

METHODIST GIRLS' SCHOOL

Founded in 1887



**END-OF-YEAR EXAMINATION 2017
PRIMARY 4
SCIENCE**

BOOKLET A

Total Time for Booklets A and B: 1 hour 30 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 4. _____

Date : 31 October 2017

This booklet consists of 20 printed pages including this page.

For each question from 1 – 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.

[56 marks]

- 1 Alice has a mini fish bowl with two guppies and some water plants as shown below. She feeds them with some tubifex worms each day. After a month, she noticed that the fish bowl is now too small for them.



This shows that the guppies are living things because they _____.

- (1) grow
- (2) respond
- (3) breathe
- (4) reproduce

- 2 The diagram below shows a plant. Which part of the plant absorbs water and mineral salts for the plant to make food?



(Go on to the next page)

3 Study the pictures below.



Straw mushroom



Bird's Nest Fern

Which of the following statement/s about the organisms above is/are correct?

- A Both have no leaves.
- B Both reproduce from spores.
- C Both are non-flowering plants.
- D Both cannot make their own food.

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

4 The picture below shows Animal X.

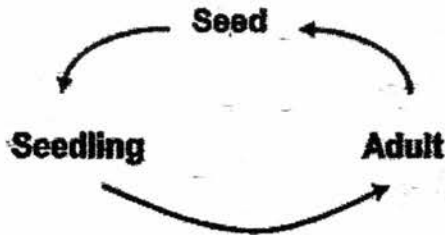


Which group of animals does Animal X belong to and what is its special characteristic?

	Group of animal	Characteristic
1	Birds	It has wings.
2	Birds	It is covered with feathers.
3	Mammals	It has hair.
4	Mammals	It has two legs.

(Go on to the next page)

- 5 The diagram below shows the life cycle of a plant.

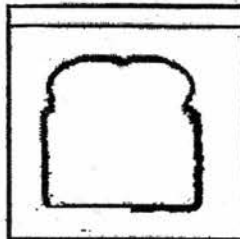


Based on the above life cycle, which one of the following statements is definitely true?

- (1) It is a flowering plant.
 - (2) It will grow into a tree.
 - (3) The fruit can be eaten.
 - (4) It cannot make its own food.
- 6 Ali had two pieces of bread, A and B. He toasted Bread A for 3 minutes. He then sprinkled an equal amount of water onto each slice of bread and placed bread, A and B, into separate plastic bags and left them on the kitchen table for five days.



Bread A (toasted)



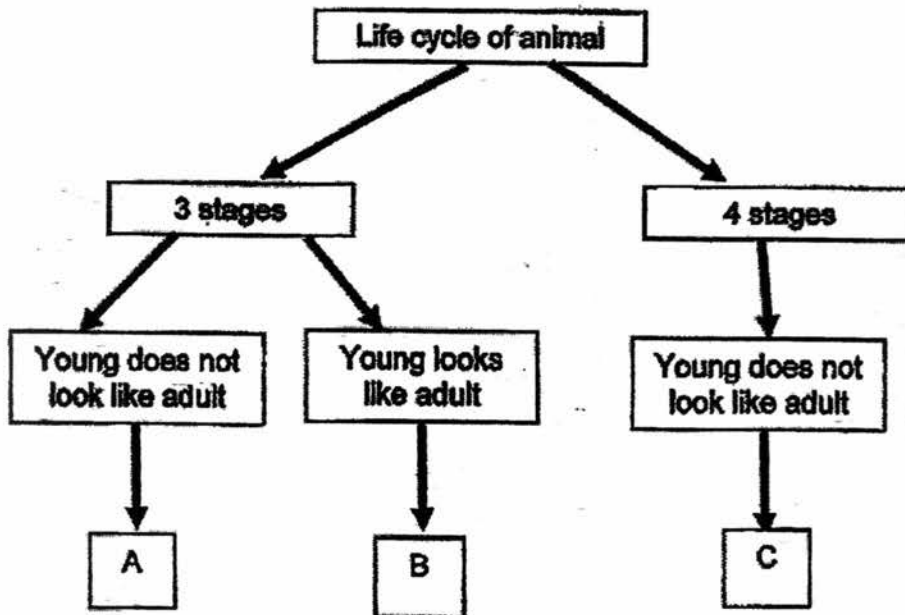
Bread B (plain)

On the fifth day, what would Ali observe on the two pieces of bread?

- (1) Mould is found growing on Bread A but not Bread B.
- (2) More mould is found growing on Bread B than Bread A.
- (3) Less mould is found growing on Bread B but not Bread A.
- (4) The same amount of mould is found on both pieces of bread.

(Go on to the next page)

7 Study the classification chart below.

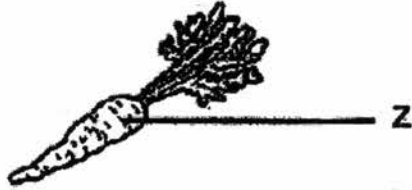


Which one of the following represents animal A, B and C?

	A	B	C
(1)	grasshopper	toad	cockroach
(2)	toad	cockroach	housefly
(3)	butterfly	cockroach	toad
(4)	butterfly	grasshopper	toad

(Go on to the next page)

- 8 The picture below shows a picture of a carrot plant.

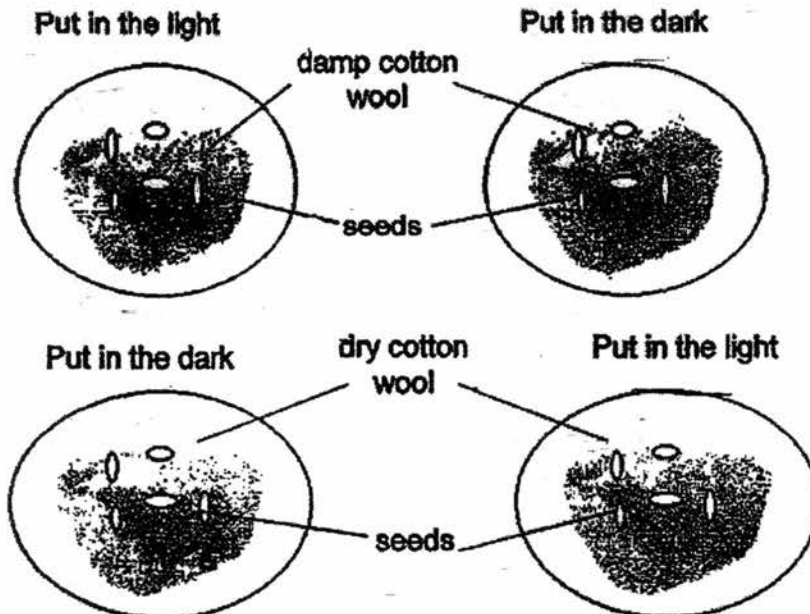


How is part Z useful to the plant?

- A It stores food for the plant.
 B It provides support by anchoring the plant
 C It absorbs water and minerals needed for growth.
 D It transport food made by the leaves to all plant parts.

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

- 9 Rama set up an experiment as shown in the diagram below. At the end of the experiment, he observed that the seeds grew into seedlings in some petri-dishes but not in others.



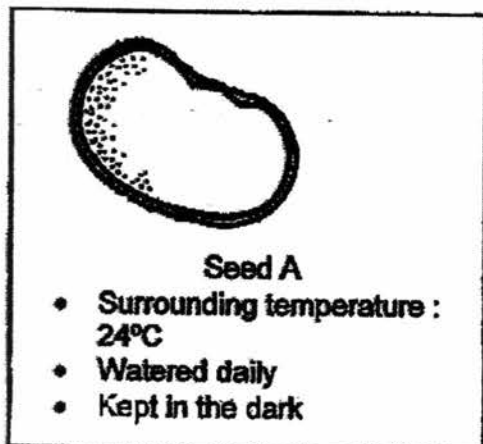
Rama was trying to find out if seeds need _____.

- (1) light to grow
 (2) can grow in cotton wool
 (3) water and light to grow into seedlings
 (4) water, light and cotton wool to grow into seedlings

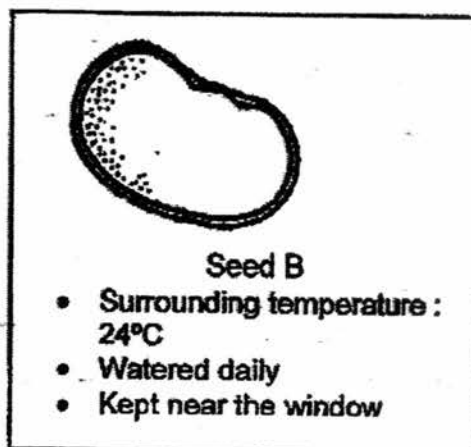
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- 10 All prepared four set-ups as shown below to find out if light is needed for germination.

