

**MID-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 : 9 May 2017

This booklet consists of 16 printed pages including this page.

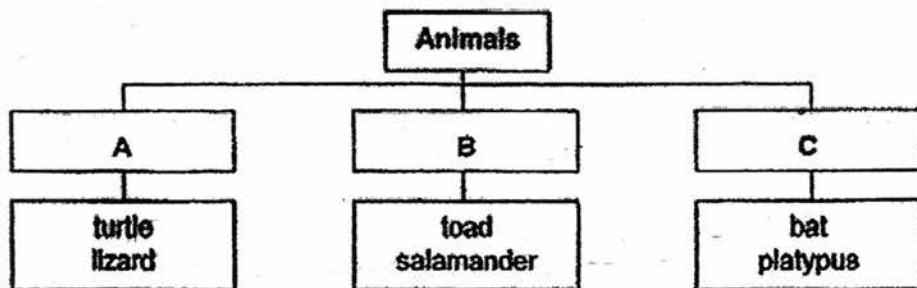
For each question from 1 to 28, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval on the Optical Answer Sheet (OAS).

[56 marks]

- 1 Jamie is playing with her pet dog in her garden. Which of the following does not show that her dog is a living thing?

- (1) The dog drinks milk.
- (2) The dog wags its tail.
- (3) The dog has four legs.
- (4) The dog barks at strangers.

- 2 Study the classification diagram below carefully.



What are the most suitable headings for each group of animals?

	A	B	C
(1)	Reptiles	Amphibians	Birds
(2)	Amphibians	Reptiles	Birds
(3)	Reptiles	Amphibians	Mammals
(4)	Reptiles	Fish	Mammals

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3 Which one of the following animals below is not an insect?

(1)



(2)



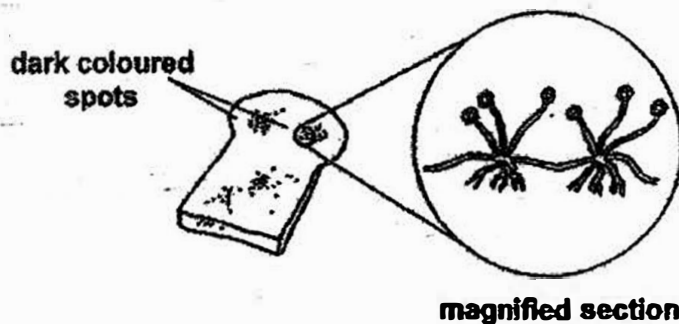
(3)



(4)



4 Ali left a piece of bread on a table in the kitchen. After a week, he observed that some dark coloured spots had formed on the bread.



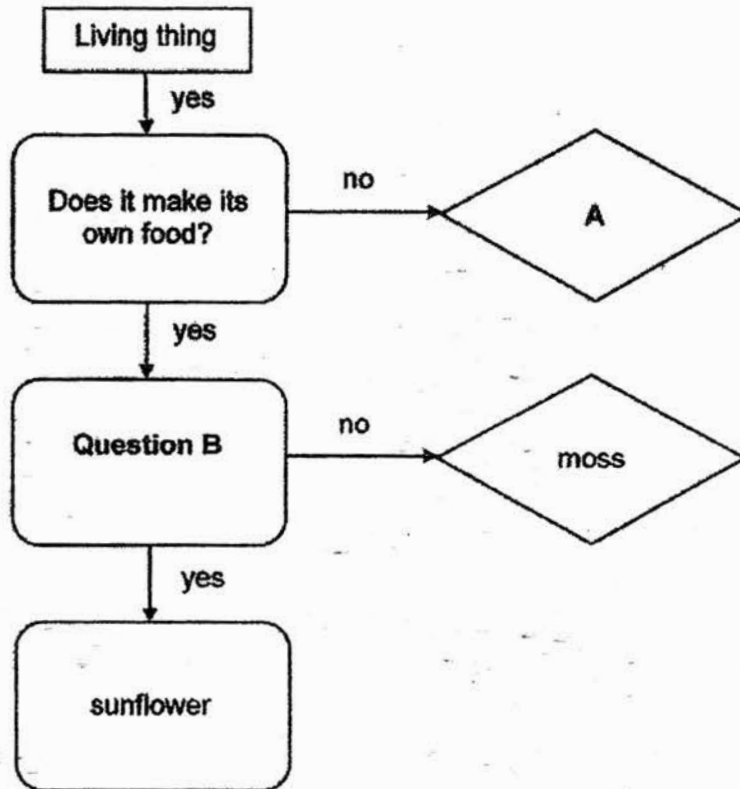
Which statement(s) is/are true about the dark-coloured spots?

- A They need light to make food.
- B They reproduce by producing spores.
- C They can be harmful to human beings.

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

(Go on to the next page)

5 Study the chart below.



Which one of the following is correct?

	A	Question B
(1)	mushroom	Does it have leaves?
(2)	toadstool	Does it produce seeds?
(3)	fern	Does it have fruits?
(4)	grass	Does it have a strong stem?

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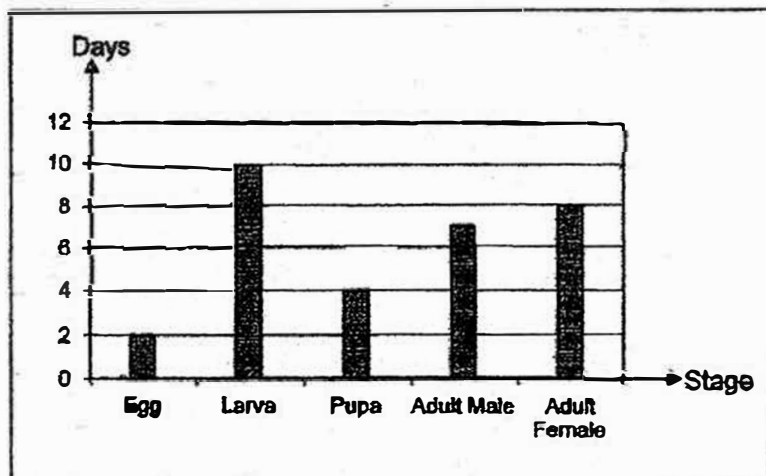
6 The table below shows the characteristics of animals A and B.

