

PRIMARY 4 MID-YEAR EXAMINATION 2017

Name : _____ ()

Date: 8 May 2017

Class : Primary 4 ()

Time: 1 hour 45 minutes

Parent's Signature : _____

Marks: _____ / 58

**SCIENCE
BOOKLET A**

INSTRUCTIONS TO CANDIDATES

Write your name, class and register number.

Do not turn over this page until you are told to do so.

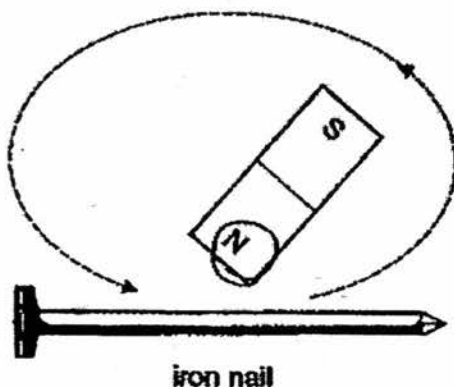
Follow all instructions carefully.

Answer all questions.

Section A (56 marks)

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

1. John stroked an iron nail using the north pole of a magnet in the same direction for 20 times. He observed that the iron nail could attract 4 paperclips.



What should John do if he wants the iron nail to attract more than 4 paperclips?

- (1) Drop the iron nail on the floor.
 - (2) Heat the iron nail over a flame.
 - (3) Stroke the iron nail another 20 times using the north pole of the magnet in the same direction.
 - (4) Stroke the iron nail another 20 times using the south pole of the magnet in the same direction.
2. Which one of the following statements about roots is correct?
- (1) Roots transport water to all parts of the plant.
 - (2) Roots support the plant and help it to grow tall.
 - (3) Roots help the plant take in water and food from the soil.
 - (4) Roots prevent the plant from being uprooted during strong winds.

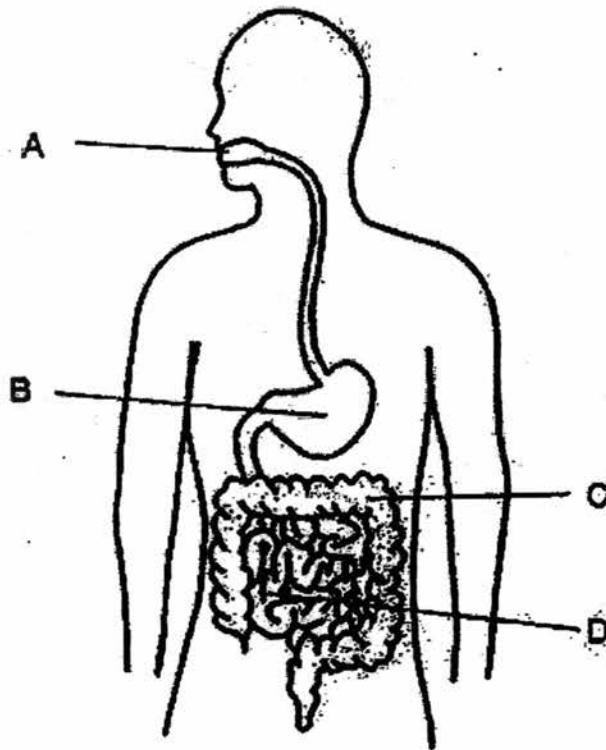
3. Animal X has the following characteristics.

- It has 1 pair of antennae.
- It has 2 pairs of wings.
- It has 3 pairs of legs.

What animal group does animal X belong to?

- (1) Fish
- (2) Bird
- (3) Insect
- (4) Mammal

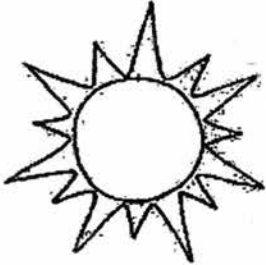
4. The diagram below shows the human digestive system.



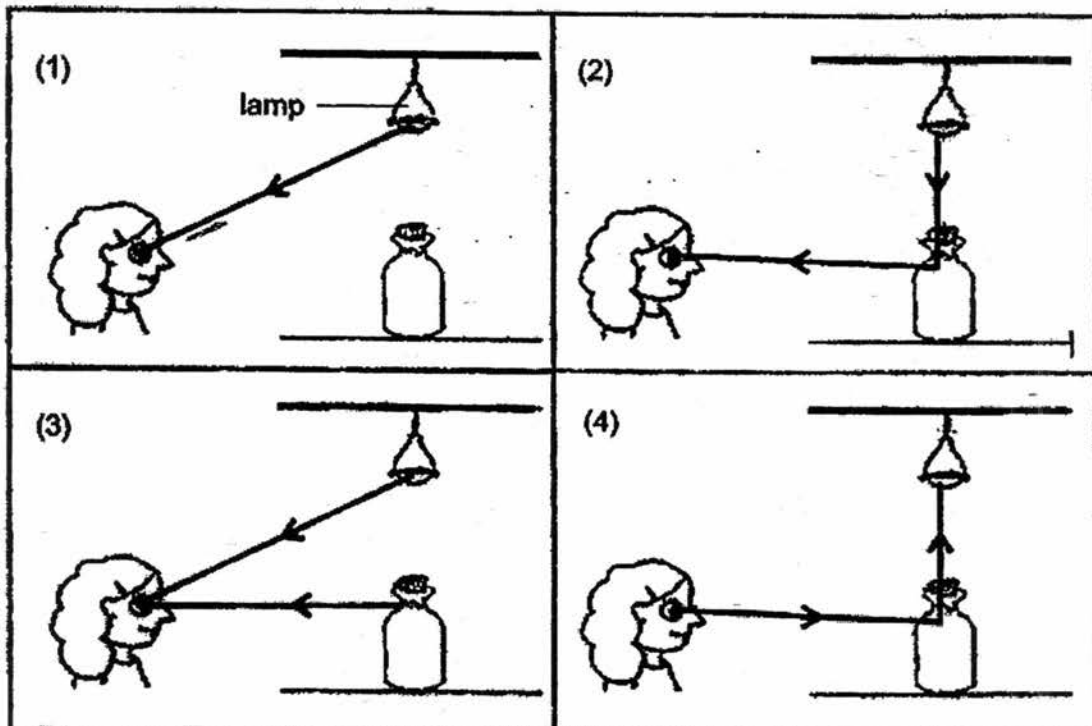
At which part, A, B, C or D, does digestion end?

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

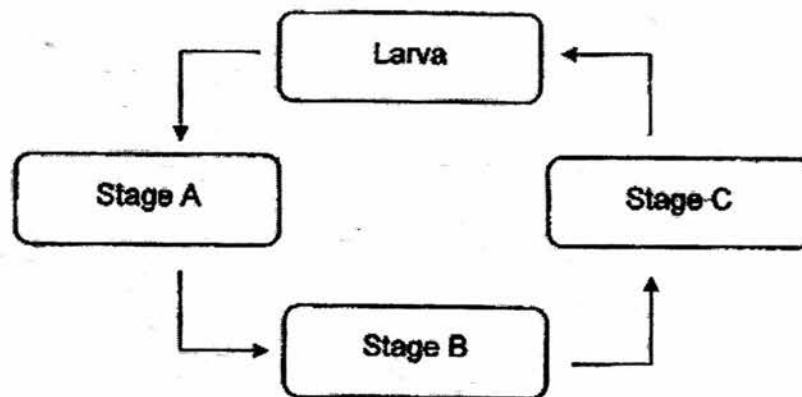
5. Which of the following gives off its own light?

(1) mirror 	(2) aluminium foil 
(3) Sun 	(4) Moon 

6. Mary is able to see a bottle under a lamp. Which one of the diagrams below correctly shows the path of light that enables her to see the bottle?



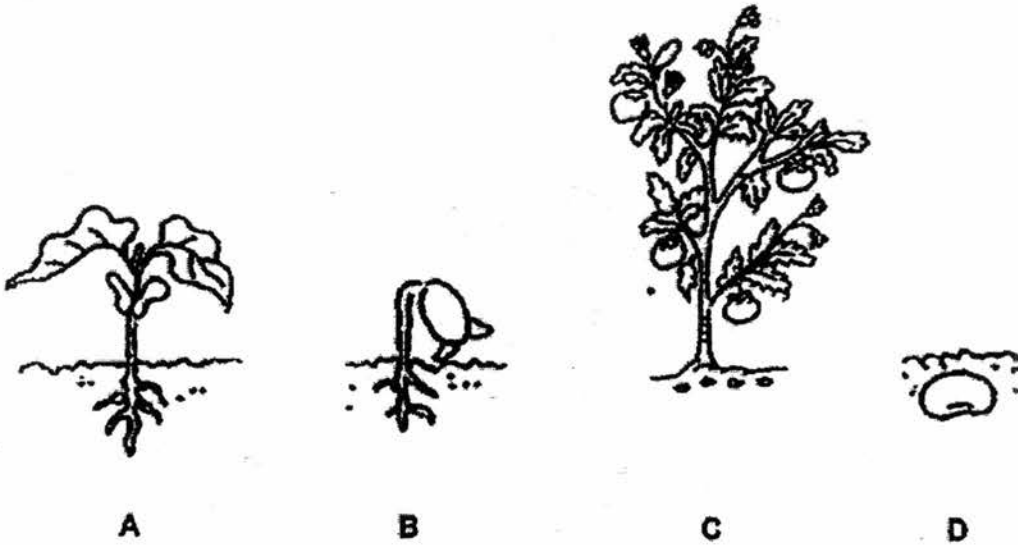
7. The diagram below shows the life cycle of an insect.