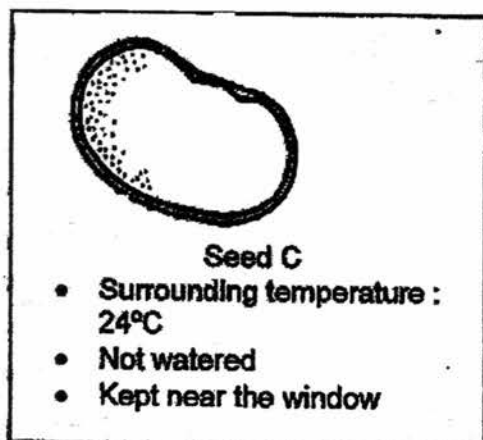
Set-up A



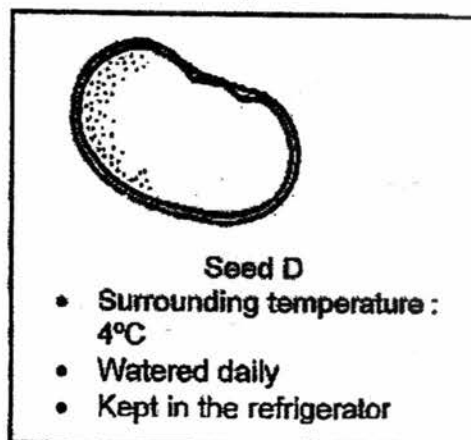
Set-up B



Set-up C



Set-up D



Which two set-ups should Ali use for his experiment?

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

(Go on to the next page)

11 The diagram below shows a ribcage.



Which of the following statements about the ribcage are true?

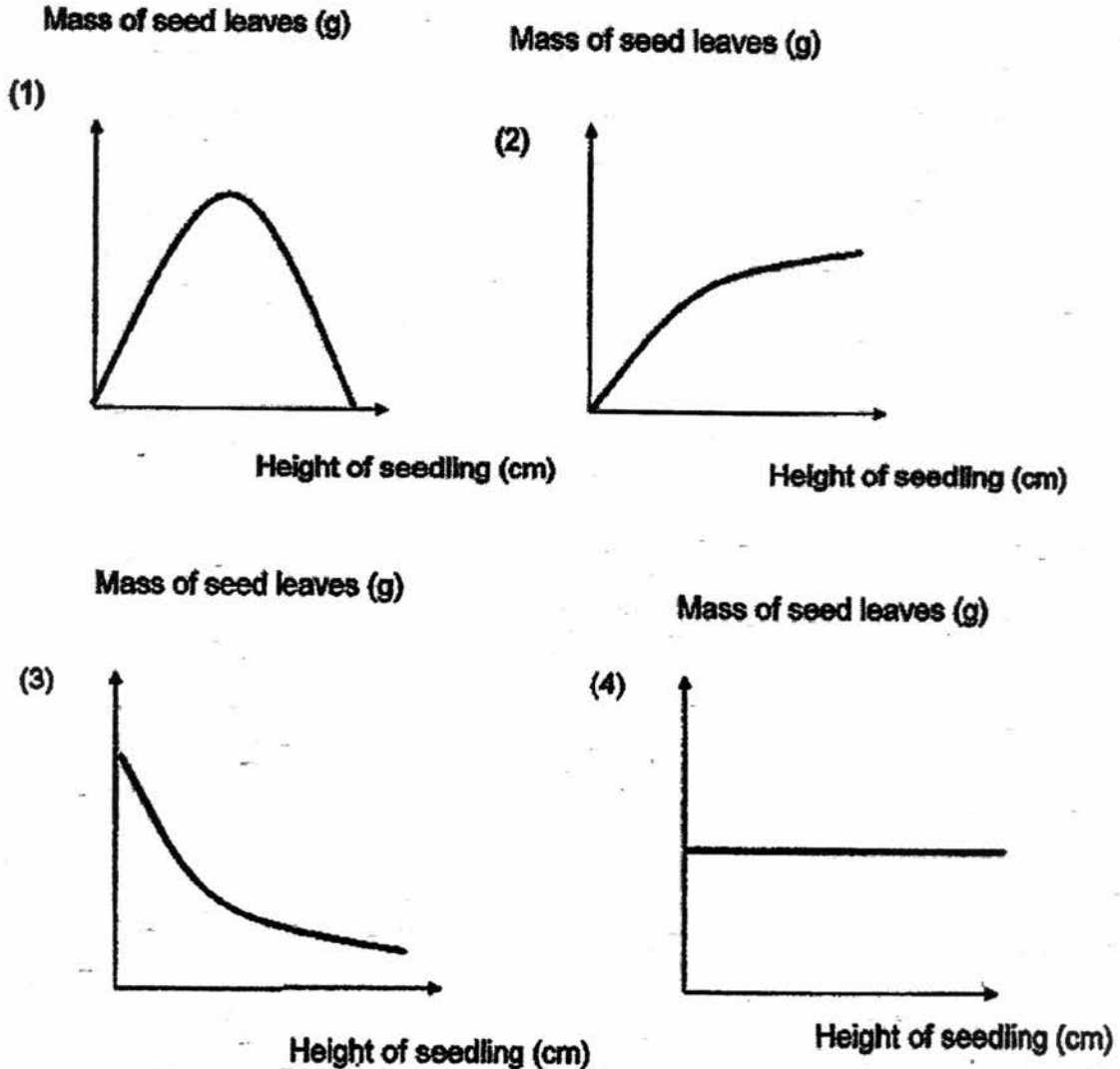
- A It gives shape to the body.
- B It is part of the muscular system.
- C It is connected to the backbone.
- D It protects the brain, heart and lungs.

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

(Go on to the next page)

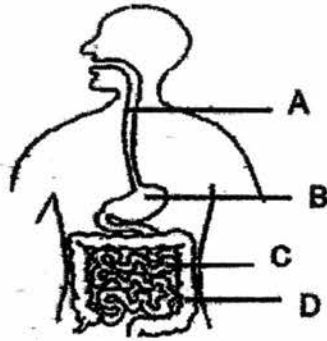
- 12 Sally grew some bean seeds and she recorded the changes in the mass of the seed leaves and the height of the seedlings.

Which graph below shows the correct relationship between the mass of the seed leaves and the height of the seedling?



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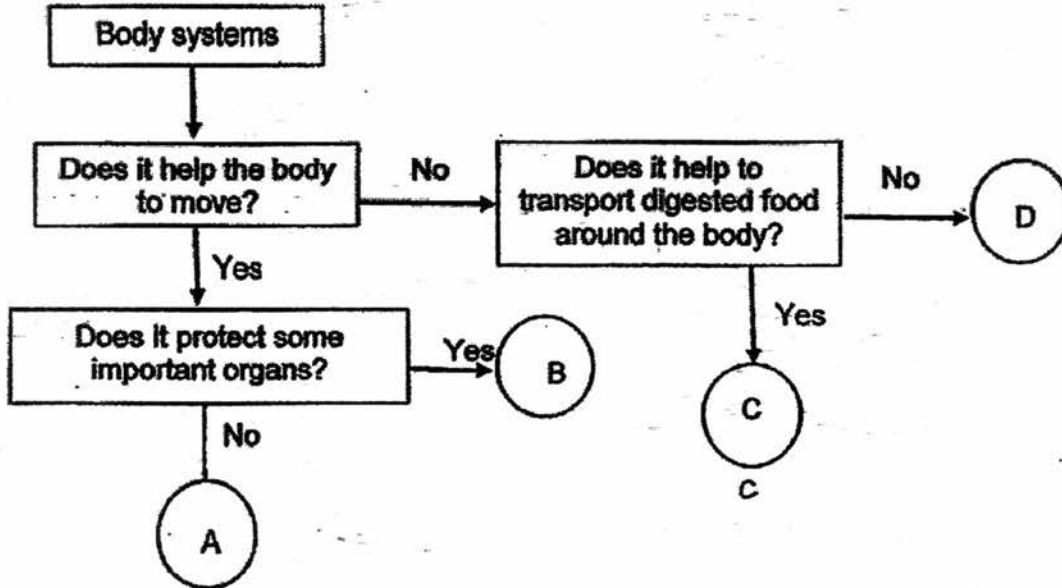
13 Study the human digestive system as shown below.



Which part absorbs water from the undigested food?

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

14 The flowchart below shows some body systems, A, B, C and D working together.



Which one of the following best represents the skeletal system?