	Animal	
Characteristics	A	B
Has a pupal stage	✓	X
Gives birth to young alive	X	X
Has wings in adult stage	✓	✓
Moults several times	✓	X

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

- (1) Both animals can fly when they were young.
- (2) Animal A is a cockroach and Animal B is a butterfly.
- (3) Animal A gives birth to young alive while Animal B lays eggs.
- (4) Animal A has 4 stages in its life cycle while Animal B has 3 stages in its life cycle.

The graph below shows the number of days for each stage of the life cycle of an insect.



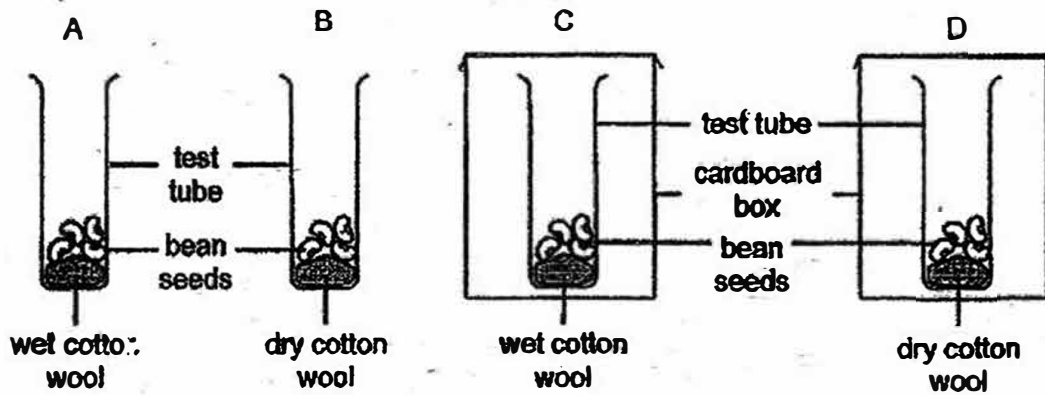
How many days would the insect take to become a male adult after the egg is hatched?

- (1) 14 days
- (2) 16 days
- (3) 21 days
- (4) 23 days

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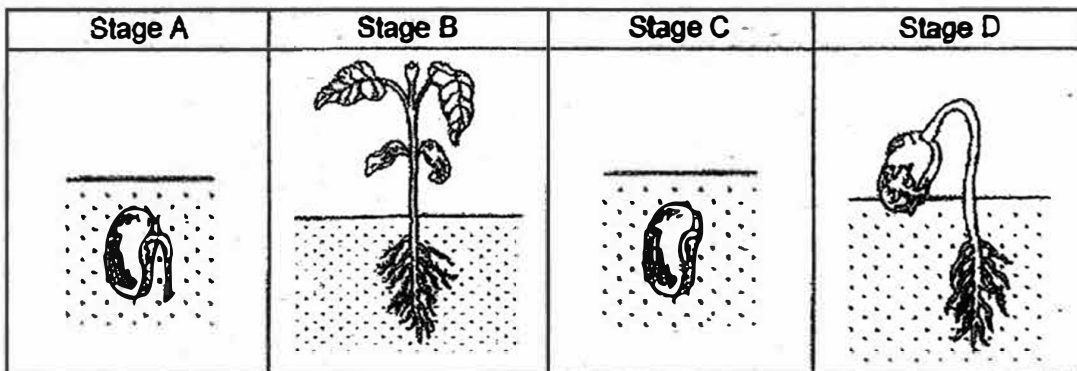
6

- 8 Four set-ups as shown below were placed in a room near the window. Each test tube contained four green bean seeds on a piece of cotton wool.



In which of the set-ups will the bean seeds not germinate?

- (1) B and D
 - (2) C and D
 - (3) A, B and C
 - (4) B, C and D
- 9 The following diagram shows the different stages in which a seed goes through during germination.

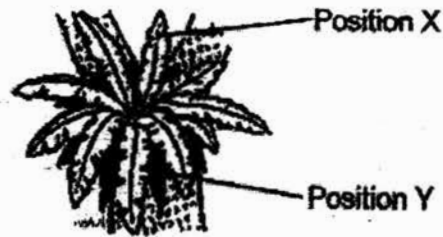


Which of the following shows the correct order when the seed germinates?

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

(Go on to the next page)

- 10 The diagram below shows a bird's nest fern growing on a tall tree.



The leaves at position X are green but those at the lower position Y have turned brownish. This is because the leaves at position Y receive less _____.

- (1) food
- (2) water
- (3) sunlight
- (4) mineral salts

- 11 Mrs Lim harvested some carrots from her garden as shown below.



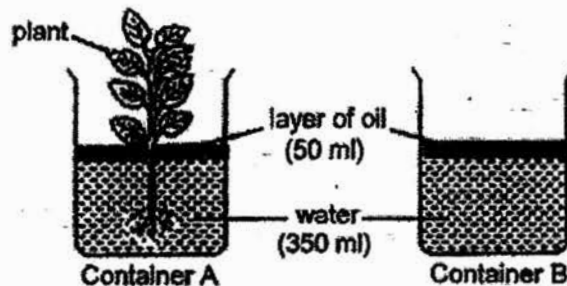
How is part Q useful to the carrot plant?

- A It produces food for the plant.
- B It stores food made by the leaves.
- C It holds the plant firmly to the ground.
- D It absorbs water and mineral salts from the soil.

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

(Go on to the next page)

- 12 Sue poured the same amount of water into two identical containers, A and B. She placed a plant into container A while container B was set up as a control as shown in the diagram below. Both containers were left on the table near the window for three days.