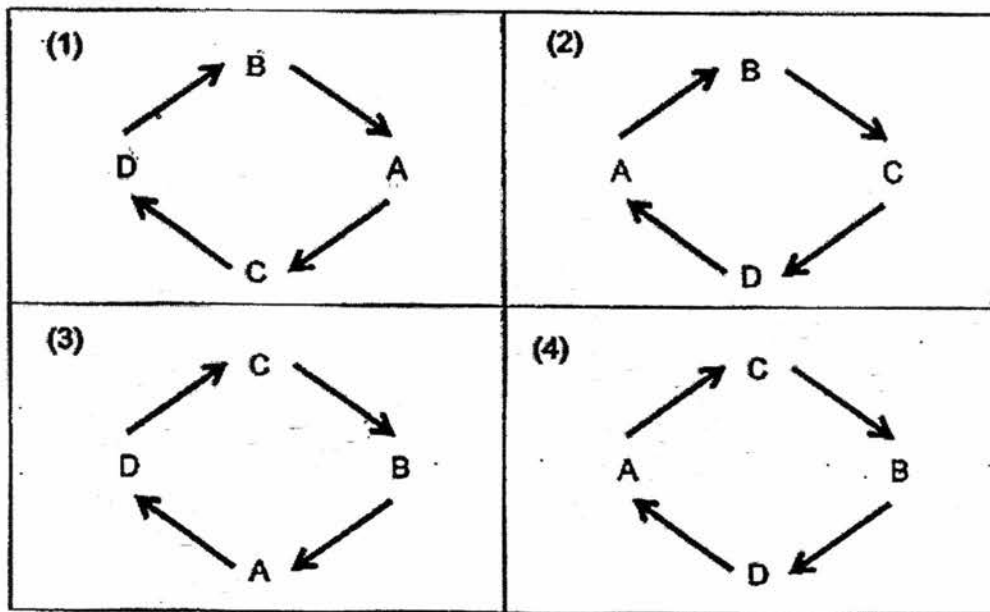
Which are the stage(s) that the insect does not feed?

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

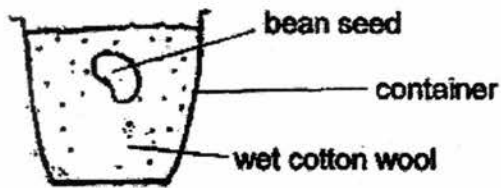
8. Cindy drew pictures of different stages of the life cycle of a plant.



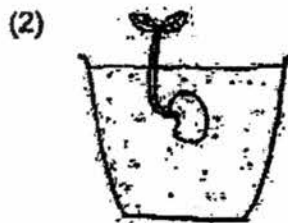
Which of the following shows the correct sequence of the life cycle of the plant?



9. Muthu placed a bean seed into a container of wet cotton wool as shown below. He placed it on a table near a window.



Which one of the following diagrams shows what he would first observe after a few days?



10. Which one of the following is not a matter?

- (1) Oil
- (2) Ice
- (3) Glass
- (4) Music

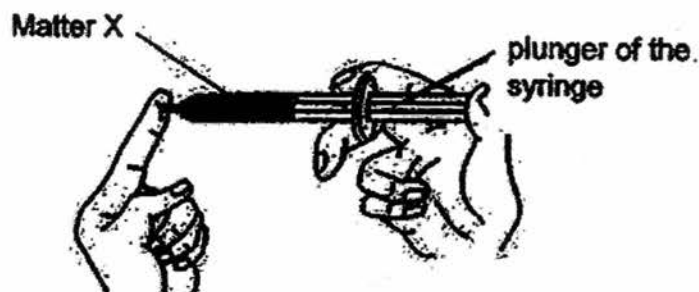
11. The table below shows the properties of 3 matters, A, B and C.

	A	B	C
Has fixed shape	No	Yes	No
Has fixed volume	Yes	Yes	No

Which of the following are correct examples of matters A, B and C?

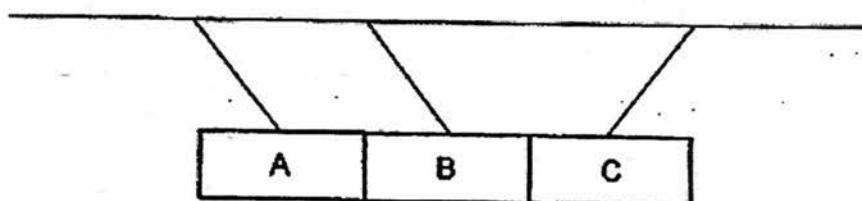
	A	B	C
(1)	saliva	air	book
(2)	saliva	book	air
(3)	book	air	saliva
(4)	book	saliva	air

12. Remmy filled the syringe below with 5 cm³ of matter X and covered the nozzle with his finger. He could push in the plunger of the syringe slightly.



What can he conclude about matter X?

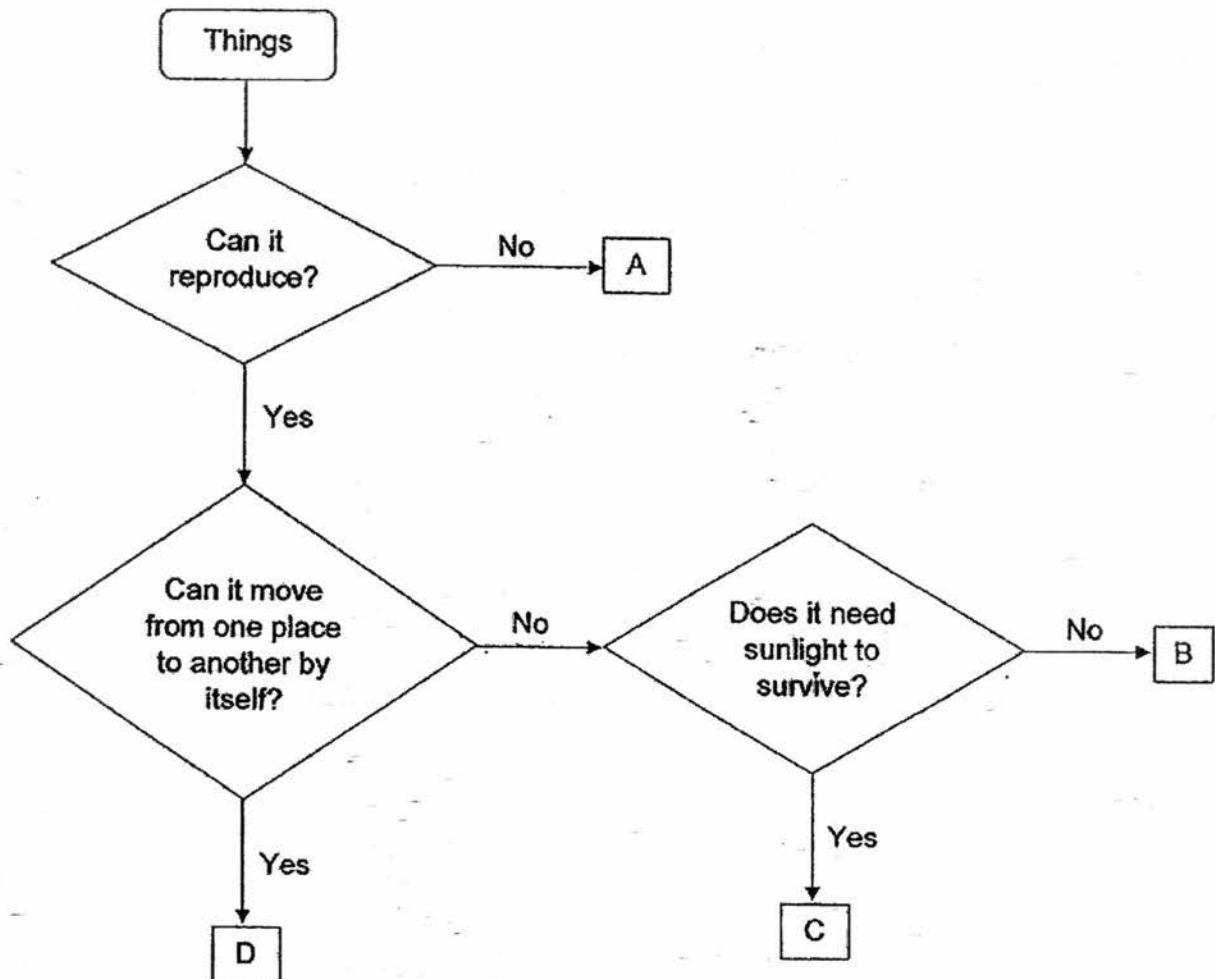
- (1) Matter X is a solid.
 - (2) Matter X is a liquid.
 - (3) Matter X has a fixed volume.
 - (4) Matter X can be compressed.
13. 3 bars, A, B, and C, are suspended in the air. The diagram below shows the positions of the bars when they are brought near each other.



