet until you are told to do so.**  
**Follow all instructions carefully.**  
**Answer all questions.**

**This paper consists of 15 printed pages.**

Booklet A	60
Booklet B	40
Total	100

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Parent's Signature/Date

**Section B (40 marks)**

For questions 31 to 44, write your answers in this booklet.

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

31. Organisms, H, J, K and L, belong to the same community. The table below shows what organisms, J, K and L, feed on.

Organisms	Food
J	H, K
K	H
L	J, K

- (a) Based on the information above, which organism is most likely to be the food producer? [1]
- 
- (b) Write down one possible food chain with three organisms found in this community. [1]
- 
- (c) Write down one possible food chain with four organisms found in this community. [1]
-



32. The picture below shows a polar bear on the sea ice.



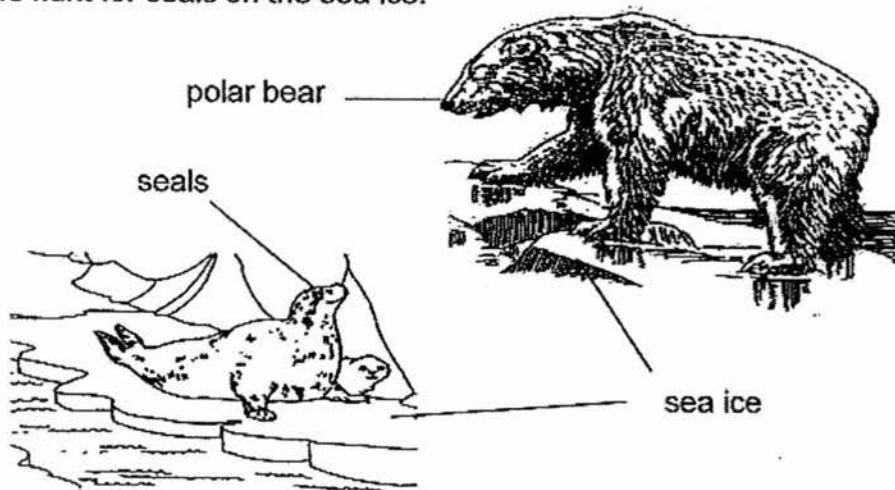
(a) Explain how global warming affects the sea ice.

[1]

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Polar bears hunt for seals on the sea ice.



(b) Explain how global warming makes it more difficult for polar bears to hunt for seals on the sea ice.

[1]

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33. Jackrabbits are well adapted to the conditions of the desert grasslands. Desert grasslands can be very hot in summer and very cold in winter. In hot weather, the jackrabbit's ears stand straight up while in cold weather, the ears lie back close to the body as shown in the pictures below.



In cold weather



In hot weather

- (a) How does this adaptation help the Jackrabbit to survive the hot and cold weather? [2]

In cold weather: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

In hot weather: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

- (b) The soles of a jackrabbit's front and hind feet are covered with a layer of fur. How does this extra fur on its soles help the jackrabbit cope with the hot desert sands? [1]

\_\_\_\_\_

\_\_\_\_\_

34. Aminah put an equal number of bean seeds in two beakers, A and B. She placed beaker A in sunlight and beaker B in the dark. She watered them daily and recorded the height and observations of the seedlings every two days as shown.

Day	Beaker A ( in the light)		Beaker B ( in the dark)	
	Average height (mm)	Observations	Average height (mm)	Observations
2	4	First leaves appeared	4	First leaves appeared
4	10	Green healthy leaves	15	Pale green leaves
6	20	Straight stems and green leaves	31	Long thin stems and yellowish leaves
8	31	Straight stems, green leaves started to open.	50	Thin stems started to droop. Yellow leaves.
10	42	Very straight stems. Green leaves opened.	60	Straggly thin stems. Yellow closed leaves.
12	55	Straight strong stems and large green leaves.	65	Few seedlings left and all with small yellow leaves.

