MAHA BODHI SCHOOL

2018 SEMESTRAL ASSESSMENT 1

PRIMARY FOUR SCIENCE

(BOOKLET A)

Name : _____ ( )

Class : Primary 4 _____

Date : 8 May 2018

Total Duration for Booklets A and B: 1 h 30 min

INSTRUCTIONS TO CANDIDATES:

1. Do not turn over this page until you are told to do so.
2. Follow all instructions carefully.
3. Answer all questions.
4. Shade your answers in the Optical Mark Sheet (OMS) provided.

This booklet consists of 14 printed pages.

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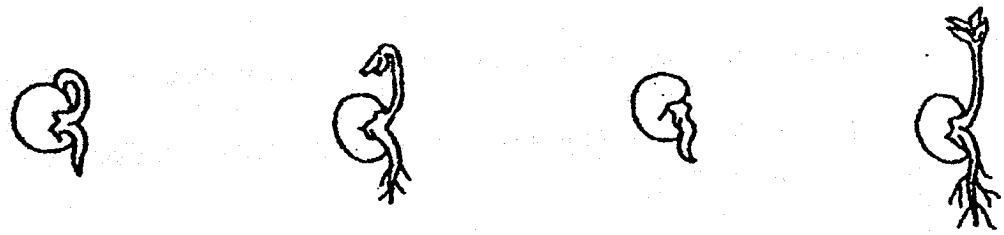
BOOKLET A : [24 x 2 marks = 48 marks]

For each question from 1 to 24, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). **Shade your answer on the Optical Answer Sheet.**

1. The leaves and branches of a tree are spread out so that the tree can receive as much _____ as possible.

   (1) air
   (2) food
   (3) water
   (4) sunlight

2. The diagram below shows the different stages A, B, C and D of a green bean plant.



A B C D

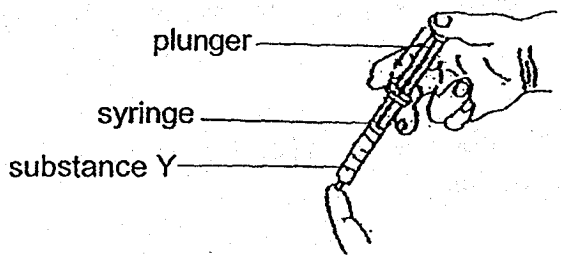
Which of the following correctly shows the growth of a green bean plant when its seed is planted?

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

3. Which of the following statements about life cycle of plants is true?

   (1) All plants reproduce from seeds.
   (2) All plants reproduce from spores.
   (3) All plants have 4 stages in their life cycle.
   (4) All plants have the same life cycle as their parent plant.

4. James filled a syringe with substance Y. He covered the opening with his finger. He then tried to push plunger in and he observed that he could not do so.



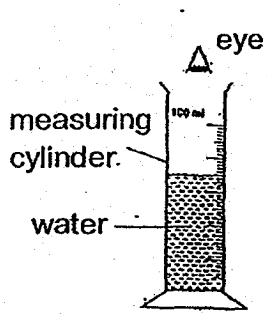
What conclusion can he make about substance Y based on his observation?

(1) It is a gas.
(2) It has mass.
(3) It has a definite shape.
(4) It has a definite volume.

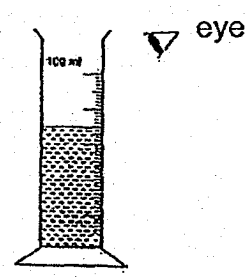
5. Jane wanted to measure the volume of water in a measuring cylinder.

Which of the following diagrams correctly shows where and how she should position her eye?

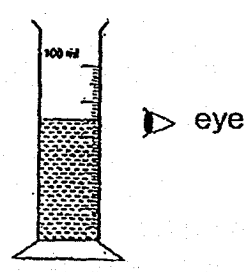
(1)



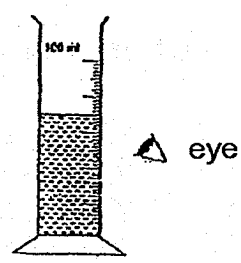
(2)



(3)



(4)

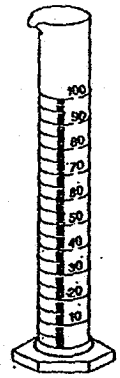


6. John wants to find out if a glass marble shown below is a matter.

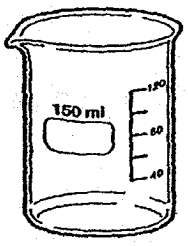
glass marble

Which of the following apparatus should he use?