Which statement is definitely true?

- (1) Bar A is repelling Bar C.
- (2) None of the bars are magnets.
- (3) Bar B is made of a non-magnetic material.
- (4) All the bars are made of magnetic materials.

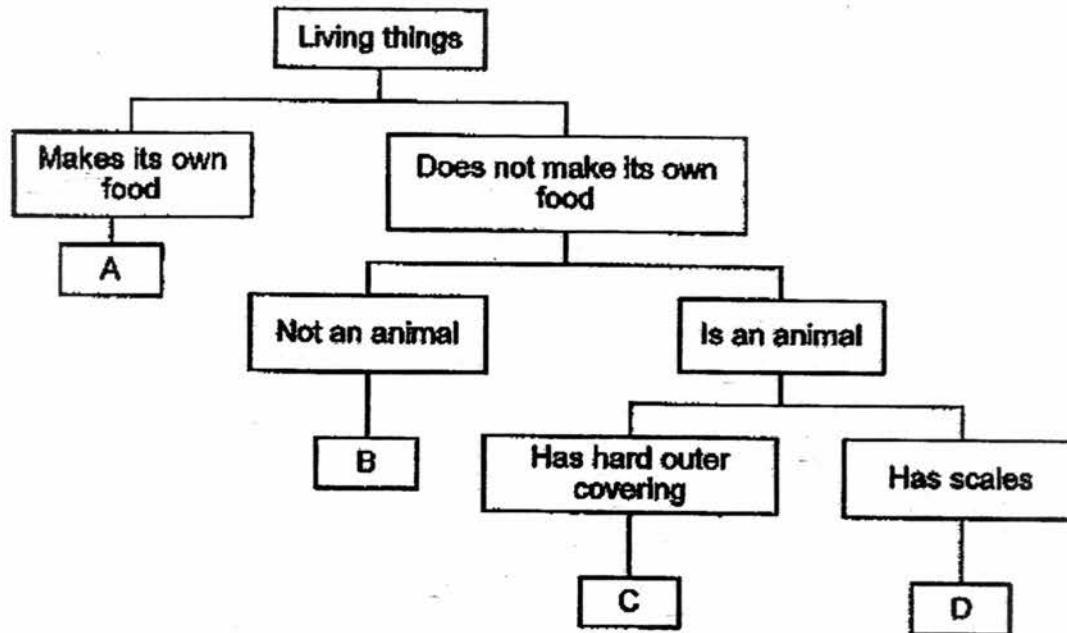
14. Study the flow chart below.



Which of the above items, A, B or C, could likely be a pencil and a mushroom?

	Pencil	Mushroom
(1)	A	B
(2)	A	C
(3)	B	C
(4)	C	A

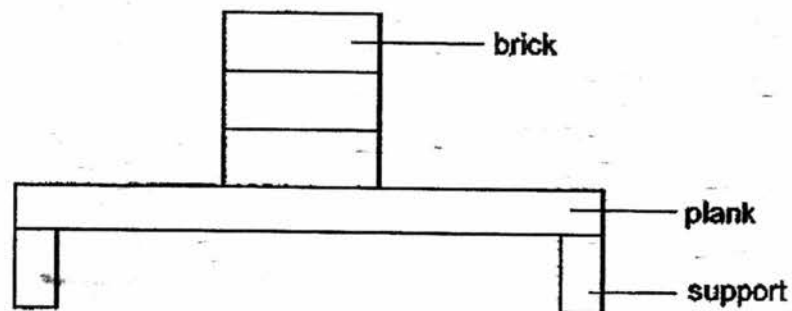
15. Study the classification chart below.



What could A, B, C and D be?

	A	B	C	D
(1)	mould	bacteria	.butterfly	crocodile
(2)	fern	bacteria	butterfly	crocodile
(3)	fern	mould	crocodile	butterfly
(4)	bacteria	fern	butterfly	crocodile

16. Mei Yu wanted to investigate the strength of 4 similar planks made of different materials, P, Q, R and S. She placed identical bricks, one at a time, on each plank as shown below until it broke.



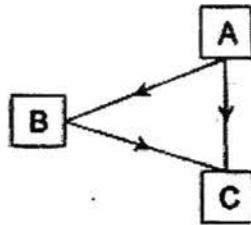
The results were recorded in the table below.

Material	Number of bricks needed to break the plank
P	34
Q	89
R	50
S	11

Which material is most suitable for making a bench for people to sit on?

- (1) P
- (2) Q
- (3) R
- (4) S

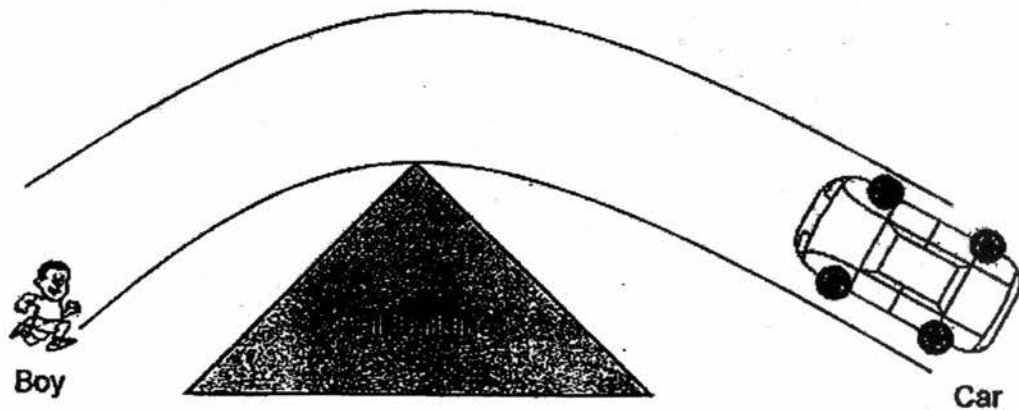
17. The diagram below shows how Jerry is able to see a ball and a lamp.



Which of the following correctly matches the letters, A, B and C, to Jerry, the ball and the lamp?

	A	B	C
(1)	Jerry	lamp	ball
(2)	Jerry	ball	lamp
(3)	lamp	Jerry	ball
(4)	lamp	ball	Jerry

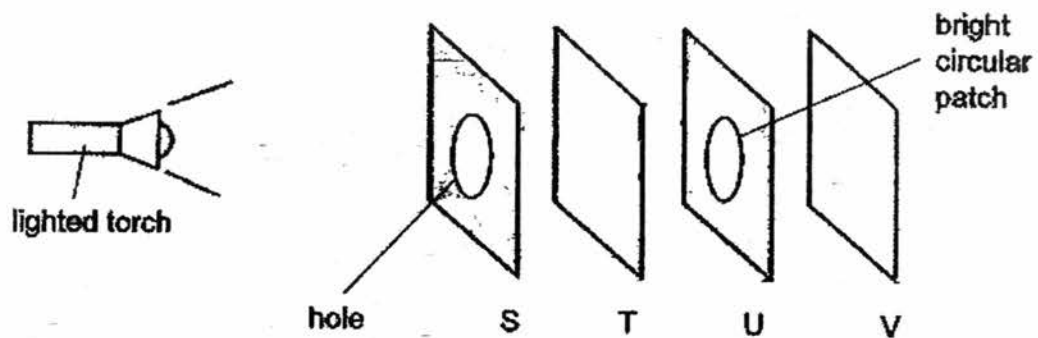
18. A driver was driving his car around a corner of a tall building on a sunny day.



The driver of the car could not see the boy running because _____.