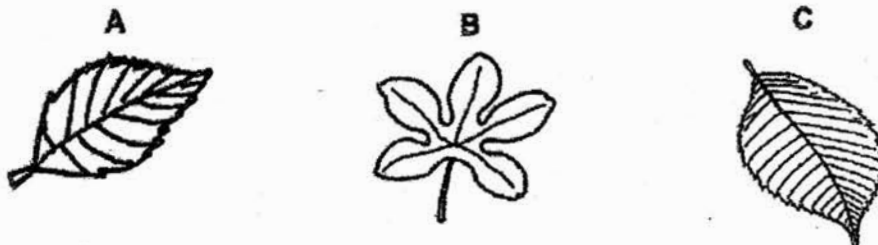
Which one of the following observations is correct at the end of three days?

- (1) The water level in both container A and B remained the same.
- (2) The water level in both container A and B is lower than the first day.
- (3) The water level in container A is lower than the water level in container B.
- (4) The water level in container B is lower than the water level in container A.

- 13 Study the two leaves shown below.



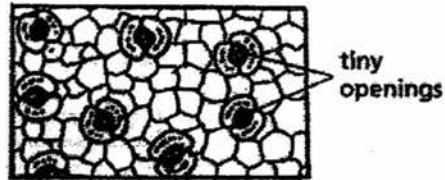
Which of the three leaves below are more likely to be classified in the same group as the two leaves above?



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

(Go on to the next page)

- 14 The diagram below shows an enlarged view of the underside of a leaf.



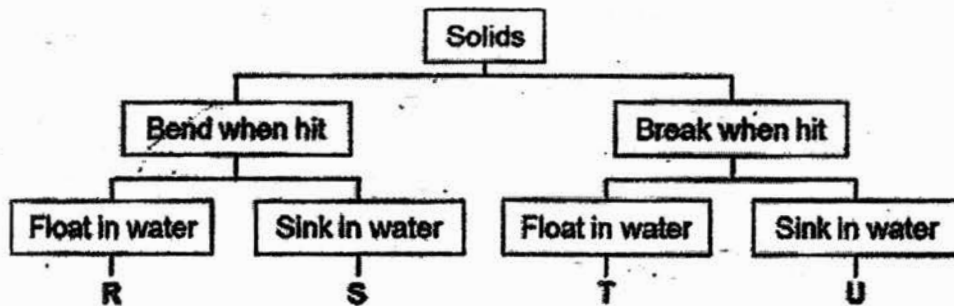
Which of the following are the functions of the tiny openings?

- A To take in gas
- B To take in light
- C To take in water
- D To give out gas

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

(Go on to the next page)

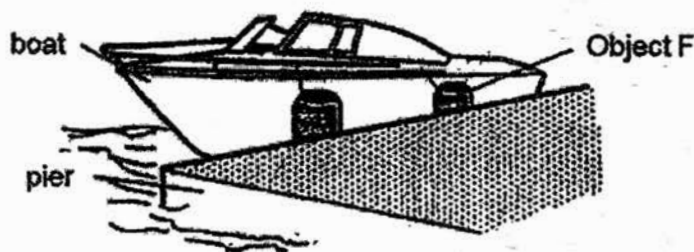
15 Study the classification chart below.



Where should the ice cube, claypot and steel nail be placed in the classification chart?

	ice cube	claypot	steel nail
(1)	T	U	S
(2)	R	T	U
(3)	U	R	S
(4)	S	R	T

- 16 Object F is hung at the side of a boat to prevent damage from the pier to the boat. Object F is made from a material that can be compressed when the boat moves towards the pier.

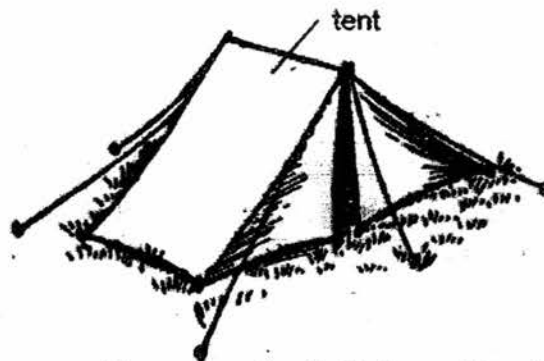


What are the properties of the material used to make object F?

- (1) stiff and strong
- (2) stiff and smooth
- (3) flexible and strong
- (4) flexible and smooth

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- 17 The diagram below shows a tent.

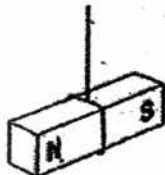


Which of the following properties are most suitable for making the tent?

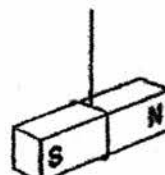
	Property of material	
	Waterproof	Flexible
(1)	no	no
(2)	no	yes
(3)	yes	no
(4)	yes	yes

- 18 A bar magnet is hung by a thin thread and left to spin near a compass. Which of the following shows the position of the bar magnet when it stops spinning?

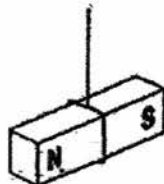
(1)



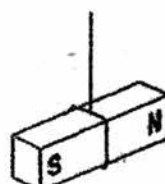
(2)



(3)

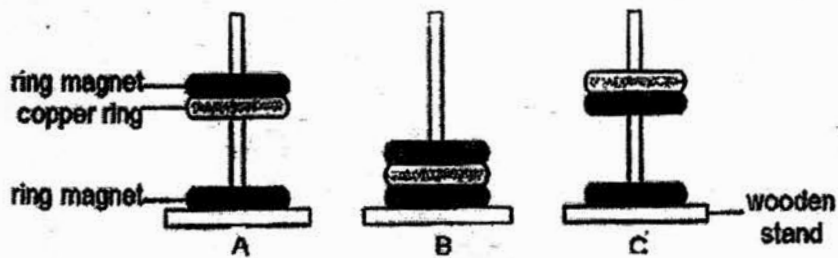


(4)