- (a) From the information given above, state two differences between the plants growing in the light and those growing in the dark in the first eight days. [2]

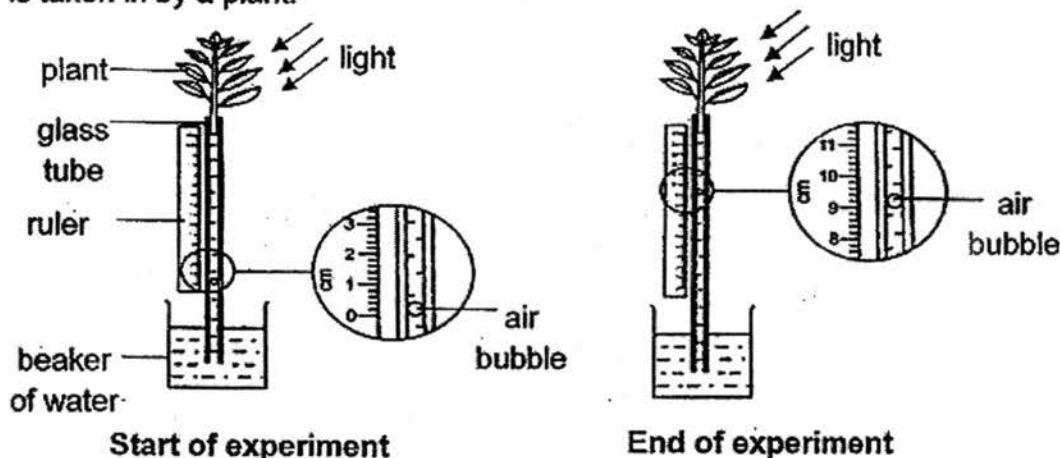
(i) \_\_\_\_\_  
 \_\_\_\_\_

(ii) \_\_\_\_\_  
 \_\_\_\_\_

- (b) Based on the results of the average height of plants in beakers A and B, what conclusion can you make? [1]

\_\_\_\_\_  
 \_\_\_\_\_

35. Paul used the set-up below to measure the distance moved by an air bubble when water is taken in by a plant.



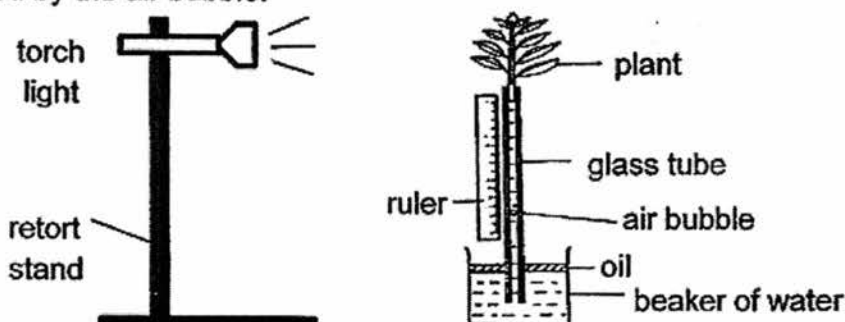
- (a) Explain why the air bubble moved upwards at the end of the experiment. [1]

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Paul used another set-up below to study how the amount of light would affect the distance moved by the air bubble.



- (b) What is the purpose of adding oil to the beaker of water in his set-up? [1]

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- (c) Paul needs another set-up to compare his result. List the variable that he should change in the second set-up to ensure a fair test. [1]

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36. The article below was published in the newspapers in 2014.

**Mass fish deaths overnight hit Changi farmers hard**



February 13, 2014, 6:09 pm  
Undercurrent News

Singapore's fish farmers continued to add up their losses as the mass fish deaths resulting from the low levels of dissolved oxygen in the water showed no sign of improvement, while National Development Minister pledged the government would "do its utmost" to help farmers.

Share 

It was reported that thousands of fish in Changi fish farms died due to algal blooms, a rapid increase in the population of algae in a water system. Algae are able to carry out photosynthesis and they are usually found near the surface of the water.

(a) Give two possible reasons why the fish in the fish farms died overnight when there was an algal bloom. [2]

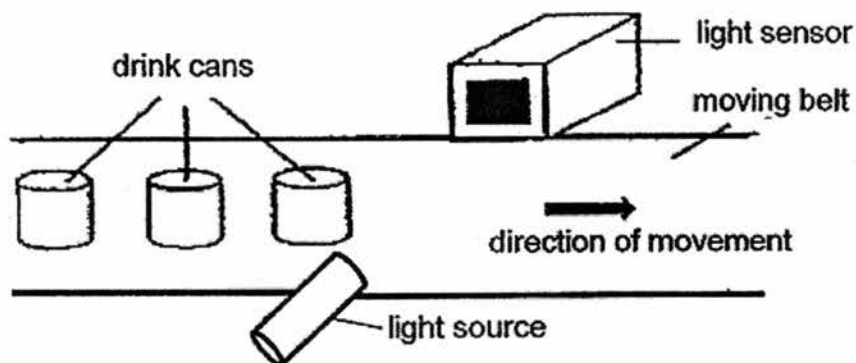
(i) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(ii) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