- (1) there was no light
- (2) light is not a matter
- (3) light travels in a straight line
- (4) light could not be reflected off the boy

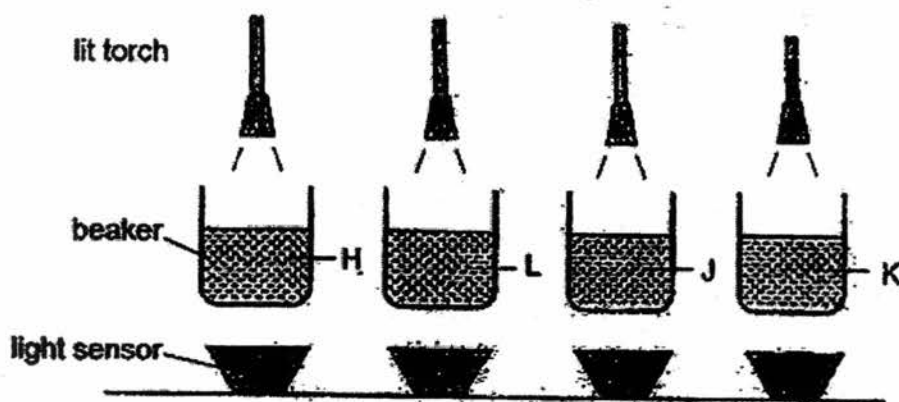
19. Li Peng set up the following experiment using four sheets made of different materials, S, T, U and V. When the torch was switched on, a small, bright circular patch of light was seen on sheet U only.



Which of the following best describes the properties of the materials?

	Allows most light to pass through	Does not allow any light to pass through	Not possible to tell
(1)	S and T	U	V
(2)	T	S and U	V
(3)	S	T	U and V
(4)	T	S	U and V

20. Johnny wanted to find out how much light can pass through 4 different liquids, H, L, J and K. He set up the experiment shown below with 200 ml of each liquid in the respective beakers in a dark room.



His observations for each liquid is as follow.

Light sensor readings (units)			
H	L	J	K
0	70	111	25

Which one of the following statements is correct?

- (1) J is opaque.
- (2) H allows most light to pass through.
- (3) All liquids allow light to pass through.
- (4) L allows more light to pass through than K.

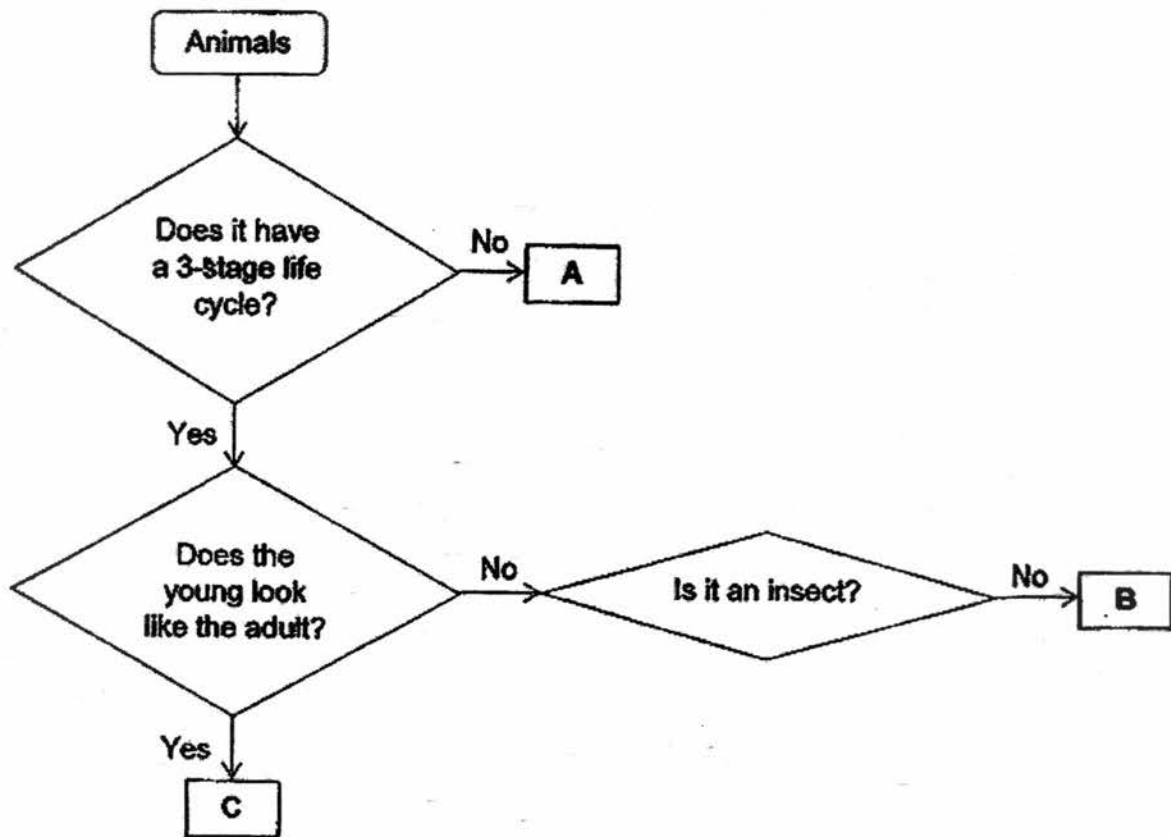
21. Faridah observed the growth of a living thing over 2 weeks. She recorded her observations in the table below.

Date	Observation
03 January 2017	Egg hatched into a larva.
10 January 2017	Larva became a pupa.
14 January 2017	Pupa became an adult.

Based on Faridah's observations, which of the following statements is definitely true?

- (1) The young resembles the adult.
- (2) The pupa eats a lot to develop into an adult.
- (3) The living thing spends most of its life cycle in the water.
- (4) The living thing has the same number of stages in its life cycle as a butterfly.

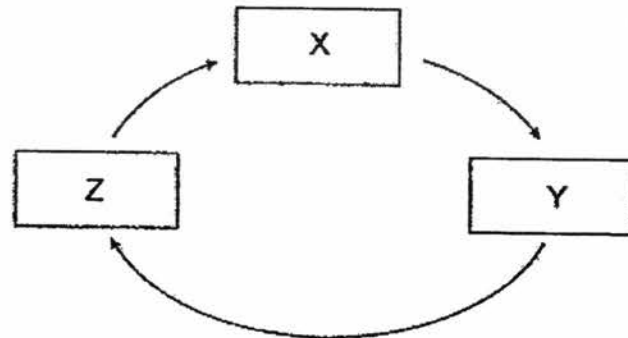
22. Study the flow chart below.



Based on the information given above, which of the following correctly represent animals A, B and C?

	A	B	C
(1)	mosquito	beetle	grasshopper
(2)	frog	cockroach	chicken
(3)	mosquito	grasshopper	chicken
(4)	beetle	frog	cockroach

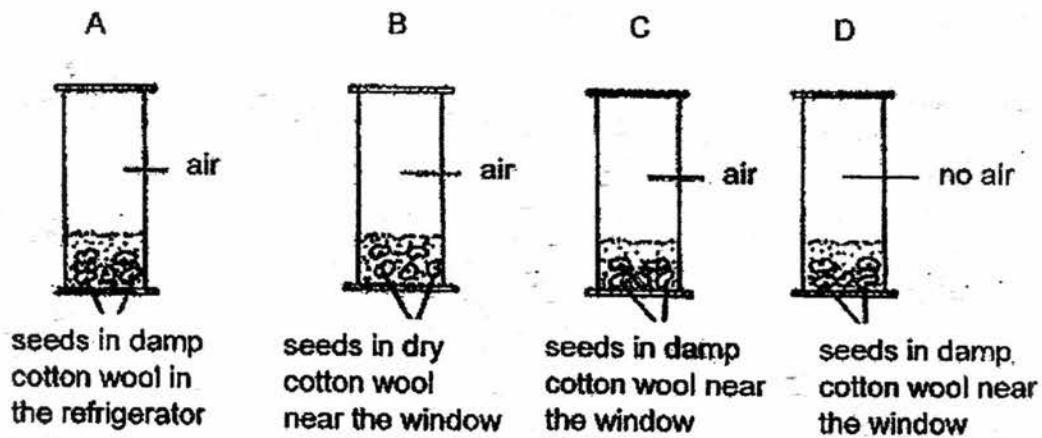
23. Study the life cycle of a flowering plant below.



Which of the following correctly represent the stages X, Y and Z?

	X	Y	Z
(1)	seedling	young plant	adult plant
(2)	adult plant	young plant	seed
(3)	young plant	adult plant	seed
(4)	adult plant	seedling	seed

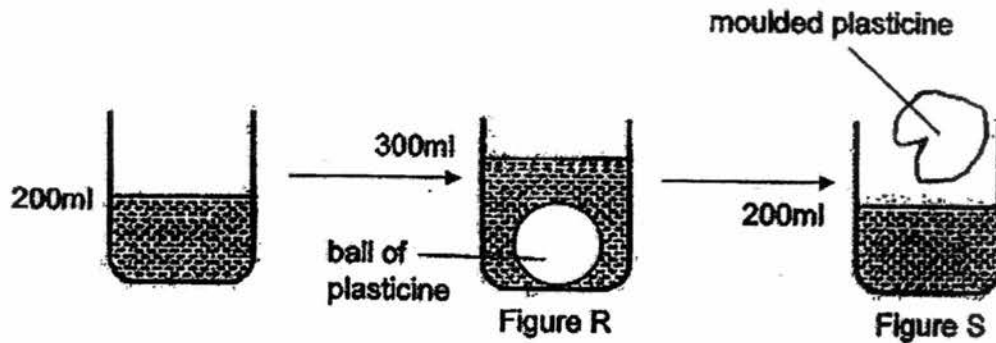
24. The jars below contain seeds from a plant. Jar A is placed in the refrigerator while jars B, C and D, are placed near the window.