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

(Go on to the next page)

16 Which object will break easily when it is bent?

(1)



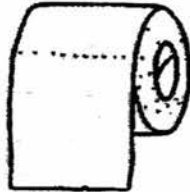
shirt

(2)



sponge

(3)



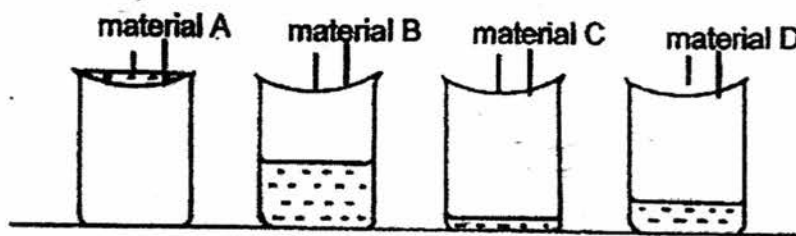
toilet roll

(4)



wooden ruler

16 Four different materials, A, B, C and D, were used to cover each beaker. 200ml of water was then poured onto the material into each beaker. The amount of water that passed through the material and collected in each beaker is shown below.



Which material is most suitable to be used for making a drinking straw?

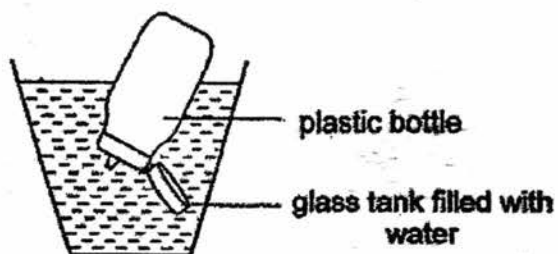
- (1) Material A
- (2) Material B
- (3) Material C
- (4) Material D

(Go on to the next page)

17 Which one of the following properties is true for both snow and oxygen?

- (1) They can be seen.
- (2) They occupy space.
- (3) They can be compressed.
- (4) They have definite shapes.

18 Nurul immersed a plastic bottle into a glass tank filled with water. She gave a tight squeeze on the empty bottle before releasing it.

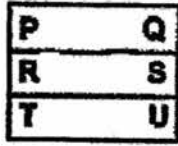


Which one of the following would not be observed?

- (1) Some water would enter the bottle.
- (2) The water level in the tank increased.
- (3) Some bubbles were seen in the water.
- (4) The volume of plastic bottle remained the same.

(Go on to the next page)

- 19 Siti had arranged three bar magnets as shown below.

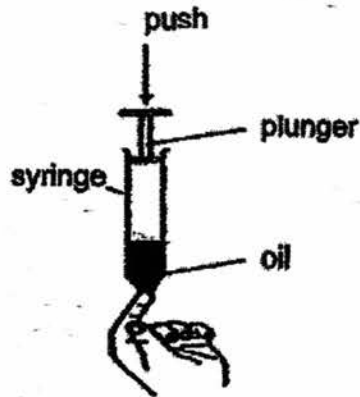


Which one of the following is another possible arrangement?

<p>(1)</p>	<p>(2)</p>
<p>(3)</p>	<p>(4)</p>

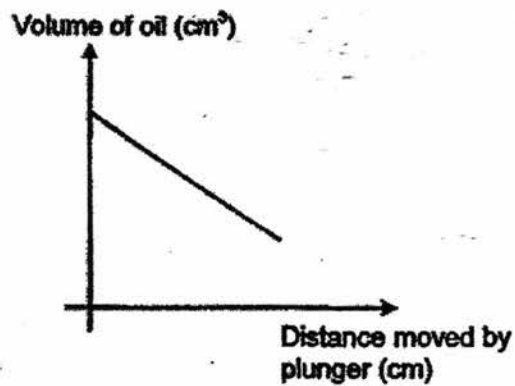
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- 20 Maria performed an experiment with a syringe which is half filled with oil. She covered one end of the syringe and tried to push the plunger down.

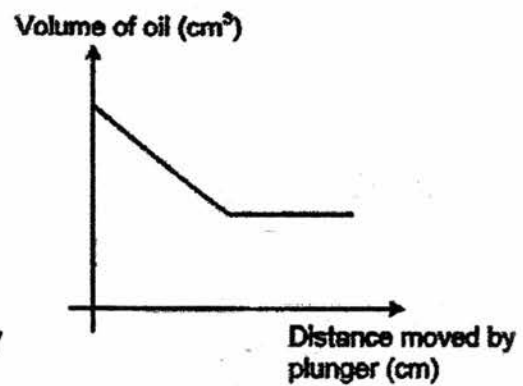


Which one of the following graphs shows the correct change in the volume of oil as the plunger was pushed down?

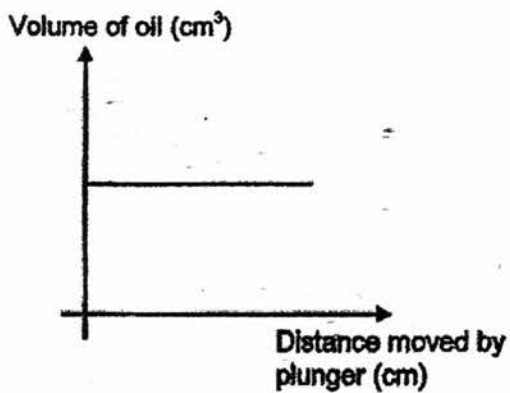
(1)



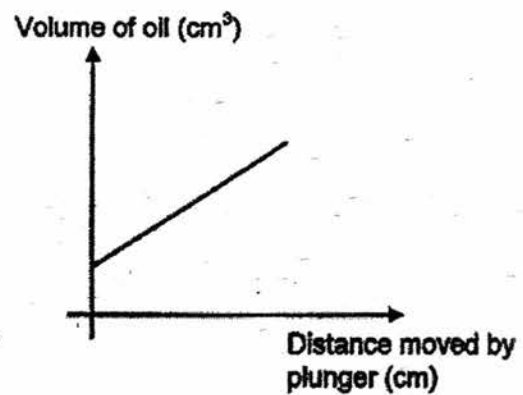
(2)



(3)

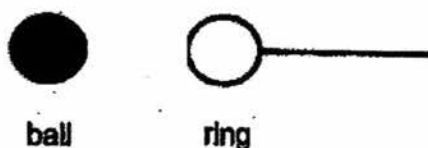


(4)



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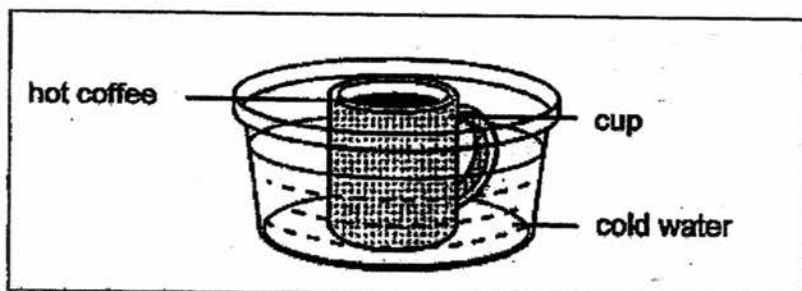
- 21 The ring and ball below are made of the same material.



At room temperature, the ball is unable to pass the ring. After heating the ring ~~for a while~~, the ball passed through ring easily.

What material could the ring possibly be made of?

- (1) iron
 - (2) glass
 - (3) plastic
 - (4) rubber
- 22 A cup of hot coffee is placed into a basin of cold water.



Which one of the following correctly describes the heat transfer that takes place?