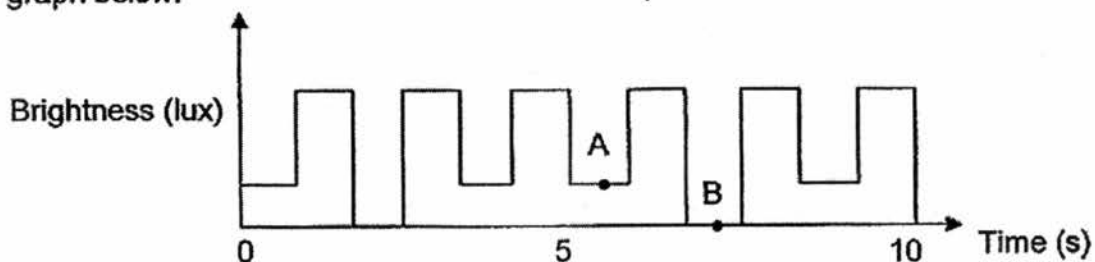
(b) Global warming can also affect the population of the fish in the ponds. Describe how this could happen. [1]

\_\_\_\_\_  
\_\_\_\_\_

37. Minah set up a light sensor to count the number of drink cans on a moving belt as shown in the diagram below.



The belt moves at the same speed. As the cans pass between the light source and the sensor, they block light from reaching the sensor. The data recorded is shown in the graph below.



- (a) Based on the graph, how many cans could be counted in 10 seconds? [1]

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- (b) From the graph, points A and B are results obtained from 2 different cans. State whether these cans are transparent, translucent or opaque at points A and B. [2]

Point A:

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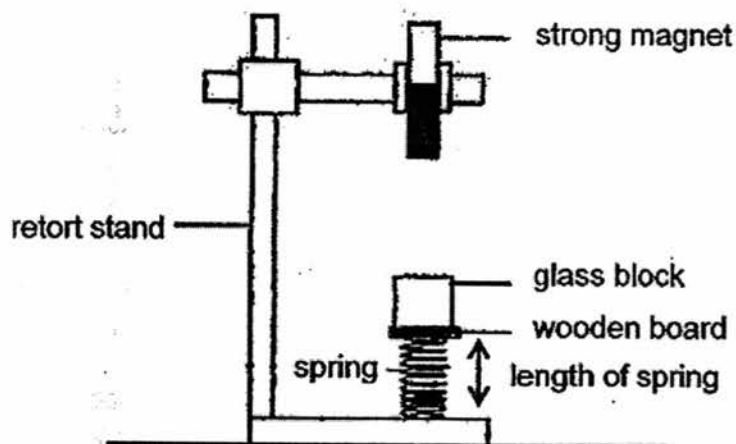
Point B:

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38. Sonia set up an experiment as shown in the diagram below.



The spring with a wooden board is secured to the base of the retort stand. After attaching a glass block to the wooden board with some tape, Sonia measured and recorded the length of the spring in the table as shown below.

She repeated the experiment with two different objects, Y and Z, which have the same mass and shape as the glass block, one at a time.

Object	Length of spring (cm)
Y	12
Z	6
Glass block	8

- (a) What material could object Y be made of? [1]

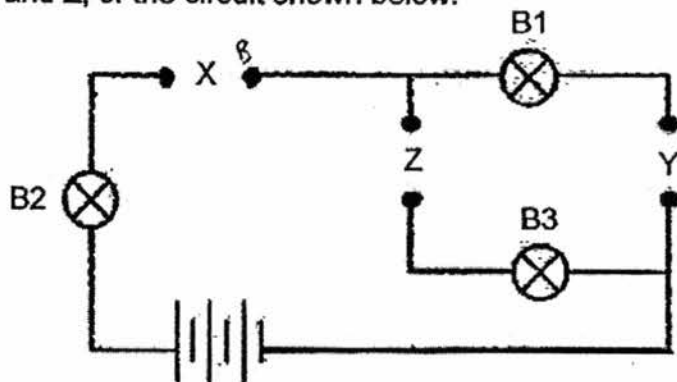
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- (b) What is object Z likely to be? Explain your answer. [1]

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39. Nathan had three rods, A, B and C, of unknown materials. He placed them in different positions, X, Y and Z, of the circuit shown below.



The table below shows the results of his experiment.