In which jars, A, B, C or D, will the seeds most likely germinate?

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

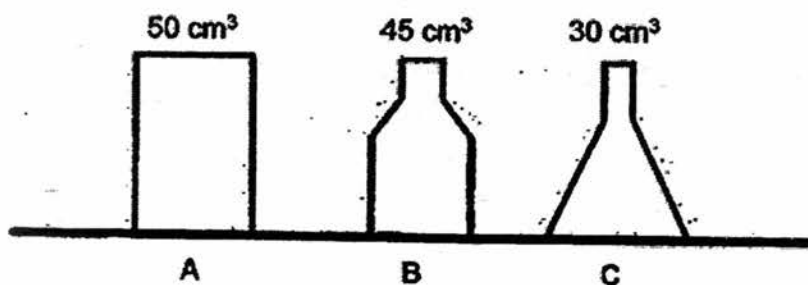
25. A ball of plasticine was put into a beaker containing 200 ml of water. The water level increased to 300 ml, as shown in Figure R.



The plasticine was then removed from the water and moulded into another shape. It was put back into the beaker as shown in Figure S.

What would the new water level be?

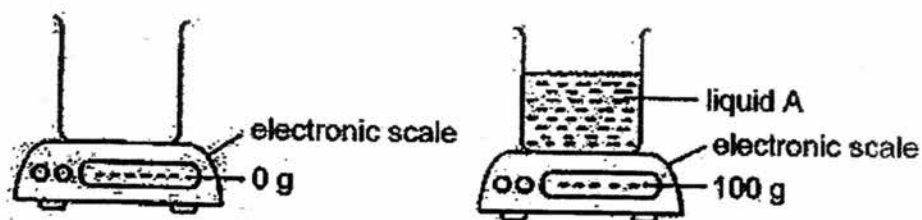
- (1) 200 ml
 - (2) 300 ml
 - (3) 400 ml
 - (4) 500 ml
26. Sammy has 3 sealed containers, A, B and C, as shown below.



Which container(s), A, B and/or C, can Sammy pump in 45 cm³ of air?

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

27. The two beakers below were identical.



The above shows that liquid A _____.

- (1) has mass
- (2) has volume
- (3) is transparent
- (4) occupies space

28. Ramlee has a sealed ping pong ball of mass 2.5 g. The ball became dented after being pressed as shown below.



Which one of the following statements on the ping pong ball is true? The ping pong ball _____.

- (1) is lighter now
- (2) is heavier now
- (3) occupies more space now
- (4) has the same mass as before

End of Booklet A

PRIMARY 4 MID-YEAR EXAMINATION 2017

Name : _____ ()

Date: 8 May 2017

Class : Primary 4 ()

Duration: 1 hour 45 minutes

Parent's Signature : _____

**SCIENCE
BOOKLET B**

INSTRUCTIONS TO CANDIDATES

Write your name, class and register number.

Do not turn over this page until you are told to do so.

Follow all instructions carefully.

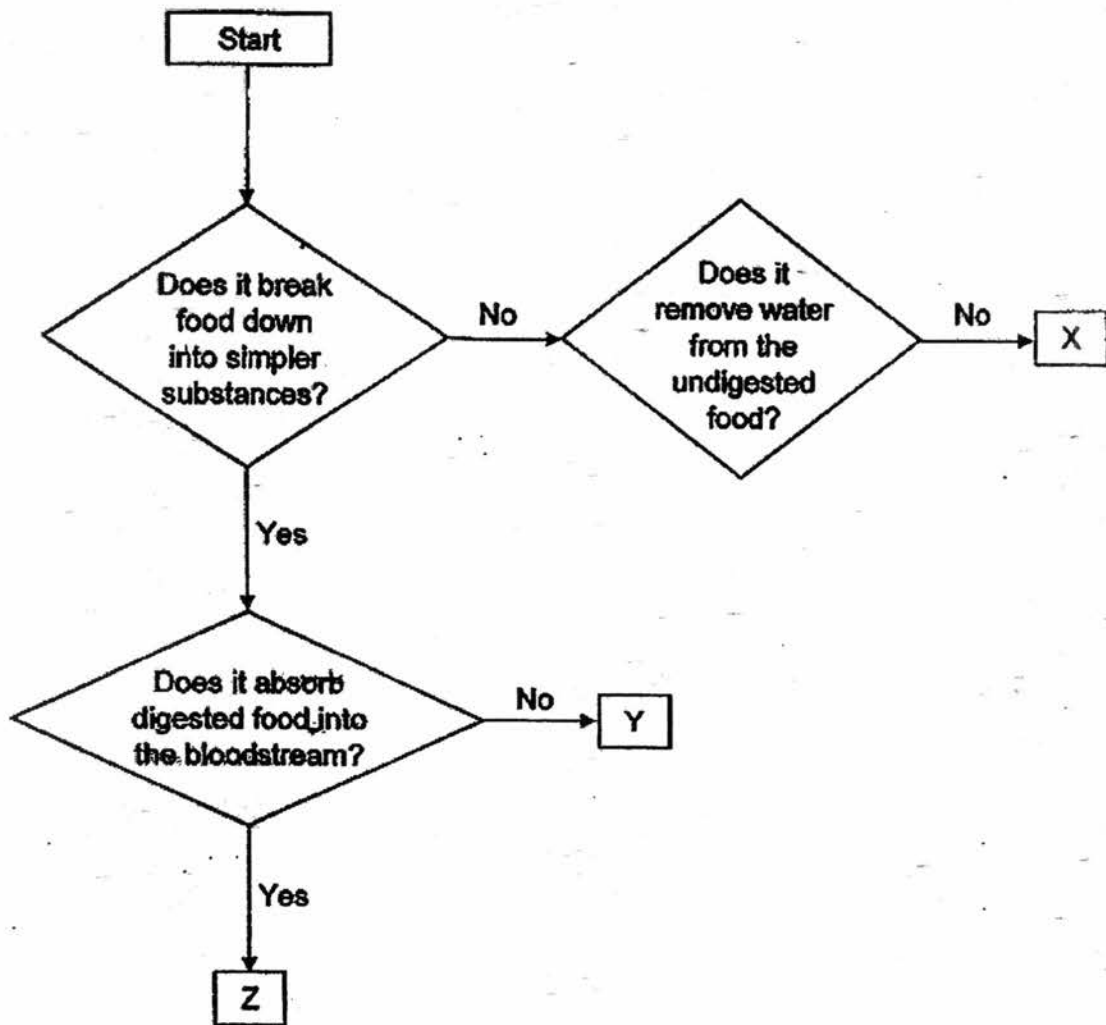
Answer all questions.

Booklet A	56
Booklet B	44
Total	100

Section B (44 marks)

For questions 29 to 42, write your answers in this booklet. The number of marks available is shown in [] at the end of each question or part question.

29. Study the flow chart on the parts of a human digestive system below.



Identify parts X, Y and Z, in the human digestive system.

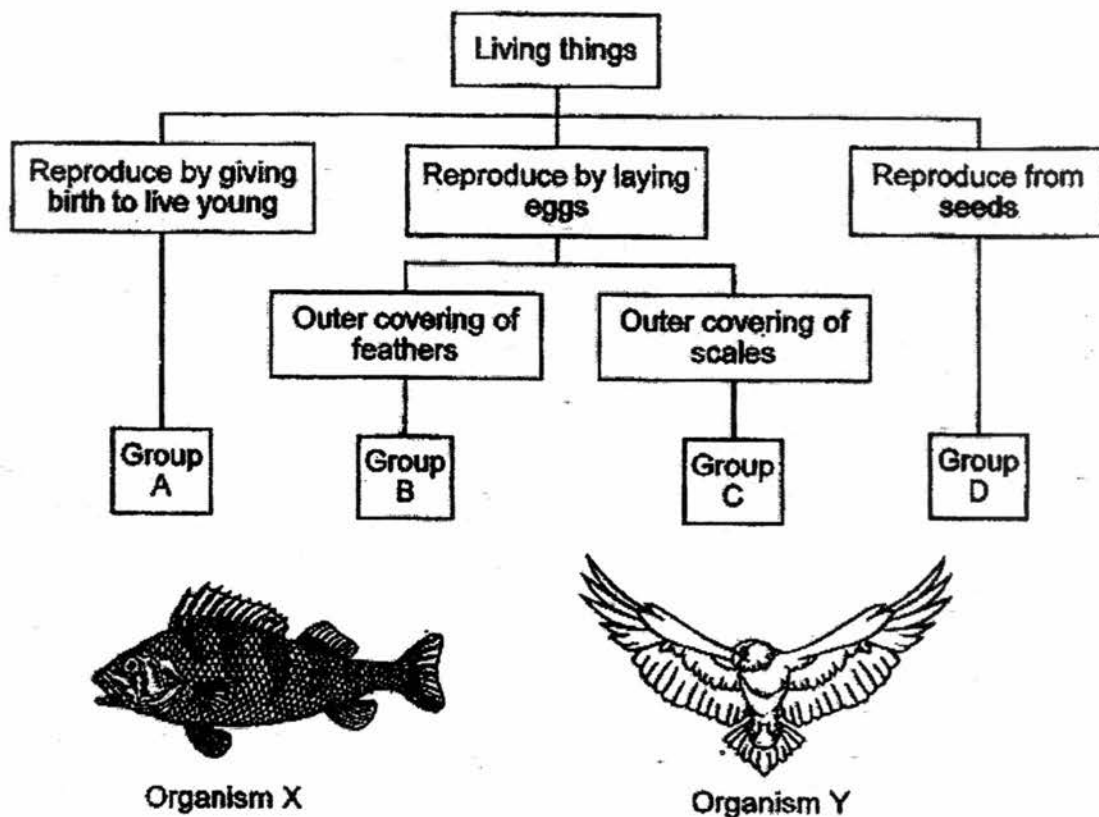
[3m]