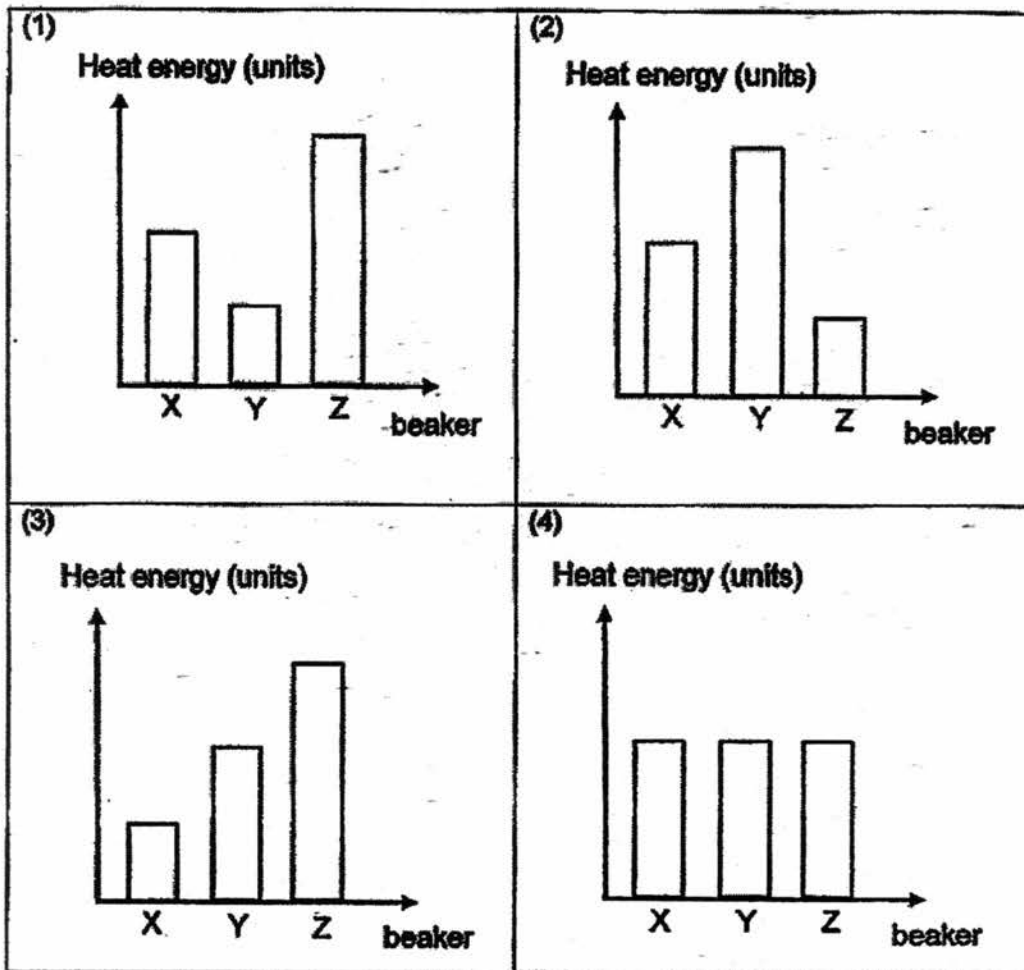
	Cold water	Coffee	Cup
(1)	Heat gain from cup	Heat loss to cup	Heat gain from hot coffee
(2)	Heat gain from cup	Heat gain from cup	Heat gain from hot coffee
(3)	Heat loss to cup	Heat loss to cup	Heat loss to hot coffee
(4)	Heat loss to cup	Heat gain from cup	Heat loss to hot coffee

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- 23 Three similar beakers were filled with water and heated for six minutes. The table below shows the amount of water in each beaker and the temperature of water before and after they were heated.

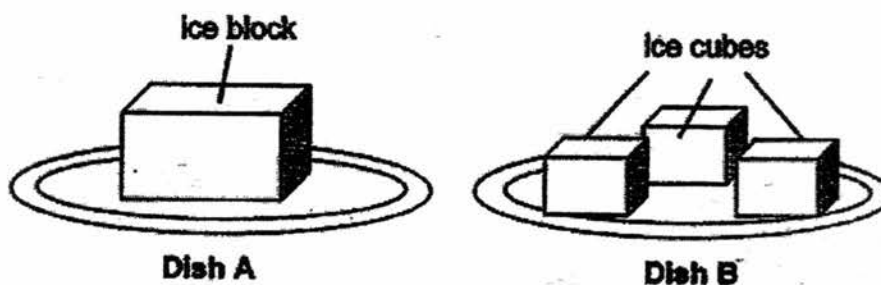
Beaker	Amount of water (ml)	Starting temperature ($^{\circ}\text{C}$)	Ending temperature ($^{\circ}\text{C}$)
X	400	26	98
Y	200	26	98
Z	600	26	98

Which one of the graphs below shows the amount of heat energy of the water in the beakers after six minutes?



(Go on to the next page)

- 24 Ravi placed an ice block and ice cubes on two dishes, A and B, on a table in the kitchen. The ice block and ice cubes were made from an equal amount of water.



Which dish would Ravi observe the ice to melt completely first and what is the reason?

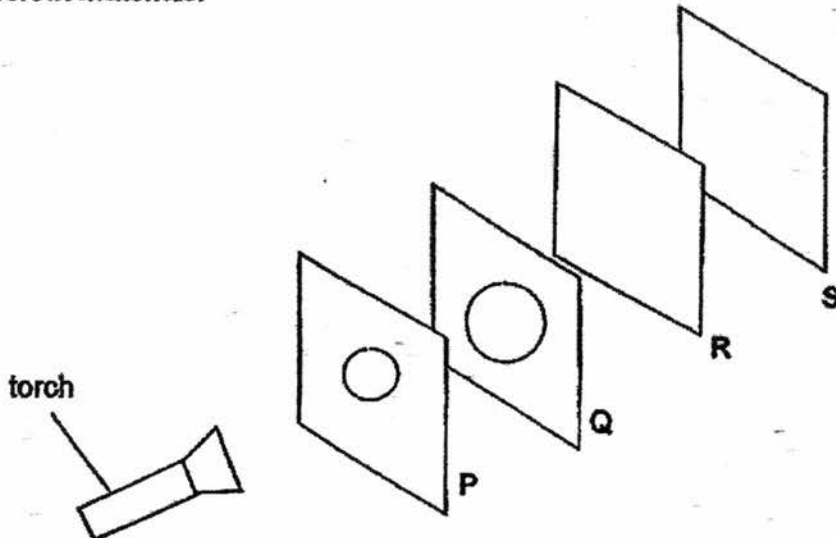
	Dish	Reason
(1)	A	The ice block gains heat faster.
(2)	A	The ice block has a greater exposed surface area to gain heat from the surrounding.
(3)	B	The ice cubes lost heat slower.
(4)	B	The ice cubes have a greater exposed surface area to gain heat from the surrounding.

- 25 Which one of the following is not a source of light?

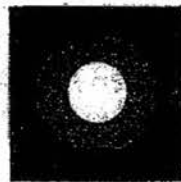
- (1) Sun
- (2) Star
- (3) Moon
- (4) Lightning

(Go on to the next page)

- 26 Zhi Ling carried out an experiment in a dark room. She lined four 25-cm square sheets P, Q, R and S in front of a torch as shown below. The distance between the square sheets was equal. The square sheets were made of different materials.



The diameters of the circular holes cut in sheets P and Q are 5 cm and 10 cm respectively. When she switched on the torch the shadow that formed on sheet S is as shown below.

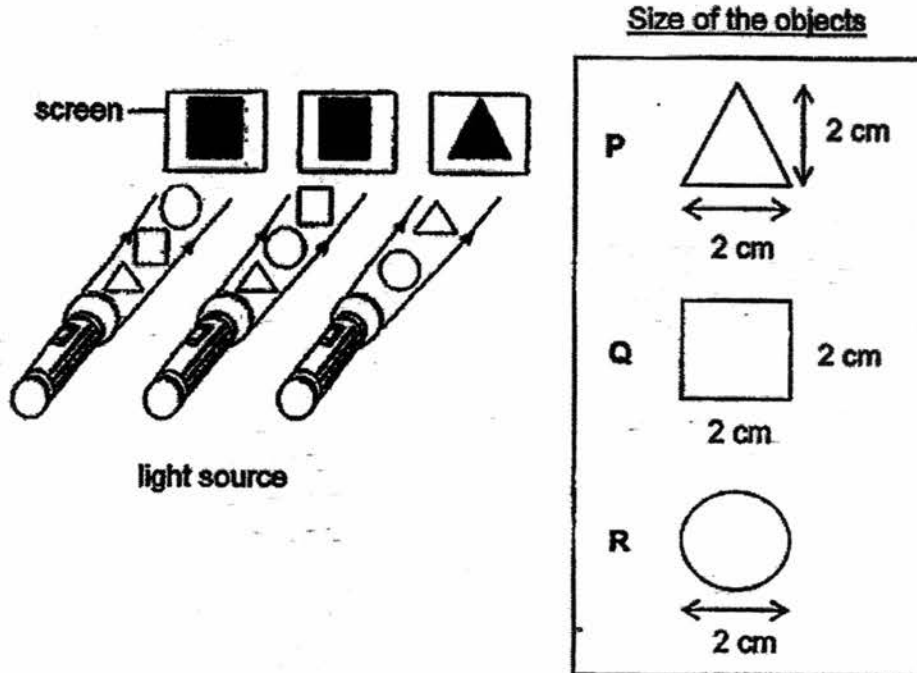


Which one of the following shows the suitable materials used to make the four square sheets?