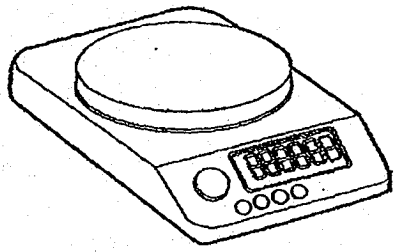
A: syringe



B: measuring cylinder



C: beaker



D: electronic balance

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

7. Study the table below.

Objects	Can reproduce?	Can respond to changes?	Can make their own food?
R	No	No	No
S	No	Yes	No
T	Yes	Yes	Yes
U	No	Yes	No

Which of the above objects is a living thing?

(1) R
(2) S
(3) T
(4) U

8. Tina wrote some statements about bacteria in her Science journal as shown below.

A. Bacteria need light to grow.
B. Bacteria grow in dry places.
C. Bacteria feed on other living things.
D. Bacteria can only be seen under a microscope.

Which of the above statements are true?

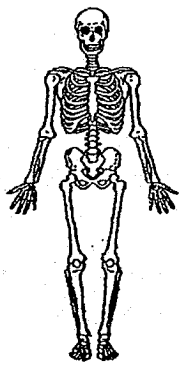
(1) A and D only
(2) C and D only
(3) A, B and C only
(4) B, C and D only

9. The diagram below shows a girl wearing a pair of rain boots which keeps her feet dry in the rain.

Which material is most suitable for making the rain boots?

(1) glass
(2) metal
(3) rubber
(4) ceramic

10. The diagram below shows a human skeletal system.

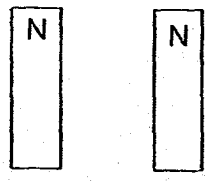


Which of the following is the correct function of the skeletal system?

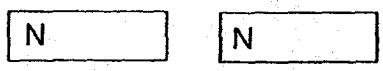
(1) Takes air into the body.
(2) Protects organs in the body.
(3) Pumps blood around our body.
(4) Carries waste materials to all parts of the body.

11. In which of the following arrangements will the magnets attract each other?

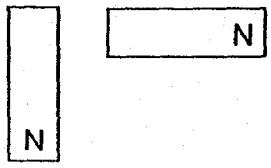
(1)



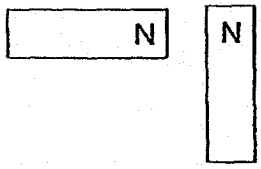
(2)



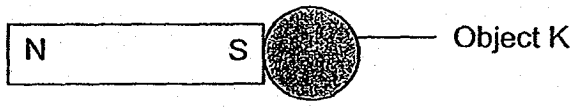
(3)



(4)



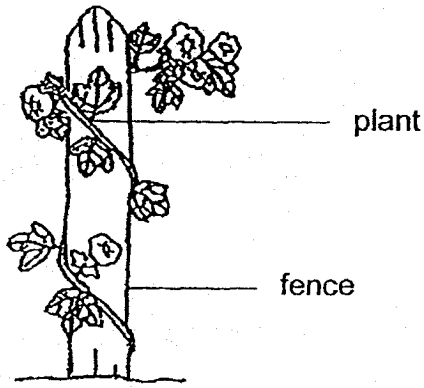
12. Object K was attracted to a magnet as shown in the diagram below.



What could Object K possibly be?

(1) steel ball
(2) glass marble
(3) rubber eraser
(4) aluminium ball

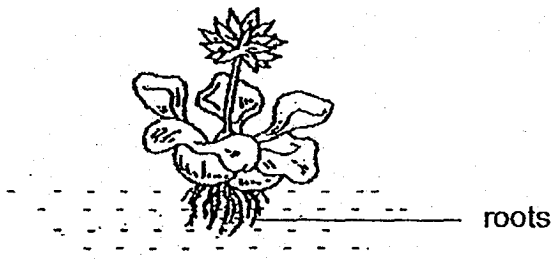
13. Keith observed a plant growing on the fence in the garden.



The plant grows on the fence to _____.