(a) X: _____

(b) Y: _____

(c) Z: _____

30. Study the classification chart below.



(a) Which groups, A, B, C or D, do organisms X and Y belong to?

[2m]

Organism X: _____

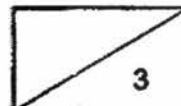
Organism Y: _____

The table below shows some organisms being classified into the above groups A, B, C and D.

Group A	Group B	Group C	Group D
elephant	penguin	snake	mango tree
dolphin	peacock	goldfish	bird's nest fern

(b) Which organism has been classified wrongly? Explain why.

[1m]

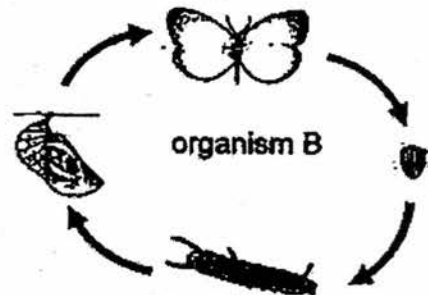
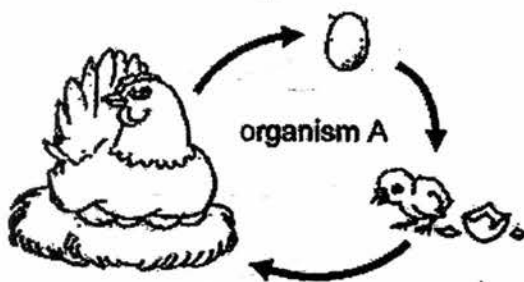


31. Classify the following objects according to the amount of light that can pass through them by completing the table below. [3m]

mirror	wooden table	tracing paper
clear glass window	aluminium foil	textbook

Allow most light to pass through	Allow some light to pass through	Allow no light to pass through

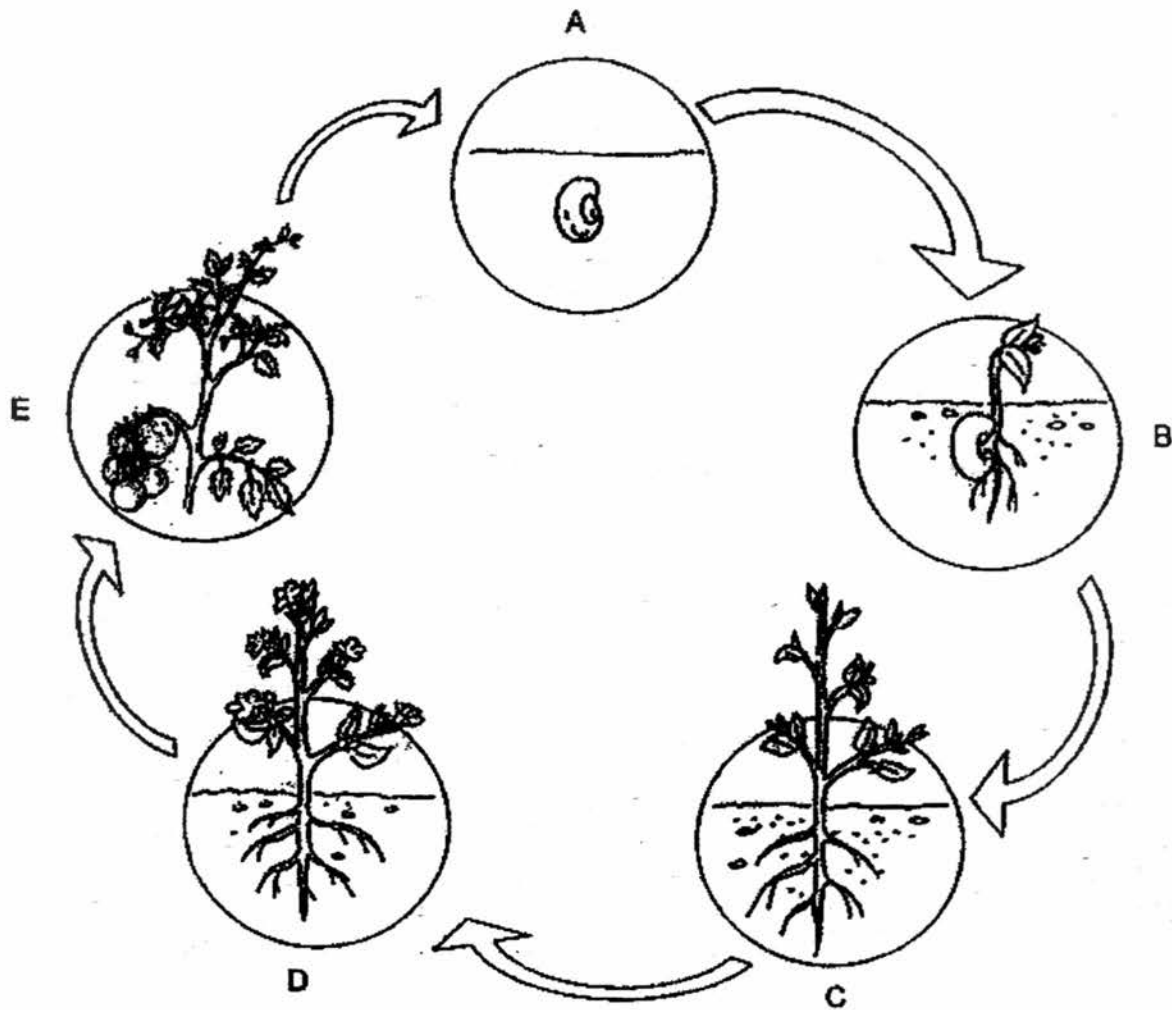
32. The diagrams below show the life cycles of organism A and organism B.



- (a) Based on the diagrams above, state one similarity between the life cycles of organisms A and B. [1m]

- (b) Based on the diagrams above, state one difference between the life cycles of organisms A and B. [1m]

33. David studied the life cycle of a plant as shown below.

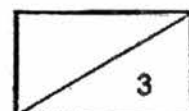


- (a) Based on the diagram above, at which stage(s), A, B, C, D or E, is the plant unable to reproduce? [1m]

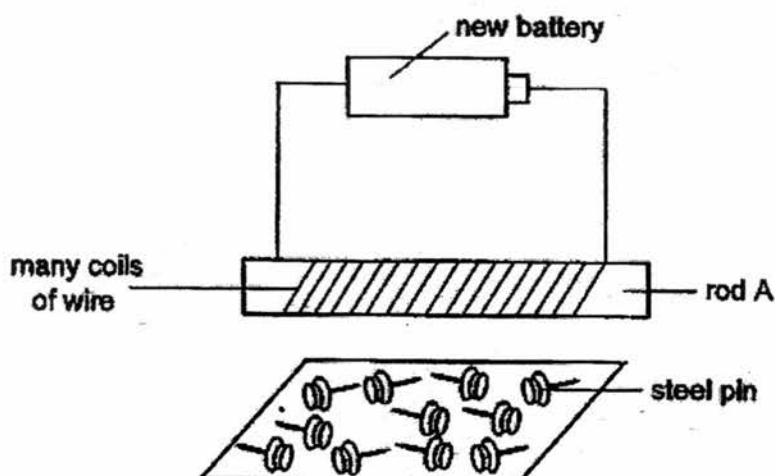
- (b) State two characteristics of the plant that helped David classify it as a flowering plant. [1m]

34. Write "Yes" or "No" in the boxes below to show whether the following objects have the stated properties. [3m]

Object	Properties of object	
	Has a definite shape	Has a definite volume
sand		
oil		
water		
air		
pencil		
ice cubes		



35. Hassan conducted an experiment using rod A in the set-up below. He brought it near a tray of steel pins. Rod A did not attract any steel pins.