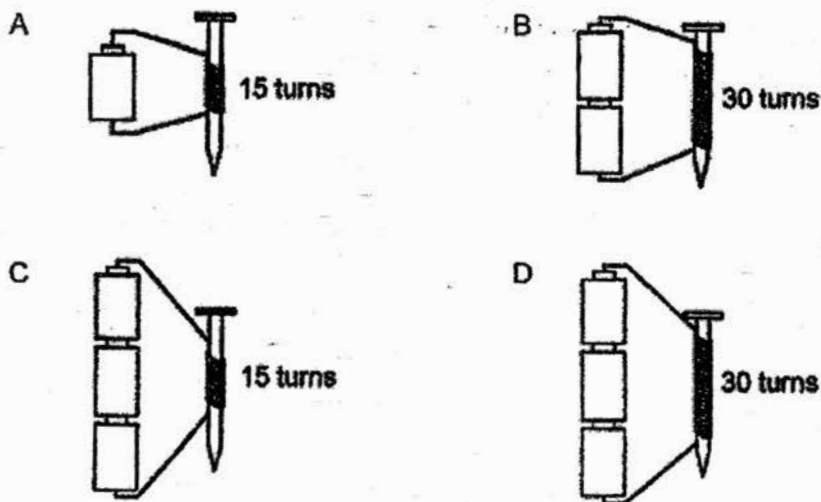
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- 19 Two ring magnets and a copper ring are slotted in a wooden stand.



Which of the following will be observed?

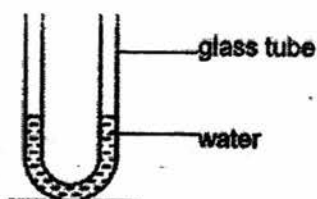
- (1) B only
 - (2) A and B only
 - (3) A and C only
 - (4) B and C only
- 20 Which two set-ups can be used to find out if the number of batteries affects the strength of an electromagnet?



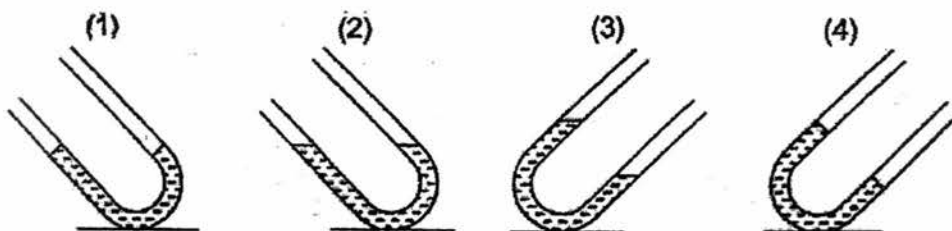
- (1) A and B only
- (2) A and D only
- (3) B and C only
- (4) B and D only

(Go on to the next page)

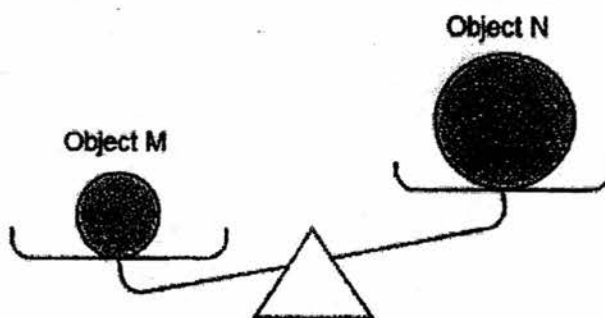
- 21 The diagram below shows a U-shaped glass tube containing some water.



Which one of the following diagrams shows what the water level would look like when the glass tube is tilted?



- 22 Two objects, M and N, are placed on a lever balance as shown below.



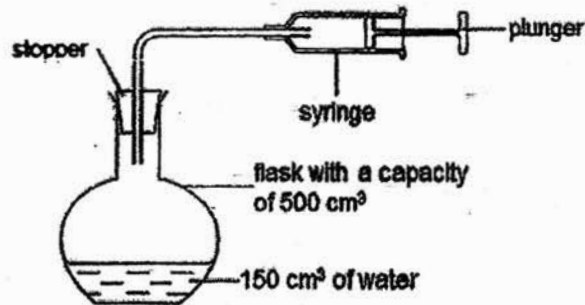
Which of the following statements are true?

- A Object M has a smaller mass than object N.
- B Object N has a smaller mass than object M.
- C Object M has a greater volume than object N.
- D Object N has a greater volume than object M.

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

(Go on to the next page)

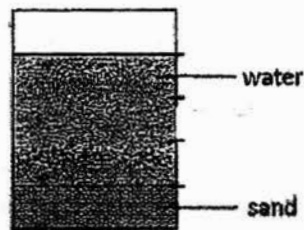
23 A pump is connected to a flask which contains 150 cm^3 of water as shown.



500 cm^3 of air is pumped into the flask. What would be the volume of air in the flask?

- (1) 150 cm^3 (2) 350 cm^3
 (3) 500 cm^3 (4) 650 cm^3

24 Mr Li planned the set-up of the aquarium at home. His drawing is as shown below.

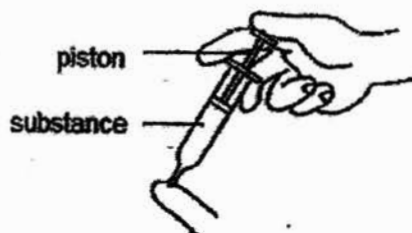


Which one of the following correctly shows the amount of water and sand used to prepare this aquarium?

- (1) (2)
- (3) (4)

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- 25 Two identical syringes are filled with unknown substances M and N. A finger is then used to cover each syringe and the piston is pushed as shown in the diagram below.



The distance moved by the piston is recorded in the table below.

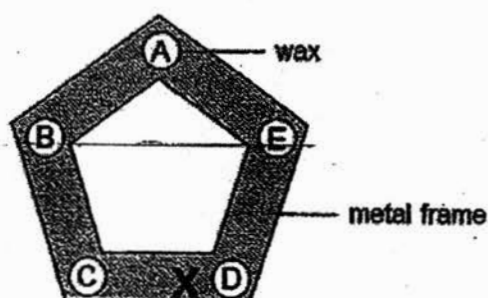
Distance moved by piston for material (cm)	
M	N
0	0.7

Which of the following best represents substances M and N?