Positions where rods were placed			Did the bulb light up?		
X	Y	Z	B1	B2	B3
A	B	C	Yes	Yes	No
B	C	A	No	Yes	Yes
C	A	B	No	No	No

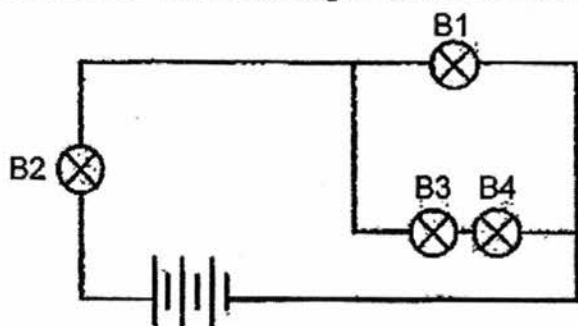
- (a) Based on the results of the experiment what can he conclude about the three materials A, B and C? [1]

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Nathan added another bulb and re-arranged the circuit as shown below.



- (b) How will the brightness of bulb B3 be affected with the addition of bulb B4? Explain your answer. [2]

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40. Three identical cans, each filled with the same amount of oil, sand and water respectively, were left standing in the Sun. After an hour, the cans were brought indoors and the temperatures of the substances were taken at an interval of two minutes. The results are recorded in the table below.

Time in minutes	Temperature ( $^{\circ}\text{C}$ )		
	Oil	Sand	Water
0	38	51	48
2	37	45	45
4	36	38	42
6	35	33	38
8	33	30	35
10	31	30	31

- (a) Based on the results above, which one of the three substances is best for retaining heat? [1]

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

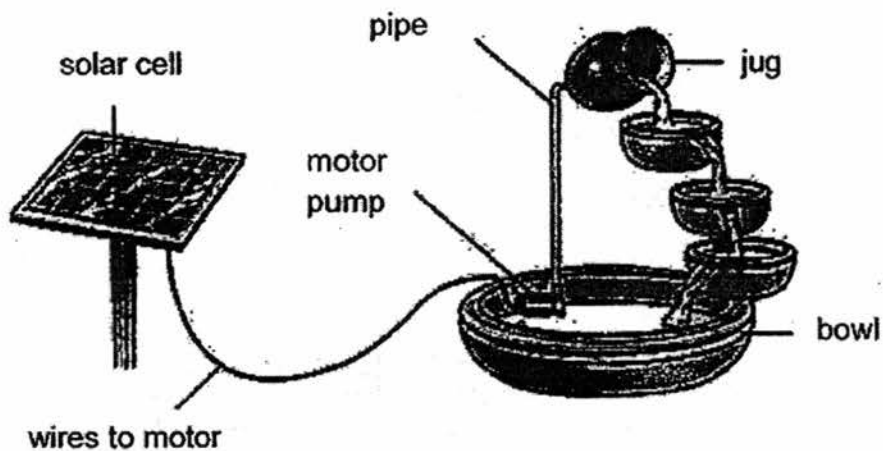
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- (c) What would be the likely temperature of oil at the end of 12 minutes? Explain your answer. [1]

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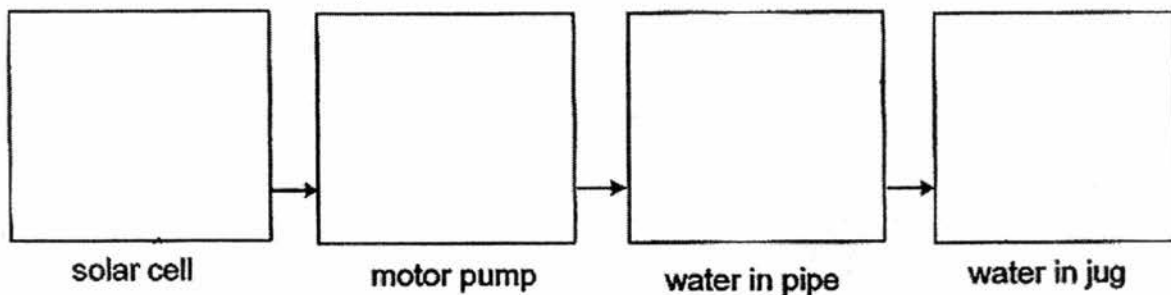
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41. The diagram below shows a solar-powered miniature waterfall in the garden.



(a) Complete the energy conversion below.