	P	Q	R	S
(1)	clear glass	cardboard	tracing paper	aluminium
(2)	tracing paper	aluminium	clear plastic	cardboard
(3)	cardboard	tracing paper	aluminium	clear plastic
(4)	tracing paper	clear plastic	clear glass	aluminium

(Go on to the next page)

- 27 Two or three of these objects, P, Q, and/or R, were placed close to each other in a straight line in front of the light source as shown below.

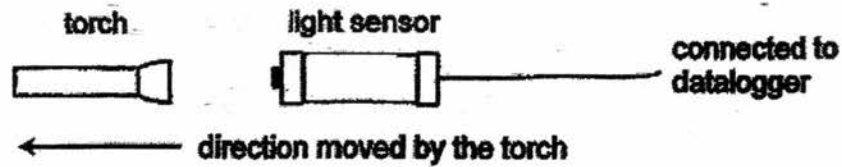


Based on the shadows formed on the screens, which one of the following statements is correct?

- (1) Object R is opaque.
- (2) Object P is transparent.
- (3) Object Q is translucent.
- (4) Objects P and Q are opaque.

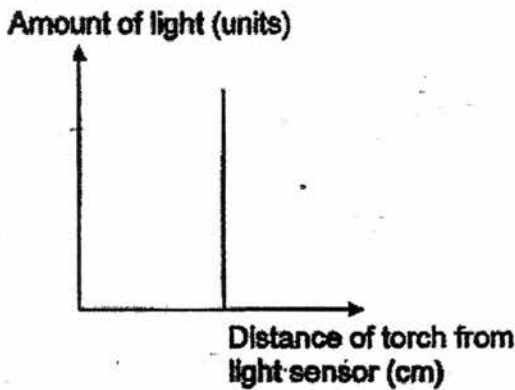
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- 28 A light sensor attached to a data logger measures the amount of light that it is exposed to.

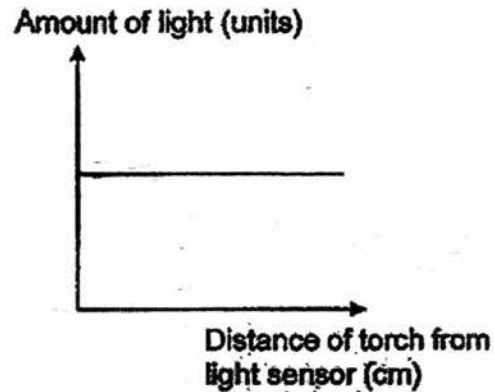


Which one of the following graphs shows how the reading of the data logger changes as the torch is moving away from the light sensor as indicated by the arrow above?

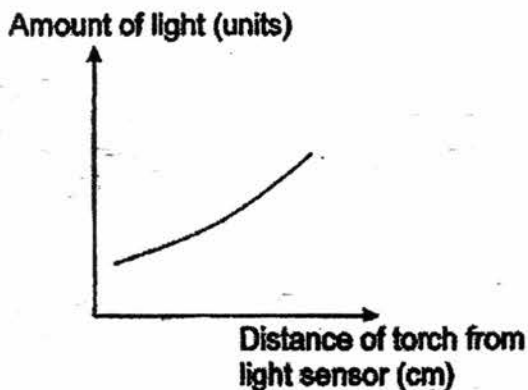
(1)



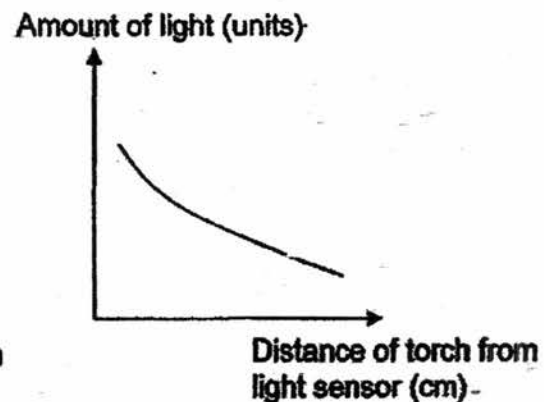
(2)



(3)



(4)



End of Booklet A

METHODIST GIRLS' SCHOOL
Founded in 1887



END-OF-YEAR EXAMINATION 2017
PRIMARY 4
SCIENCE

BOOKLET B1

Total Time for Booklets A and B: 1 hour 30 minutes

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.
Follow all instructions carefully.
Answer all questions.

Name: _____ ()

Class: Primary 4. _____

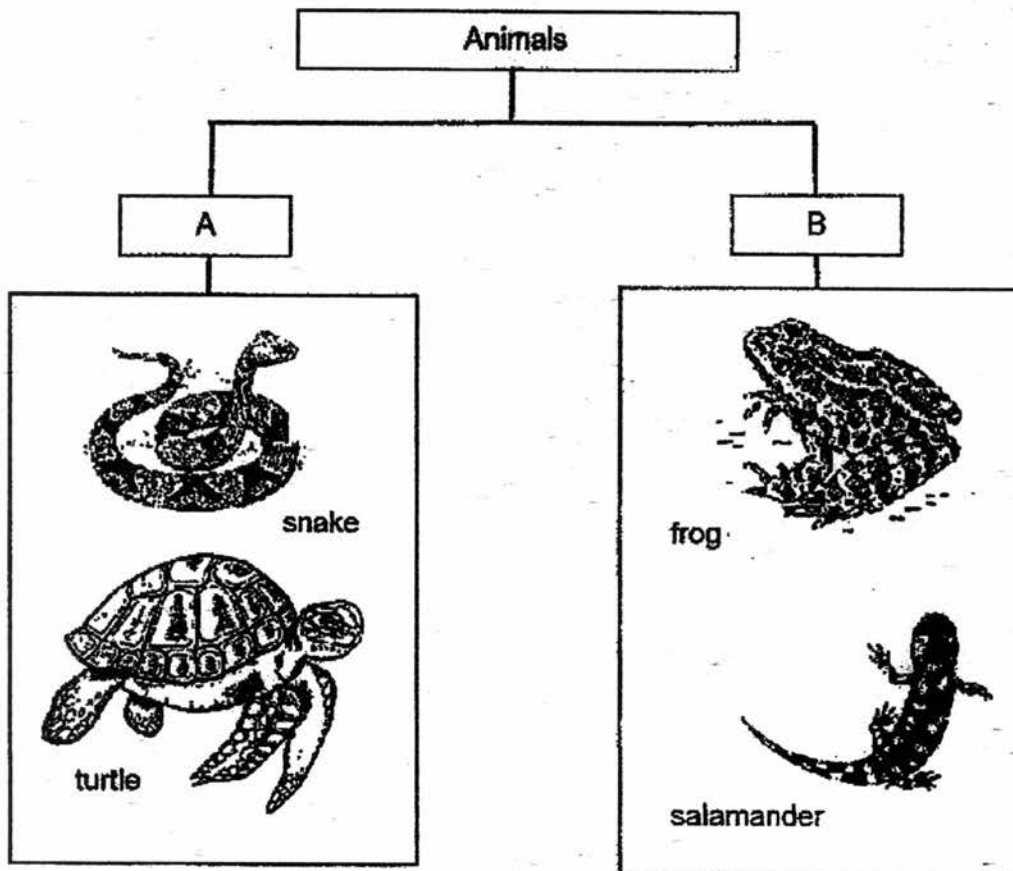
Date : 31 October 2017

Booklet A	56
Booklet B1	17
Booklet B2	17
Total	90
Parent's Signature	

This booklet consists of 8 printed pages including this page.

For questions 29 to 35, write your answers in the spaces provided. The number of marks available is shown in the brackets [] at the end of each question or part question.

29 Study the classification chart below.



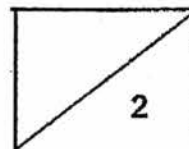
Fill in the correct words from the box to give a suitable heading for A and B.