	M	N
(1)	air	salt
(2)	air	water
(3)	salt	air
(4)	water	salt

- 26 Five drops of wax were dropped at the corners of a pentagon metal frame as shown in the diagram below. The drops of wax were then left to cool and solidify.

Subsequently, the frame is heated with a Bunsen burner at position X.

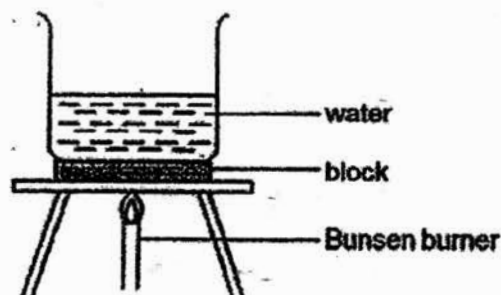


Which of the following shows the correct order of the melting wax, starting from the one which melts first?

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

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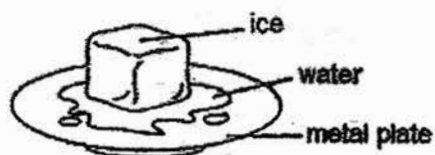
- 27 Four blocks made of different material, W, X, Y and Z, were placed under a beaker of water. The set-up was heated over a Bunsen burner as shown below.



The time taken for the water to boil is recorded in the table below. Which block is made up of the best conductor of heat?

	Block	Time taken for water to boil (min)
(1)	W	15
(2)	X	20
(3)	Y	25
(4)	Z	21

- 28 A block of ice is left to melt on a metal plate as shown in the diagram below.



Based on the above experiment, which of the following statement(s) is/are true?

- A The metal plate is losing heat to the block of ice.
- B The temperature of the block of ice is decreasing.
- C The water is gaining heat from the surrounding.
- D The ice is losing heat to the metal plate and the surrounding.

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

End of Booklet A

**MID-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 : 9 May 2017

Booklet A	56
Booklet B1	16
Booklet B2	18
Total	90
Parent's Signature	

This booklet consists of 7 printed pages including this page.

For questions 29 to 34, 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.

[16 marks]

29 The pictures below show what happens when mammal X faces danger.

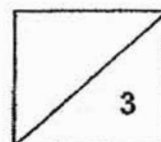


rolls up
when it
faces
danger

(a) Which characteristic of living things is shown by the mammal X? [1]

(b) Besides moving about to escape from danger, give another reason why mammal X needs to move about. [1]

(c) How does mammal X reproduce? [1]



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30 The diagrams below show animal C and animal D.



Animal C



Animal D

(a) Which stage of the life cycle is animal C?

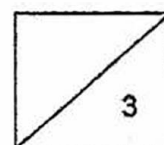
[1]

(b) Apart from their physical shape and size, state two similarities between life cycles of animal C and animal D.

[2]

(i)

(ii)

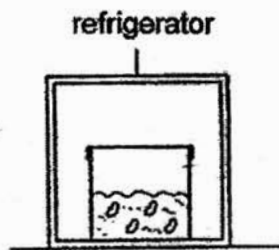


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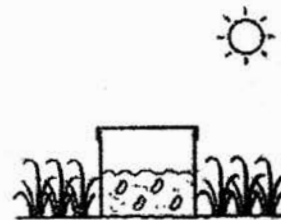
- 31 Mary set up three cardboard boxes with equal amounts of soil and placed equal number of beans in them as shown below. She watered each pot of soil with equal amounts of water daily. All the three boxes were covered with cardboard lids.



Set-up X



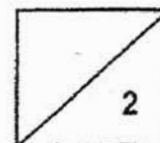
Set-up Y



Set-up Z

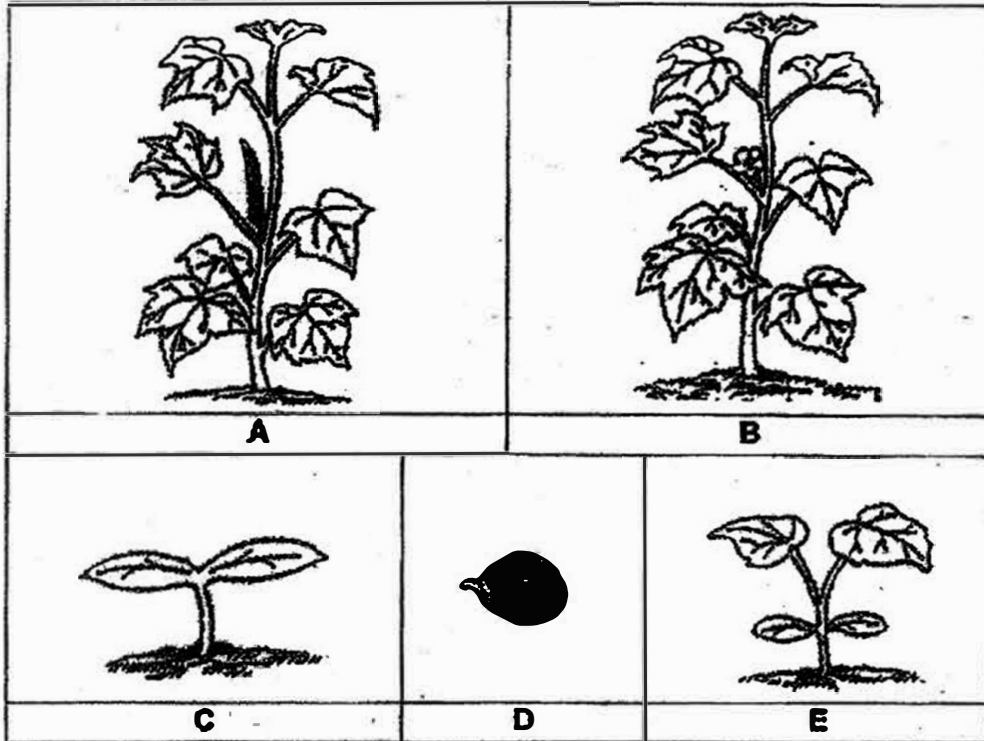
- (a) Will the beans in all the set-ups germinate? Explain your answer. [1]