[2]



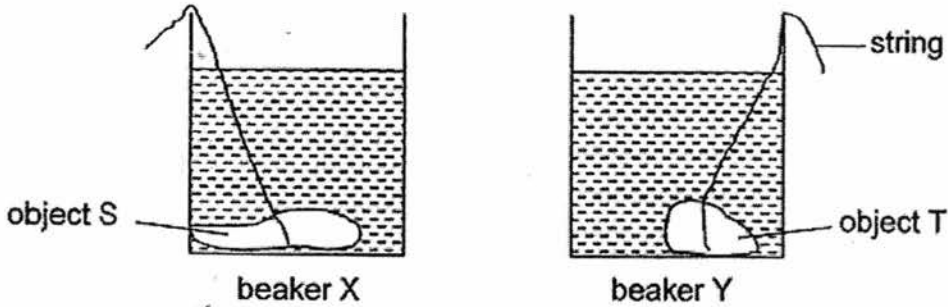
(b) Give one advantage of using a solar cell to power the miniature waterfall.

[1]

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42. The diagram below shows two identical beakers with two objects, S and T, made of plasticine. The water levels in the two beakers are the same.



- (a) If you are not allowed to use any other apparatus, add or remove water from the beaker, describe how you can find out which object, S or T, has a bigger volume. [2]

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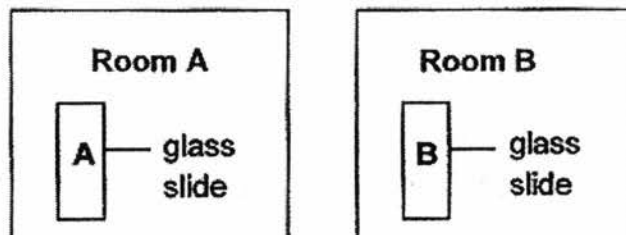
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- (b) Based on what you have done in (a), how can you tell if object T has a bigger volume than object S? [1]

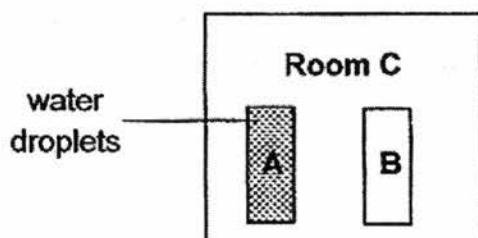
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43. Justin left two glass slides in two rooms, A and B, of different temperatures for half an hour.



Thereafter, he removed the two slides and left them in room C as shown in the diagram below.



After a few minutes, he noticed water droplets on the glass slide from room A but not on the glass slide from room B.

- (a) Based on his observation, what can you conclude about the temperatures of room A and room B? [1]

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- (b) Explain clearly how the water droplets are found on glass slide A. [2]

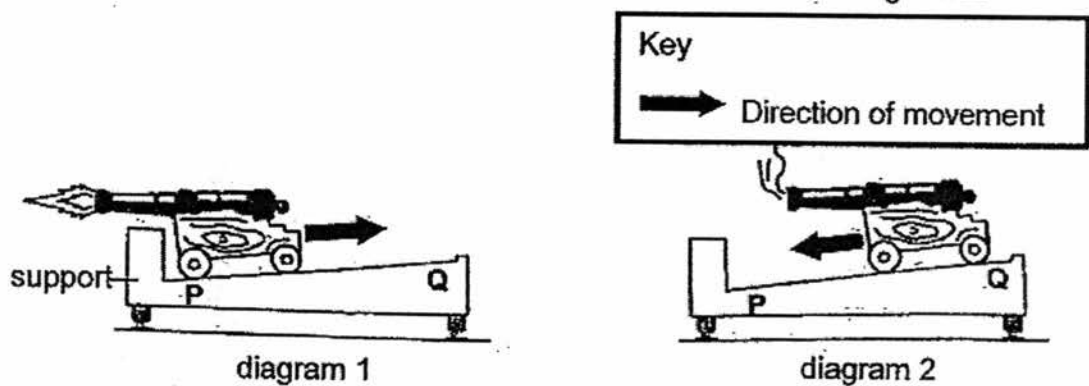
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44. When a cannon shown in diagram 1 is fired, it moved up the slope from point P to Q. The cannon then moved back from Q to P on its own as shown in diagram 2.