[2]

reptiles lizards amphibians mammals

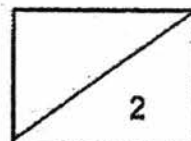
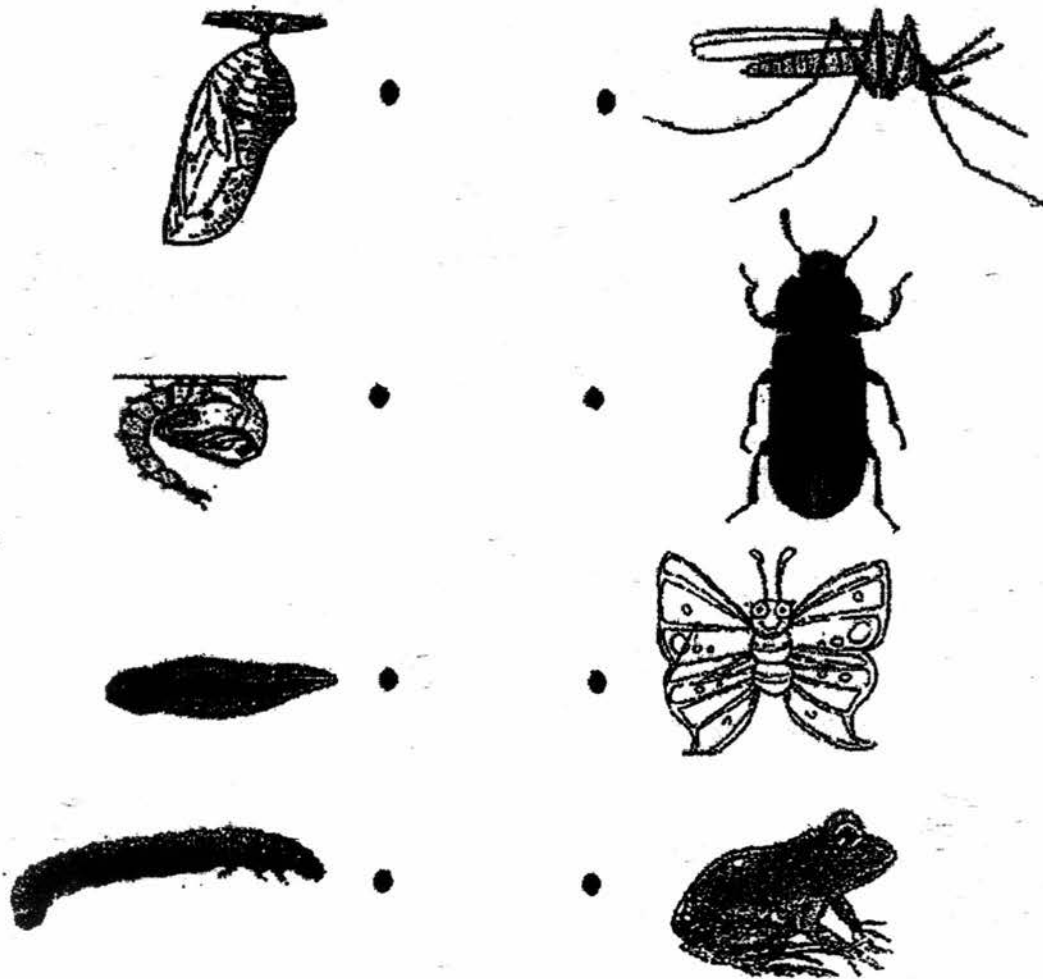
A : _____

B : _____



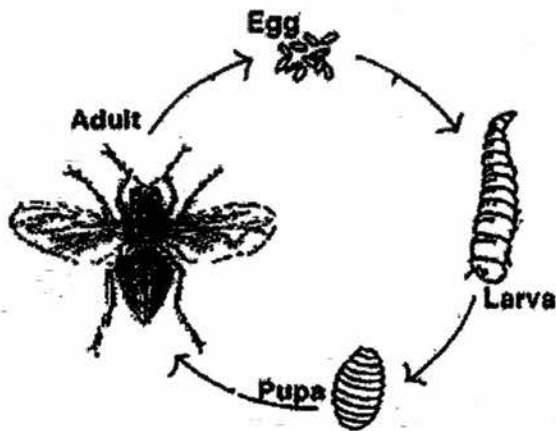
(Go on to the next page)

30 The diagram below shows the young and adult of some organisms. Draw lines to match the young with the correct adult. [2]



(Go on to the next page)

31 Devi studied the life cycle of Organism A as shown below.



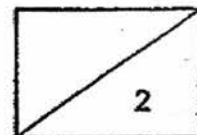
- (a) Which group of animal does Organism A belong to?
Give a reason for your answer.

[1]

Organism A lays eggs which will hatch into larvae on rotten flesh of dead animals. The larvae grow in size after some time.

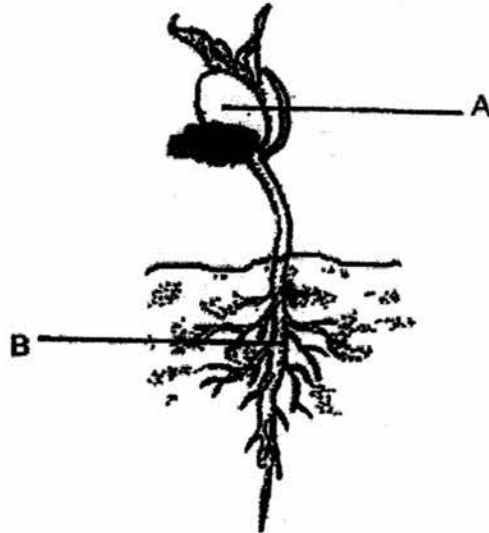
- (b) Why does Organism A lay its eggs on rotten flesh?

[1]



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32 The picture below shows a seedling.



(a) Identify the parts, A and B, of the seedling.

[1]

A: _____

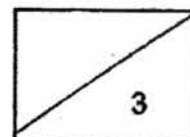
B: _____

(b) Why is it important for the seedling to have Part A at this stage?

[1]

(c) What will happen to the seedling if all of Part B are being removed?
Explain your answer.

[1]

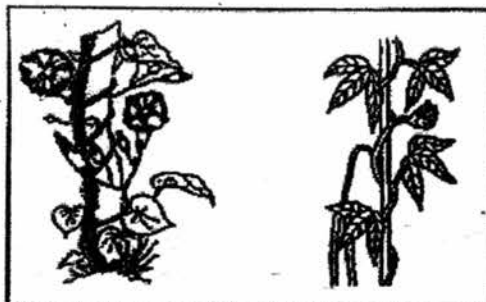


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- 33 Jalil observed the plants growing in a park. He classified the plants Group X and Group Y as shown below.



Group X



Group Y

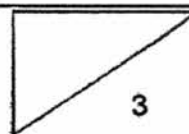
- (a) Based on the pictures above, state a difference between the stems of the plants in Group X and Group Y. (Do not compare their sizes.) [1]

- (b) Based on the pictures above, write down one similar characteristic between the plants in Group X and Group Y? [1]

Jalil also observed that the leaves of some plants in the park are arranged in a very special way shown in the diagram below.



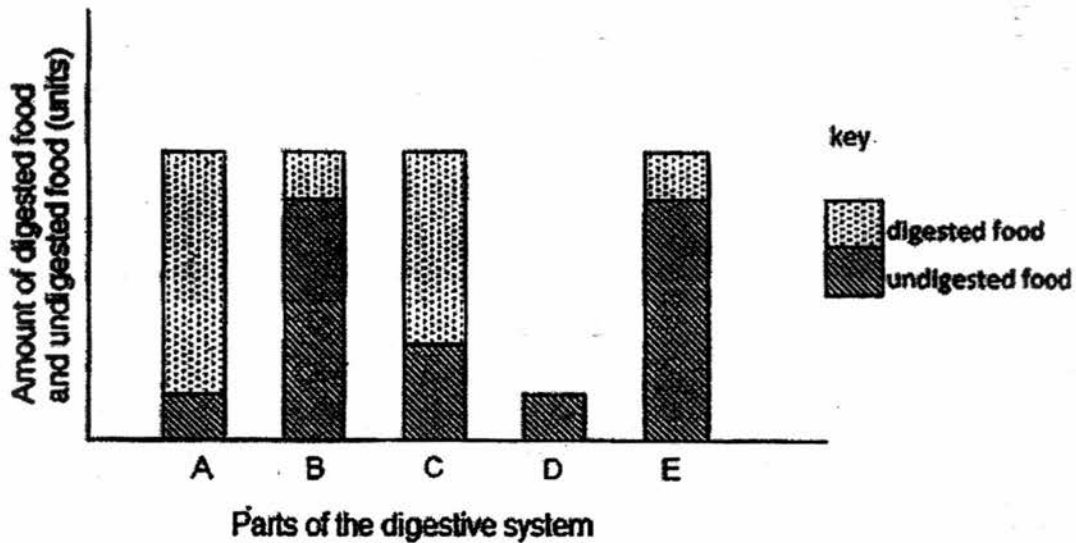
- (c) How does the arrangement of the leaves help the plant to survive better? [1]



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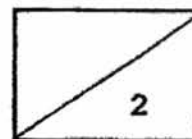
- 34 The graph below shows the amount of digested and undigested food found in each part of the digestive system just before the food moved to the next part of the system.