- (b) How does covering the boxes with lids in all the set-ups ensure a fair experiment? [1]



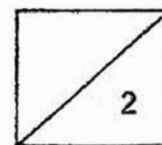
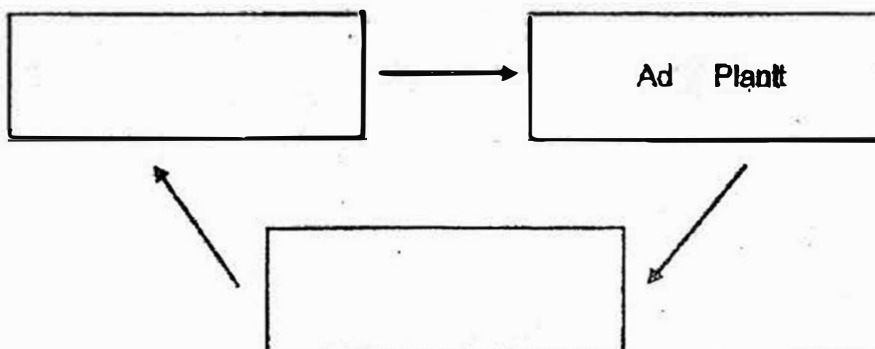
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- 32 The diagrams below show the various stages of the growth of the lady's finger plant.



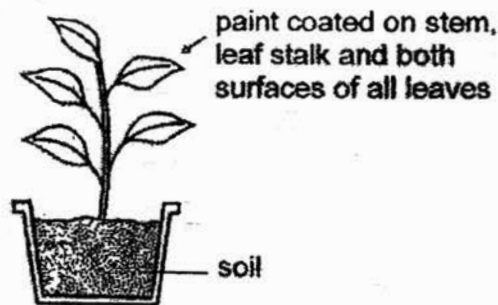
- (a) At which stages, A, B, C, D and E, can the plant make its own food? [1]

- (b) Name the stages and complete the life-cycle of the lady's finger plant below. [1]



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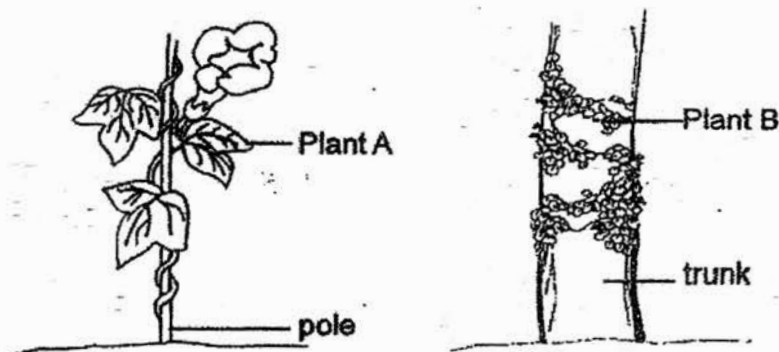
- 33 Susie coated a layer of paint on the stem, leaf stalks and both surfaces of the leaves of the plant as shown below. The plant was placed under the sun and watered daily. After a week, the plant died.



- (a) Why did the plant die? Give two reasons for your answer.

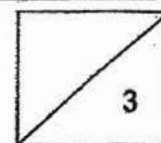
[2]

The diagram below shows two plants, A and B, growing in a park.



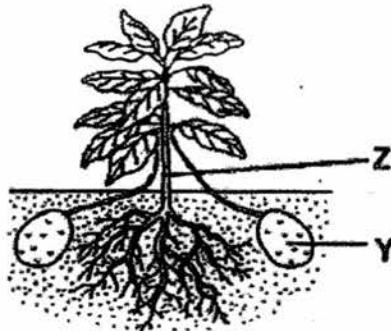
- (b) What is a similarity between the stems of plants A and B? Explain how they help both plants to survive better.

[1]



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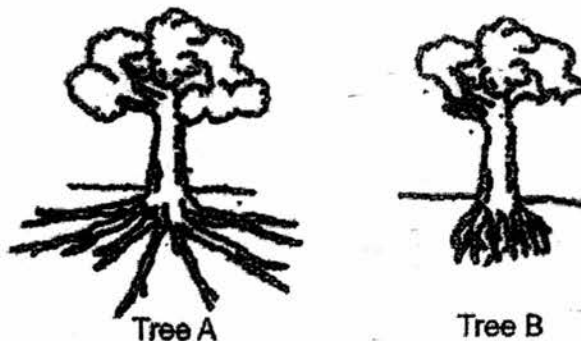
34 The diagram below shows a potato plant.



(a) Name the plant part labelled Y. [1]

(b) What is the function of part Z? [1]

The diagram below shows two trees, A and B



(c) Which tree, A or B, is less likely to be uprooted during a storm? Give a reason for your answer. [1]

**MID-YEAR EXAMINATION 2017
PRIMARY 4
SCIENCE**

BOOKLET B2

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. _____

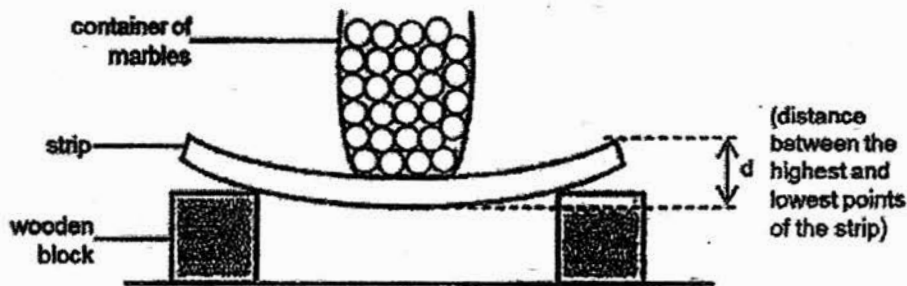
Date : 9 May 2017

Booklet B2	18
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This booklet consists of 7 printed pages including this page.