Hassan replaced rod A with rod B in his set-up and hence the set-up could now attract 3 steel pins.

- (a) Describe the difference between rod A and rod B.

[1m]

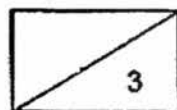
- (b) What can Hassan do to the set-up if he wants to attract more than 3 steel pins?

[1m]

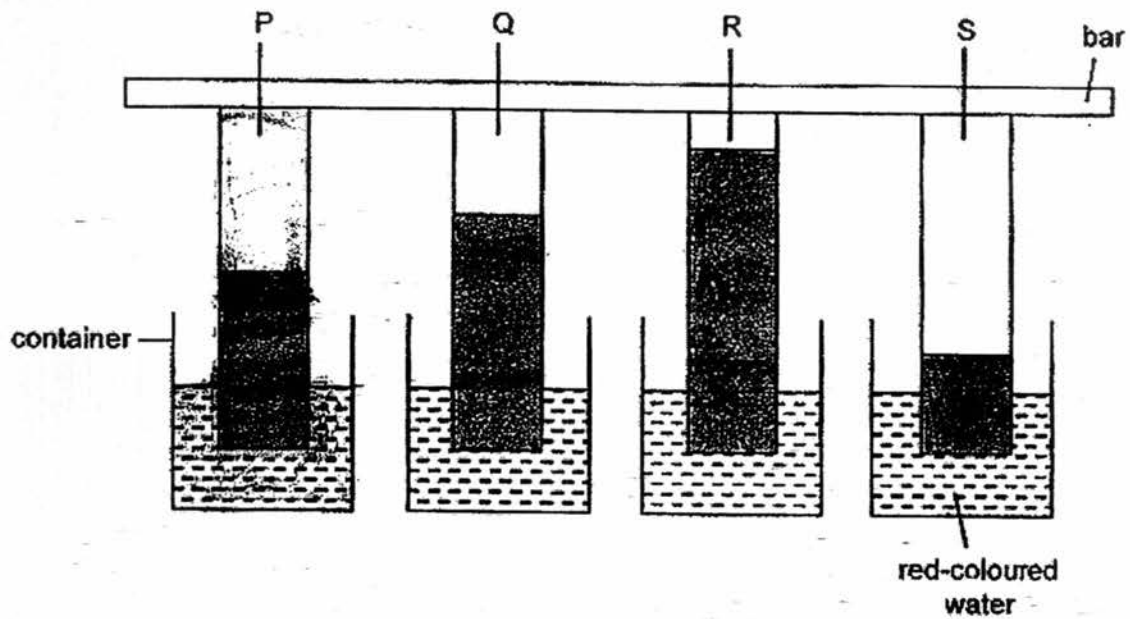
Hassan brought the set-up with rod B near a metal bar, J. The metal bar moved away.

- (c) Explain why the metal bar, J, moved away.

[1m]



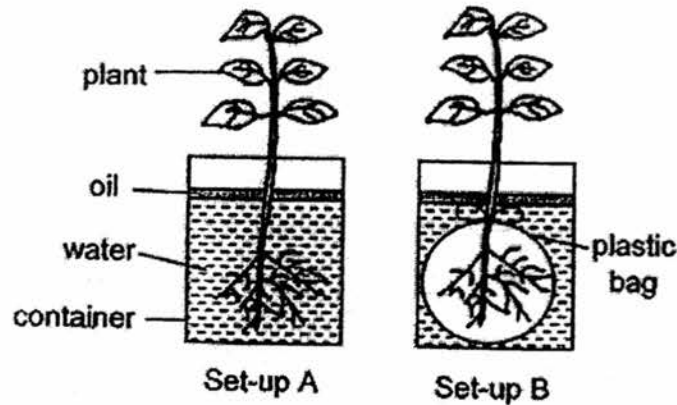
36. Diane wanted to find out how much water different materials could absorb. She hung 4 strips made of different materials, P, Q, R and S, over 4 identical containers of red-coloured water as shown below. Her observation after 10 minutes is shown below.



- (a) Based on *Diana's observation*, which material is most suitable for making amount?
Explain why. [1m]

- (b) Besides the amount of red-coloured water in each *beaker*, state 2 other variables which must be kept the same when conducting this experiment. [2m]

37. Ramesh placed the following set-ups with 2 plants in identical containers, each containing 200 ml of water as shown below, near a window. After 2 days, he measured the amount of water in each beaker.

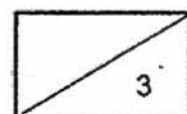


- (a) Complete the table below with the letters, A and B, to show the correct results of the experiment. [1m]

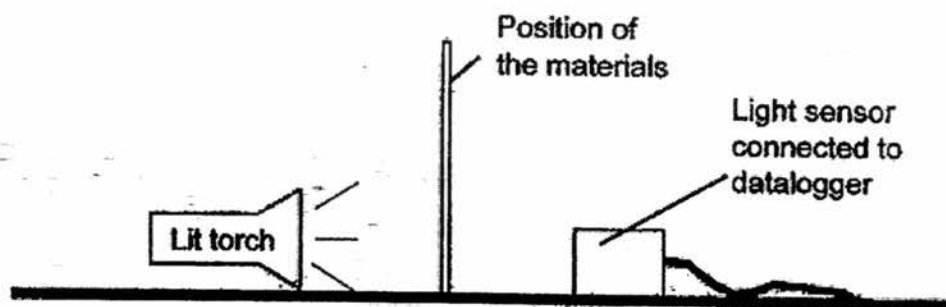
Amount of water left in each beaker (ml)	Set-up
200	
185	

- (b) Based on the above results, what conclusion can Ramesh make about the roots? [1m]

- (c) After 3 days, the plant in set-up B started turning yellow. What will happen to the plant in set-up B after 10 days? [1m]



38. Mr Wong carried out an experiment to investigate the amount of light passing through four different materials, A, B, C and D.



When no material was placed between the torch and light sensor, the amount of light detected was 1000 units. The table below shows the amount of light passing through the four materials.

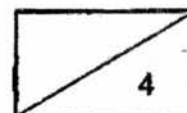
Material	Amount of light detected (units)
A	999
B	0
C	19
D	500

- (a) Arrange the materials, A, B, C and D, according to the amount of light that can pass through them in the boxes below. [1m]

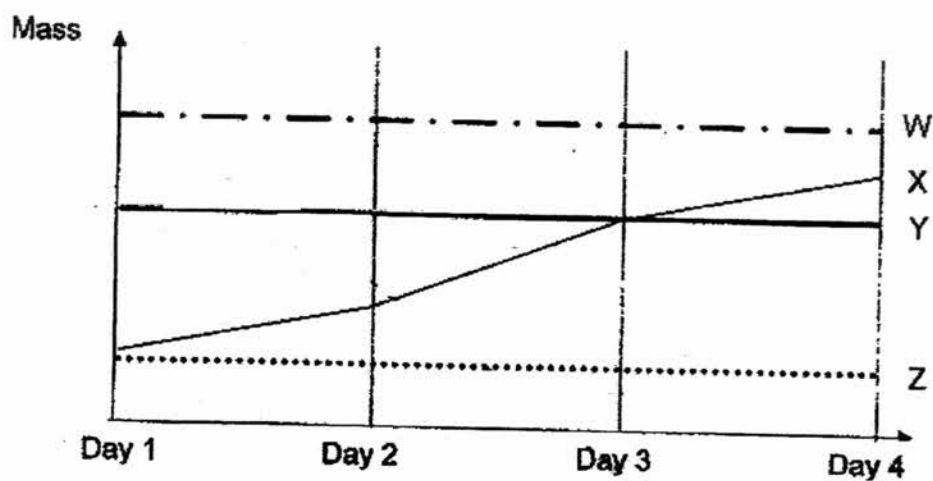
Allow most light to pass through
Allow least light to pass through

- (b) Mr Wong wants to build a shelter to provide shade for the spectators watching a soccer match. Based on the results, which one of the materials, A, B, C or D, will be most suitable to make the shelter? Explain your choice. [1m]

- (c) Other than the positions of the torch and light sensor, state another 2 variables which Mr Wong needs to ensure that they are kept constant for a fair test. [2m]

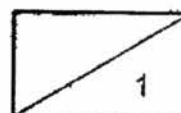


(d) The diagram below shows a graph of the mass of the different stages of a butterfly.