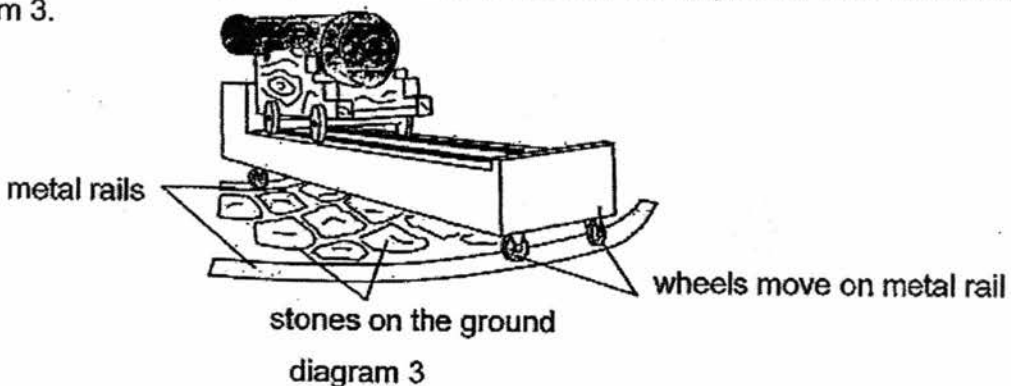
- (a) What caused the cannon in diagram 2 to move back to point P? [1]

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To aim at a different point, the cannon is moved on the metal rails as shown in diagram 3.



- (b) Give a reason why it is easier to move the cannon on the metal rails than on the ground shown? [1]

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- (c) After sometime, the wheels are unable to move along the metal rail easily. Suggest a way to enable the wheels to continue to move easily along the metal rails. Explain your answer. [1]

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~End of Booklet B~

**EXAM PAPER 2016 (P6)**

**SCHOOL : GHIJ**

**SUBJECT : SCIENCE**

**TERM : SA2**

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
4	3	1	3	4	1	3	1	4	3
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
1	3	4	3	2	3	4	2	3	4
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
4	2	2	3	3	3	2	4	1	4

**31)a)Organism H.**

**b)H → J → L**

**c)H → K → J → L**

**32)a)The sea ice gained heat and melted faster.**

**b)When the sea ice melt faster, lesser sea ice for the polar bear to hunt on.**

**33)a)In cold weather :Lesser surface area of the erasure exposed of the cold. Therefore lesser heat lost to the surrounding. Thus rabbit can feel warmer.**

**In hot weather: Greater surface area of the ears are exposed to the heat. Therefore more beat loss to the surrounding. Thus rabbit can feel cooler.**

**b)Fur traps air, air is a poor conductor of heat. Rabbit gains heat from the hot sand slower.**

34)a)i)On the fourth day, the plants growing in the light has healthy green leaves while the plants growing in the dark has pale green leaves.

ii)Plant A has straight stem but plant in B has droopy stems.

b)The plants growing in the light average height is shorter than the plants growing in the dark average height.

35)a)Plant take in water during photosynthesis, more water taken in pushes the bubble up the tube.

b)Prevent evaporation if water and ensure any water loss due to the plant absorbing the water.

c)The brightness of the torch.

36)a)i)The algae bloom caused not enough oxygen to enter the water. Thus, the fishes were not able to receive enough dissolve oxygen to breathe.

ii)Algae cover the water surface reducing amount of oxygen from the air dissolving in the water.

b)When there is global warming, the water in the ponds will become heated up and will kill the fishes.

37)a)6 cans.

b)Point A: Translucent.

Point B: Opaque.

38)a)Magnetic material.

b)A is a magnet. Like-pole facing each other repel causes the spring to compress.

39)a)A and B are electrical conductors. C is an electrical insulator.

b)Bulb 3 will be dimmer. It is a series circuit, lesser electrical current puss through bulb 3.

40)a)Oil.

b)Temperature for oil decrease the least.

c)30°C . It is the room temperature.

41)a)Light energy →Electrical energy → Kinetic energy →Gravitational potential energy

b)Does not need to burn fossil fuel so less pollution.

42)a)Remove the object S and T and compare the water level in the beaker.

b)Beaker Y has a lower water level than beaker X.

43)a)The temperature in room A is colder than the temperature in room B.

b)The warm water vapour in the surrounding air in room C comes into contact with the cooler surface of glass side A, lose heat and condense to form water droplets.

44)a)Gravitational force and the slope.

b)The metal rails are smoother, reducing friction between the wheels of the cannon and the metal rails.

c)Apply lotion in the metal rail. Lotion is a lubricant, which helps to reduce friction between the wheels of the cannon and metal rails and hence will allow the wheels to continue to move easily along the metal rails.