For questions 35 to 40, 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.
[18 marks]

- 35 Yenni set up an experiment as shown below to compare a property of three strips, X, Y and Z, which are made of different materials.

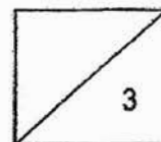


On each strip, she placed a container of 50 identical marbles and measured the distance d . The results are shown below.

strip	X	Y	Z
d (cm)	3	1	5

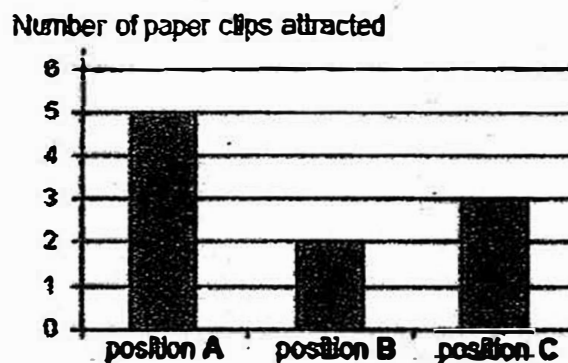
- (a) Which of the strips is the most flexible? Explain your answer in (a) based on the results of the experiment. [2]

- (b) What are the two things about the strips that were kept the same to ensure a fair test? [1]

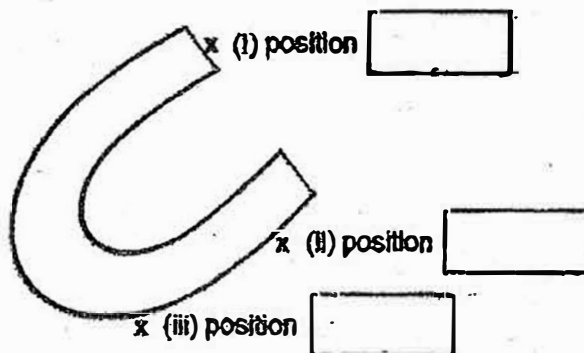


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- 36 Some paper clips are placed near a horseshoe magnet at different positions, A, B and C. The results are shown in the bar chart below.

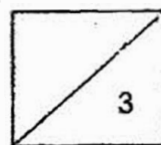


- (a) Based on the results, label positions A, B and C in the diagram below. [1]



- (b) What does this experiment show about the magnetic strength of a magnet? [1]

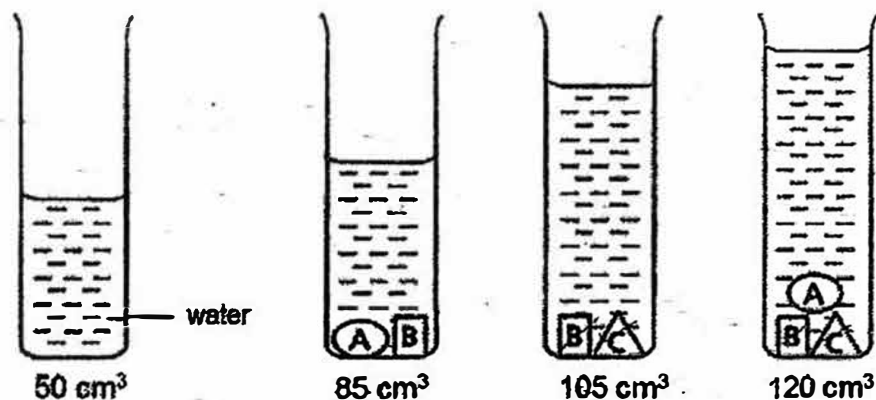
- (c) Explain your answer in (b) based on the results obtained. [1]



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4

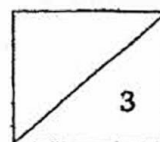
- 37 A container was filled with 50 cm^3 of water. Objects A, B and C were put into the container and the water level rose as shown below.



- (a) Find the volume of objects A and B. Write your answer in the table below. [2]

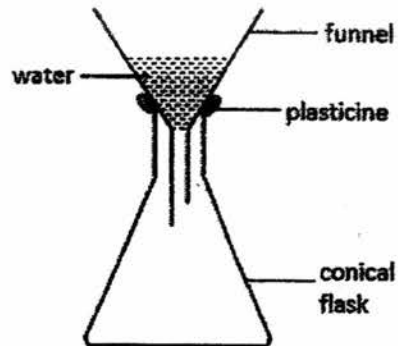
Object	Volume (cm^3)
A	
B	

- (b) Based on the above observation, what could be concluded about the property of solids and liquids? [1]



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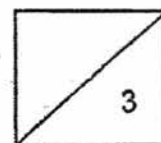
- 38 Lynn placed a funnel on a conical flask and held it in place with plasticine. She poured some water into the funnel as shown below.



- (a) It is observed that the water flowed slowly into the conical flask. Give a reason for this observation. [1]

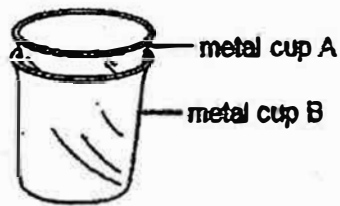
- (b) Without breaking any of the apparatus, what can Lynn do to make the water flow quickly into the conical flask? [1]

- (c) Explain how the method stated in (b) allows the water to flow quickly into the conical flask? [1]



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- 39 Tom found two metal cups stuck together as shown in the diagram below.