The parts, A, B, C, D and E of the digestive system are not arranged in order.



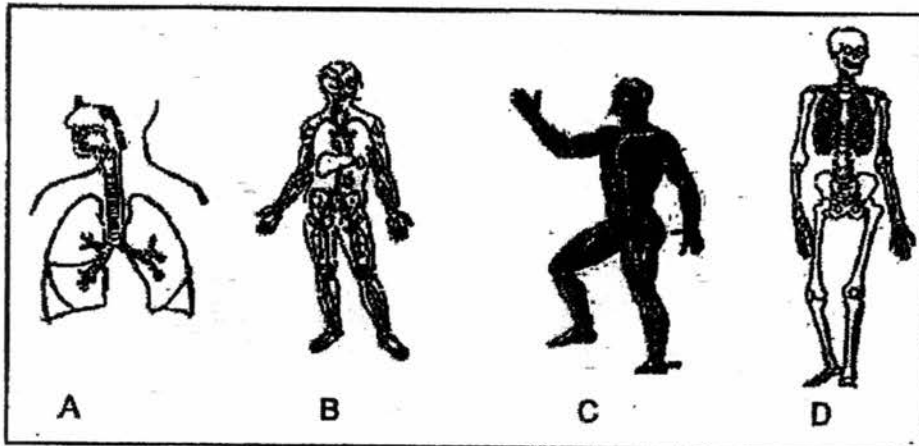
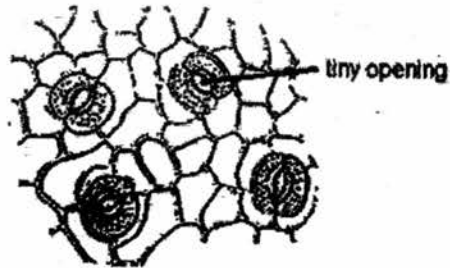
Name the body parts of the digestive system represented by A, C, D and E. [2]

Letter	Organs in the digestive system
A	
B	Gullet
C	
D	
E	



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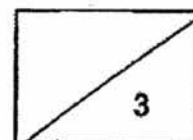
- 35 Study the diagrams of the stomata and the different human systems in the body as shown below.



- (a) Which one of the systems, A, B, C or D in the human system performs a similar function as the stomata in the leaf? Name the system. [1]

- (b) Explain the similarity in the function of both the stomata and the system chosen in (a). [1]

- (c) What could a person do when human systems C and D work together?



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BOOKLET B2

Total Time for Booklets A and B: 1 hour 30 minutes

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Class: Primary 4. _____

Date : 31 October 2017

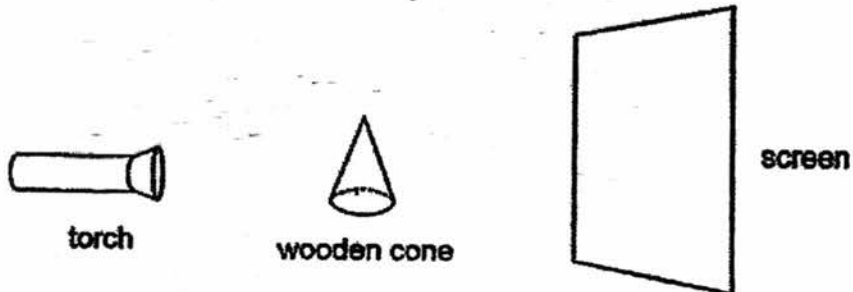
Booklet B2	17
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This booklet consists of 8 printed pages including this page.

For questions 36 to 42, write your answers in the spaces provided. The number of marks available is shown in brackets [] at the end of each question or part question.

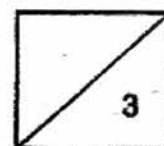
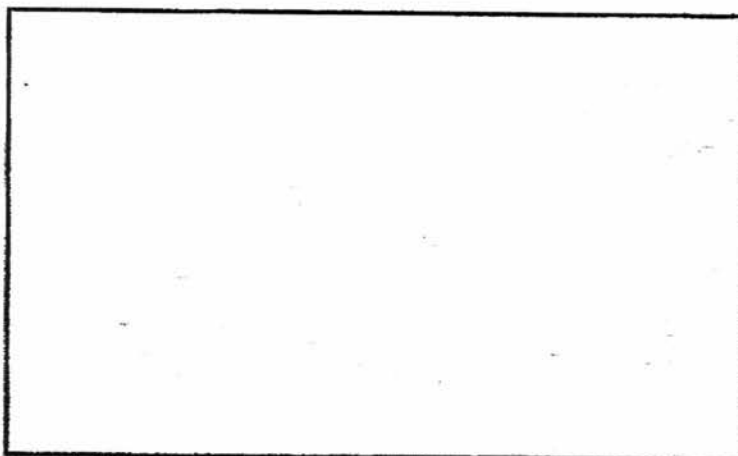
[17 marks]

36 Samy shines a torch on a wooden cone and a shadow is formed on the screen.



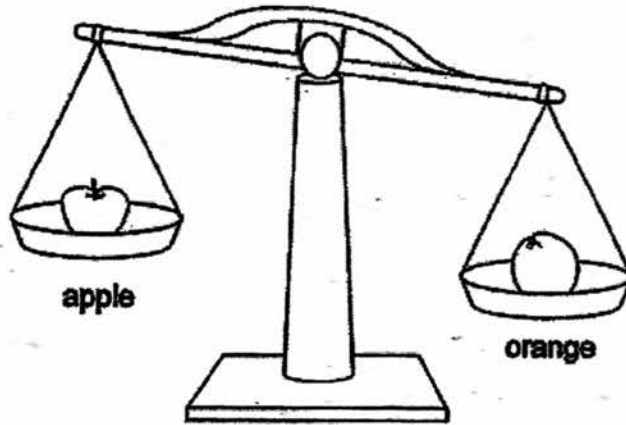
Fill in the blanks with an appropriate answer.

- (a) A shadow is formed when light is _____ by an object. [1]
- (b) When the torch moves further away from the cone, the shadow becomes _____. [1]
- (c) Draw the shadow of the cone that is formed on the screen. [1]



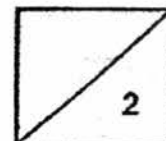
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37 Gopal set up the apparatus as shown below.



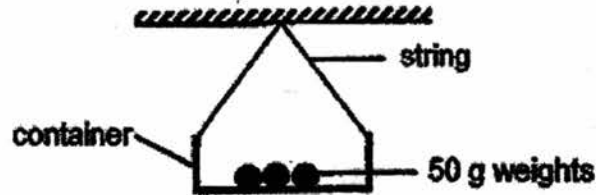
Study the set-up and circle the correct answers for questions (a) and (b).

- (a) The 'mass' / 'volume' of the orange is [1]
- (b) 'greater than' / 'the same as' / 'smaller than' the apple. [1]



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- 38 Mrs Lee conducted an experiment with three different types of strings of similar length and thickness. She placed 50 g weights in a container held by each string (as shown below) until it broke.

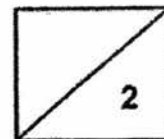


Mrs Lee's results were recorded in the table below.

String	Number of 50 g weights added
A	7
B	11
C	3

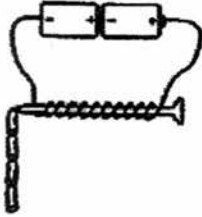
- (a) What was Mrs Lee trying to find out? [1]

- (b) Based on Mrs Lee's results, which string should she use to make a fishing line? Explain your answer. [1]



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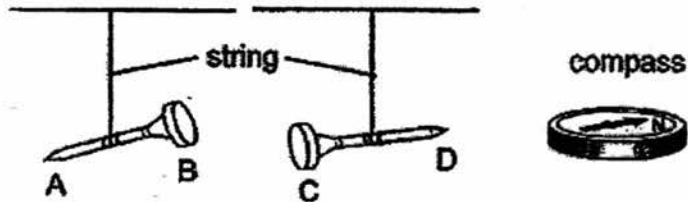
39 Bala made an electromagnet using an iron nail as shown below. He placed some paper clips near the electromagnet and recorded his observations in the table below.




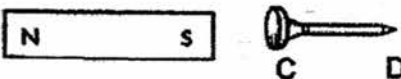
Number of coils	Number of paper clips attracted
8	11
11	15
14	19
17	23

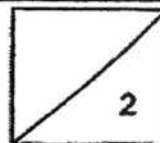
(a) What could Bala conclude about the electromagnetic strength based on the table above? [1]

(b) Bala magnetised two more nails by the method above and suspended each nail by a string separately. The nails then came to rest in the directions as shown below.