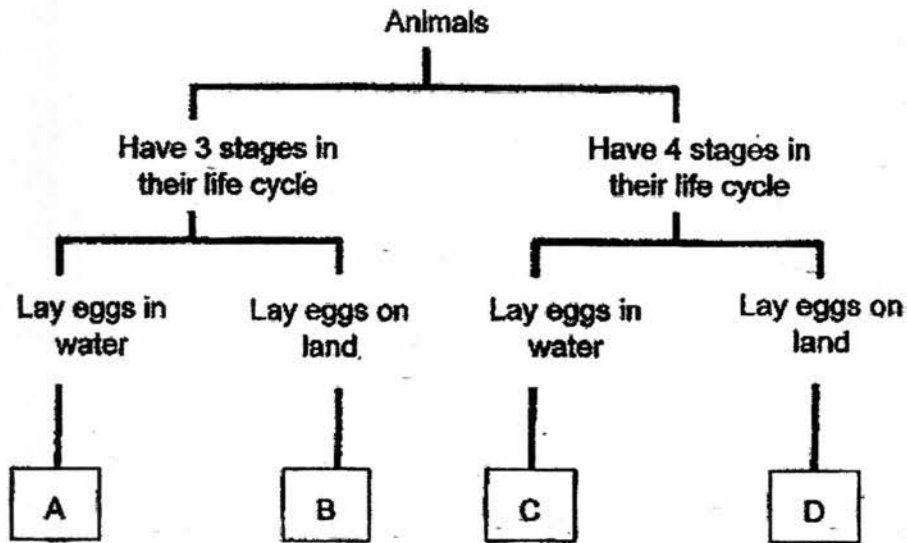


Which line in the graph, W, X, Y or Z, represents the mass of a butterfly larva?
Explain why.

[1m]



39. Study the classification chart below.



(a) State one similarity between Animals B and D.

[1m]

(b) State one difference between Animals B and D.

[1m]

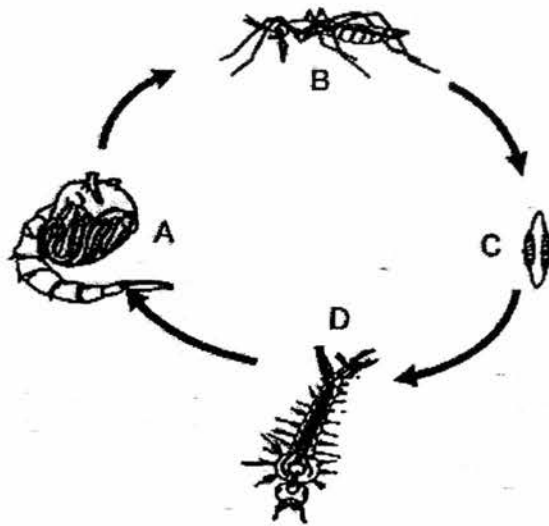
(c) Which of the letters, A, B, C or D, represent the following animals?

[1m]

(i) frog : _____

(ii) butterfly : _____

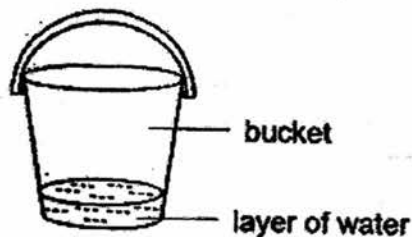
40. Study the life cycle below.



- (a) At which stage(s), A, B, C and/or D, of the life cycle above does the animal live in water? [1m]

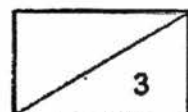
- (b) At which stage of the life cycle, A, B, C or D, would it be the most difficult to get rid of the mosquito? [1m]

- (c) Jess noticed that there was some water collected in the bucket left in her home. There were some young mosquitoes in the water.

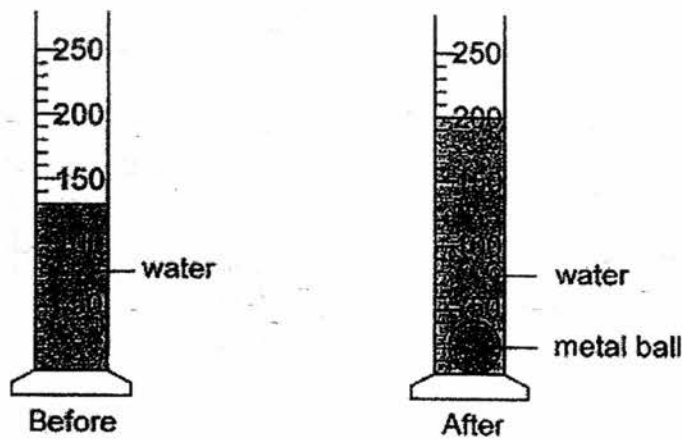


What can she do to get rid of them?

[1m]



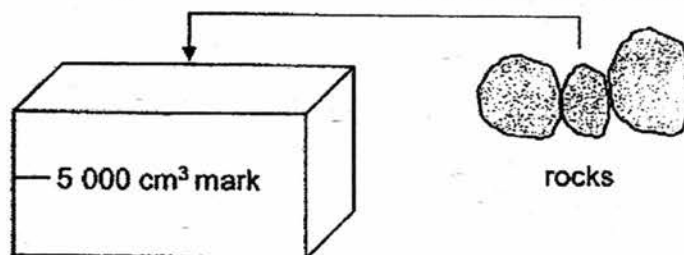
41. Roy poured some water into a 250 cm^3 measuring cylinder. He lowered a metal ball into the cylinder until it was fully submerged as shown below.



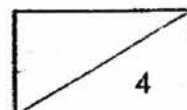
- (a) What is the volume of the metal ball ? [1m]

- (b) He repeated the experiment with a rubber ball that had the same shape and size as the metal ball. Predict if the water level would be higher, lower or remain the same as when the metal ball was in the water. Explain why. [1m]

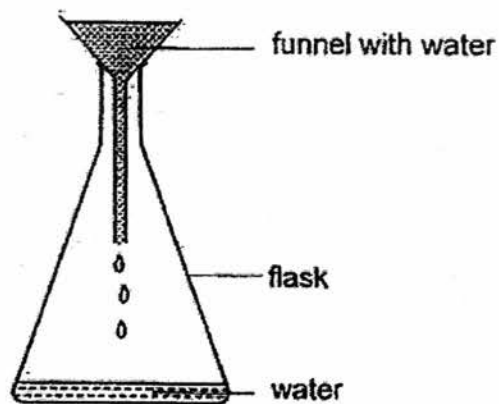
- (c) Roy has a fish tank. He had to pour $5\,000 \text{ cm}^3$ of water to reach the mark as shown below.



After adding some rocks in the fish tank, he noticed that he did not need to pour $5\,000 \text{ cm}^3$ of water to reach the mark. Why is this so? [2m]



42, Xander placed a funnel filled with water on top of a flask as shown below.



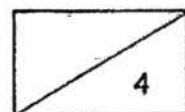
He observed that the water did not flow easily into the flask. After several seconds, the water stopped flowing completely.

- (a) Explain why the water in the funnel stopped flowing into the flask. [2m]

- (b) (i) What can Xander do to allow the water to flow into the flask easily? [1m]

- (ii) Explain your answer in (i). [1m]

End of Paper



EXAM PAPER 2017 (P4)

SCHOOL : Tao Nan

SUBJECT : Science

TERM : SA1

ORDER CALL :

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

29)a)X : Gullet

b)Y : Mouth

c)Z : Small intestine

30)a)Organisms X : Group C

Organisms Y : Group B

b)It is the bird's nest fern. The bird's nest fern reproduces from spores unlike the organisms in group D which reproduces from seeds.

31)Allow most light to pass through – clear glass window

Allow some light to pass through – tracing paper,

Allow no light to pass through – wooden table , aluminium foil , text book , mirror

32)a)Organisms A and B have the egg stage

b)Organisms A has a 3 stage life cycle while organisms B has a 4 stage life cycle.

33)a)It is A , B and C

b)It has a flowers and it bears fruits

34)sand – Yes , Yes

Oil – No , Yes

Water – No , Yes

Air – No , No

Pencil – Yes , Yes

Ice cubes – Yes , Yes

35)a)Rod A is made of non-magnetic material while rod B is made of magnetic material.

b)Hassan could add more batteries to the set-up

c)Metal bar J is a magnetic, Like poles of both magnet are facing each other, hence they repel.

36)a)Material R. It absorbed the most red-coloured water. It cloud dry the person using the towel most.

b)Size of strip. Length of strip in red-coloured water

37)a)200 – B

185 – A

b)Roots help the plant to take in water

c)The plant in set-up B will die

38)a)A – D – C – B

b)B. It does not allow light to pass through

c)The thickness of the materials must be the same. The place where the experiment was carried out must be the same.

39)a)They lay eggs on land

b)Animal B has a 3 stage life cycle while animal D has a 4 stage life cycle.

c)i)frog – A

ii)butterfly – D

40)a)It is C , D and A

b)It is B

c)She could cover the water with oil

41)a)It is 70cm³

b)The water level would remain the same. Even though the metal ball may be heavier than the rubber ball but their volume is the same so the water level will still be the same.

c)Rocks take up space.

42)a)There is air in the flask. Even though air can be compressed, it can only be compressed to a certain extent.

b)Lift up the funnel

c)Air in the flask can escape and there is space for the water to flow in.