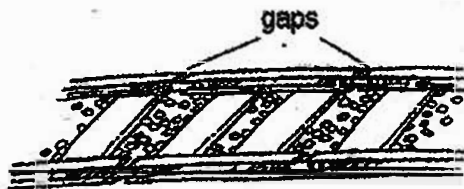


He was given some ice cubes and a basin of hot water to separate the metal cups.

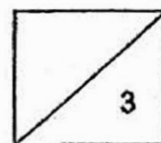
- (a) What should Tom do with the ice cubes? Explain your answer. [1]

- (b) What should Tom do with the basin of hot water? Explain your answer. [1]

- (c) The diagram below shows part of a railway track. Gaps are observed between the tracks.

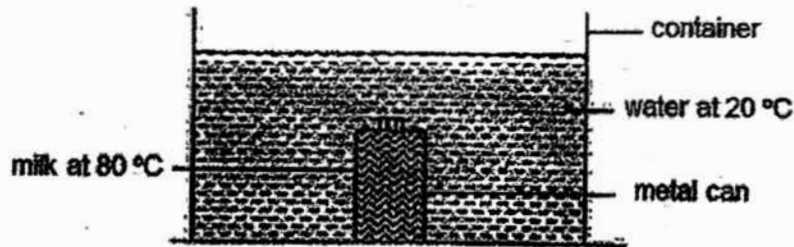


What would happen to the railway track on a hot day if it was a continuous track with no gap in between? Give a reason for your answer. [1]

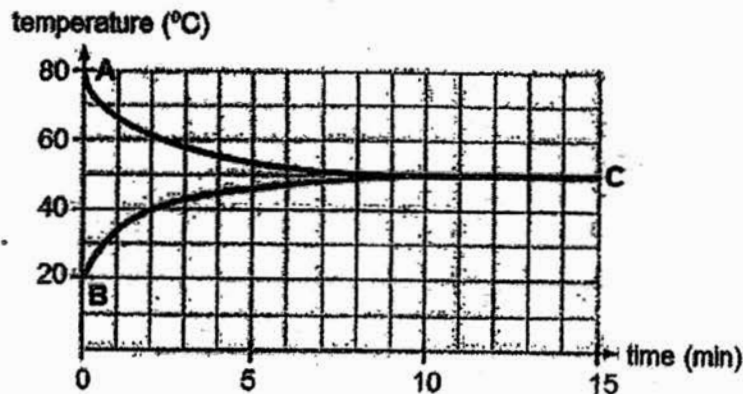


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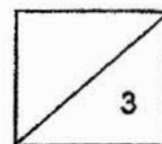
- 40 Some hot milk was poured into a metal can before it was sealed. It was then put into a container of cold water as shown in the diagram below.



The temperature of the cold water and hot milk were measured at regular intervals for 15 minutes and the graph is drawn in the diagram below.



- (a) What was the temperature of the water after the 10 minute? [1]
- _____
- (b) What does line AC in the graph represent? [1]
- _____
- (c) If the metal can is changed to a glass bottle with the same volume and shape, will it take a longer or shorter time for temperature of milk to increase or decrease? Explain your answer. [1]
- _____
- _____
- _____



EXAM PAPER 2017 (P4)

SCHOOL : MGS

SUBJECT : Science

TERM : SA1

ORDER CALL :

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

29)a)Mammal X respond to changes around it.

b)Living things need food to survive.Hence it has to look for food and needs to move around.

c)Mammal X gives birth to its young alive.

30)a)Larva stage

b)i)Both of them are at the larva stage now.

ii)Both of them have 4-stage life cycle.

31)a)No, not all the beans in all the set-ups would germinate. Seeds need warmth, oxygen and water to germinate. Although sufficient

water is given, warmth is not given to the seeds in box Y. Air is also not given to all the boxes Y, X and Z. Hence the boxes would not be able to germinate.

b) It is to ensure that the beans in each set-up will not receive any sunlight to have a fair test.

32) a) C, E, B and A

b) young plant – Adult Plant – seed

33) a) The plant did not have roots to absorb mineral salts and water. If both sides of the leaves are coated in paint, there would not allow carbon dioxide to enter and oxygen to exit and plant also can't obtain sunlight to make its own food causing it to die after a week.

b) Both of them have weak stem and climp on a pole or a tree trunk to reach for more sunlight for the leaves of the plant to make food.

34) a) Y is a stem

b) Part Z helps to support the plant leaves and branches to help the leaves to reach for more sunlight to make food.

c) Tree A. Roots of the tree hold the plant firmly to the ground. Hence Tree A has compared to B. Roots of tree A would hold A more firmly to the ground than B. During thunderstorm tree A would be less likely to be uprooted compared to B.

35) a) Strip Z. It has the greatest distance between the highest and lowest point of the strip so that it is able to bend the most without breaking.

b) The length and the thickness of strips were kept the same to ensure a fair experiment.

36)a)i)A

ii)C

iii)B

b)The magnetic strength of the magnet is strongest.

c)A that was the pole of a magnet attracted the most paper clip compared to C,who was closest o the poles,and B that was furthest from the poles.

37)a)Object A – 15cm³

Object B – 20cm³

b)Solid and liquid has definite volume.

38)a)There is no hole in or gap for air in the conical flask to escape.The flow of water is slow as the water in the flask occupies space.Air occupies space and can be compressed.

b)She can lift the funnel slightly above.The conical flask and remove the plasticine.This would make the flow of water faster than before.

c)Air occupies space in the conical flask.Hence when the Plasticine is removed and the flask is raised above the flask,air would be able to escape and the water would be able o occupy the same space the air once occupied.This would help the flow of water to flow quickly into the conical flask.

39)a)Put ice into the metal cup A.Metal cup A will lose heat and contract.

b)Tom should put the metal cup B in the basin of hot water.That way,metal cup can gain heat and exoand.Hence the 2 cups would loosen and Tom would be able o separate them.

c)The railway track would buckle .Because there is no space for expansion.

40)a)50.C

b)It shows the decreasing temperature of the hot milk.

c)It will take he milk in the glass to loss heat slower as it is a poor conductor of heat.