A magnet is then brought close to each nail as shown in the table below. Put a tick (✓) in the correct boxes to indicate the interaction between each nail and the magnet. [1]

Case	Attracted	Repelled
(i) 		
(ii) 		

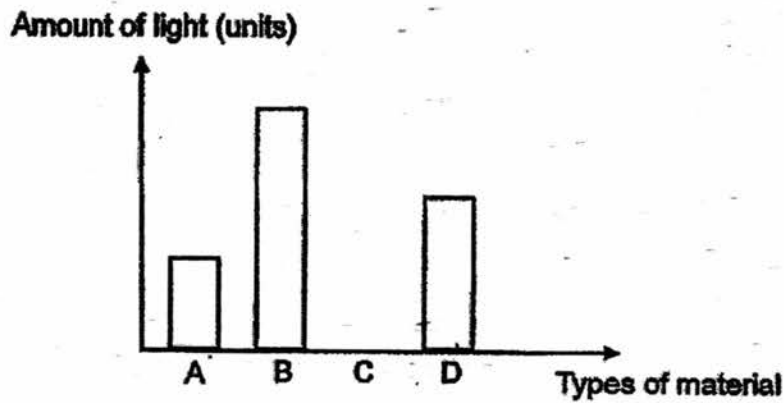


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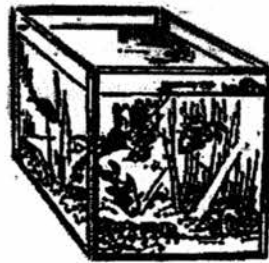
- 40 Mr Lee wanted to know how much light passes through materials, A, B, C and D. He set up the experiment as shown below.



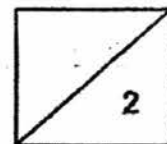
The results were recorded in the graph below.



Mr Lee would like to make a tank for his aquarium.

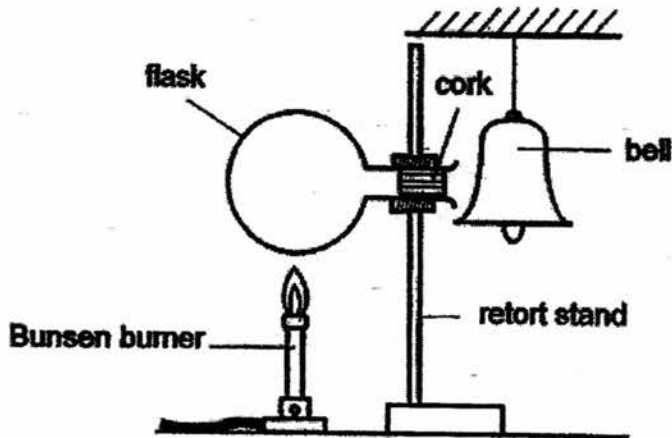


Which material, A, B, C or D, should Mr Lee choose to make his tank? Explain your answer clearly. [2]



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- 41 Lily set up a flask near a bell as shown below. The flask was loosely fitted with a cork and held by a retort stand. She then gently heated the flask using a Bunsen burner.

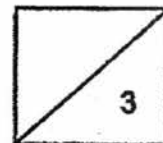


After some time, a sound was made by the bell.

- (a) What had caused the bell to sound? [1]

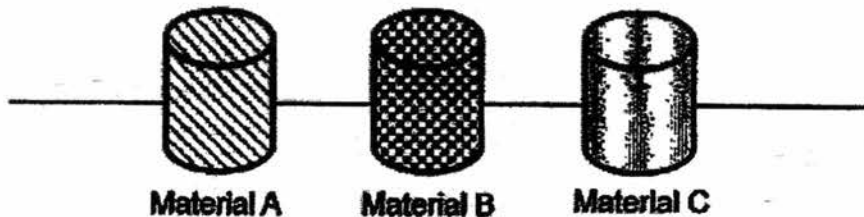
- (b) Explain your answer in (a). [1]

- (c) If Lily had used a smaller flame, would the time taken for the bell to sound be longer or shorter? Explain your answer. [1]

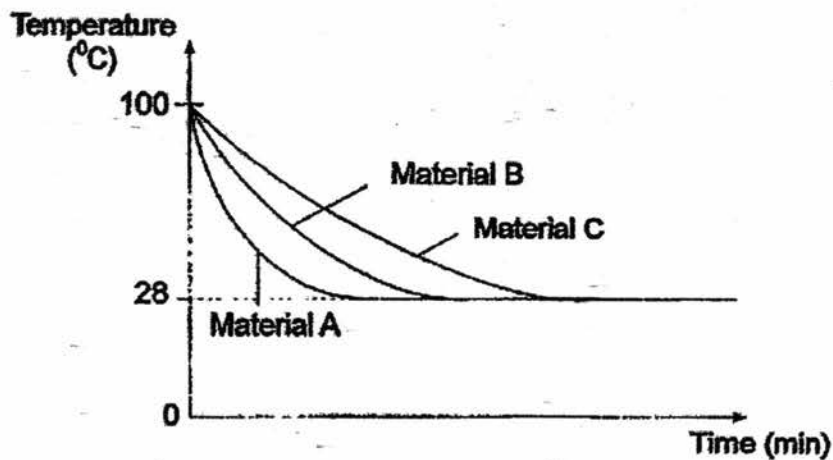


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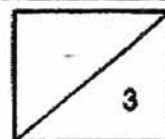
- 42 Ms Shah poured an equal amount of boiling water into three identical containers made of different materials, A, B and C, as shown below.



Ms Shah recorded the temperature of the water in each container at regular intervals for 40 minutes. She then plotted her results in the graph as shown below.



- (a) Why did the temperature of water in all the three containers become 28°C after 40 minutes? [1]
- _____
- _____
- (b) Ms Shah would like to choose a suitable material for making a cooler bag to keep her cold drinks cool for a longer period of time. Based on the results given, which material, A, B or C, would be the most suitable for making the cooler bag? Explain your answer. [2]
- _____
- _____
- _____



End of Booklet B2

EXAM PAPER 2017 (P4)

SCHOOL : MGS

SUBJECT : SCIENCE

TERM : SA2

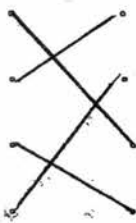
ORDER CALL :

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

29)A : reptile

B : Amphibians

30)



31)a)Insects. The adult have six legs. All insects have 6 legs.

b)So that when the egg is hatched, the young would be able to feed on the rotten flesh immediately. Allowing it to grow in size.

32)a)A : seed leaves

B : roots

32)b)The seedling's first leaves are not fully develop. Part A, the seed leaves provides the plant with food as the leaves are not fully develop. Without Part A, the seed would die, as it needs food to survive.

c)The seed would die. The seedling needs water and mineral salt. Part B is the roots. Removing the roots the seedling would not be able to have water mineral slats as the roots absorb water. The seedling would be uprooted too. The roots anchors the plant firmly to the ground.

33)a)Group X stems are strong and is able to support the plant upright to taken in sunlight while Group Y has a weak stem and is not able to support the plant.

b)Both of them are flowering plant.

c)The leaves are more widespread. This will help the leaves absorb maximum sunlight to make food for the plant.

34)A --- small intestine

B--- Gullet

C---stomach

D---large intestine

F---mouth

35)a)System A. Respiratory system.

b)Both the stomata and the respiratory system helps to allow the plant and body to take in oxygen and get rid of carbon dioxide allowing carbon dioxide to be removed from the plant and body.

c)A person could kick a ball.

36)a)blocked

b)smaller

c)



37)a)mass

b)greater than

38)a)Mrs Lee was trying find out which A, B or C is the strongest.

b)A. fishing line must support the most weight of the fish and string B is the strongest.

39)a)As the number of coils increased, the strength of then magnetic strength of the electromagnet increases to attract more paper clips.

b)i)Attracted ii)Repelled

40)B. B is transparent. It allows all light to pass through completely compared to A, C and D. Hence, using D allow Mr Lee to see the fishes in the aquarium most clear compared to C, D and A.

41)a)The cork popped out of flask and hit the bell.

b)The Bunsen burner heated the flask causing the air in the flask to gain heat from the flask and expand. Some air then escaped into the surrounding heating the bell ringing it.

c)Longer. The air in the glass would take a longer time to gain heat from the Bunsen burner and expand.

42)a)The boiling water lose heat, to surrounding air and reached room temperature 28°C .

b)Material C. C is the poorest conductor of heat . compared to A , B as it the boiling water in it lost heat to the surrounding. Hence when Mrs Shah puts her drink into the material C, the drinks would gain heat from C the slowest compared to A and B. Helping it to keep cool.