(1) produce spores for reproduction
(2) take in water from the roots to survive
(3) bear fruits and seeds for reproduction
(4) support itself in order to get enough sunlight

14. The diagram below shows a water hyacinth. It is a floating water plant.

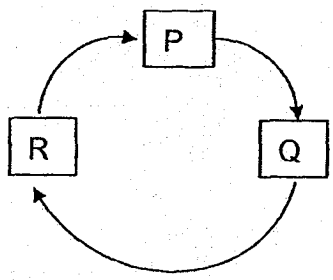


Water hyacinth

How are the roots of the water hyacinth useful to the plant?

(1) The roots store food.
(2) The roots make food.
(3) The roots absorb minerals from the water.
(4) The roots transport water and food throughout the plant.

15. The diagram below shows the life cycle of a grasshopper. The grasshopper is able to reproduce at stage R.

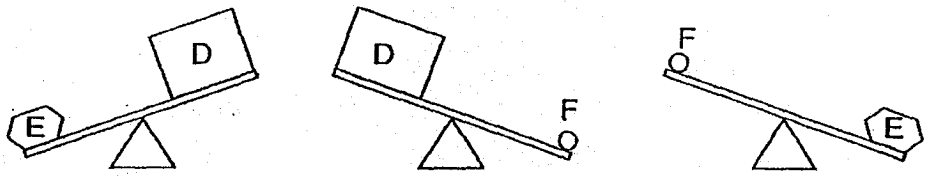


Which of the following statement(s) is/are true about the life cycle?

A. The grasshopper looks similar at stages Q and R.
B. The grasshopper is also able to reproduce at stage Q.
C. At stage P, the grasshopper is able to move from place to place.

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

16. Three objects D, E and F were placed on a balance two objects at a time as shown in the diagram below.

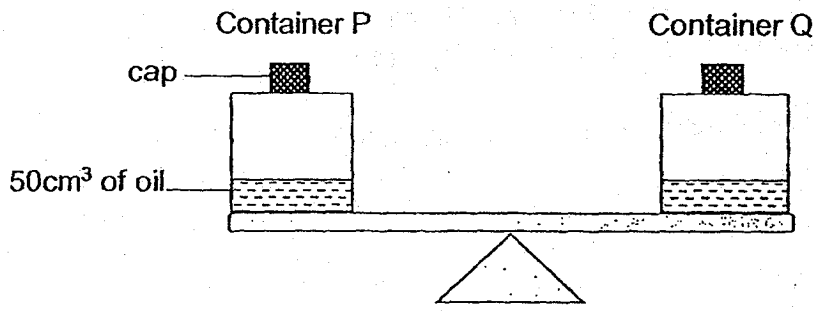


Which of the following statements is true?

A. Object E is the heaviest.
B. Object D has a larger mass than Object F.
C. Object D has a larger volume than Object F.
D. Object E has a smaller volume than Object F.

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

17. Timothy poured 50cm³ of oil into two identical containers P and Q, and covered each container with a cap. Each container has a capacity of 200cm³. He placed both containers on a balance as shown below.

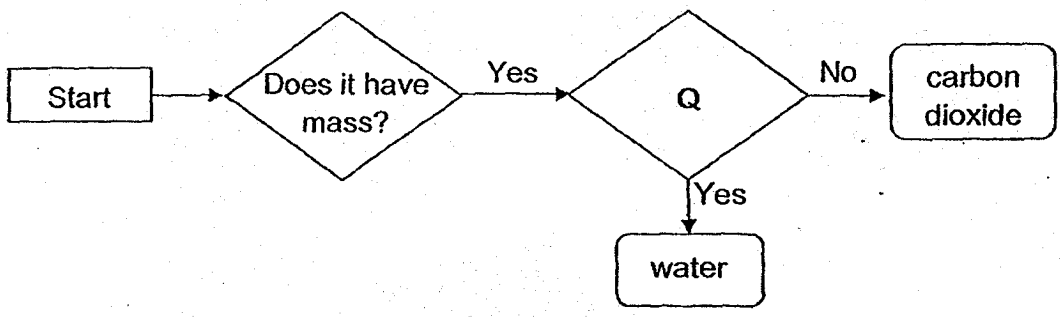


He then pumped another 50cm³ of air into container Q.

Which of the following statements is correct?

(1) The volume of air in container Q is 200 cm³.
(2) The side with container Q moved upwards.
(3) The side with container Q moved downwards.
(4) The volume of oil in container Q decreased.

18. Study the flowchart below.



What could question Q in the flowchart be?

(1) Does it take up space?
(2) Can it be compressed?
(3) Does it have a definite shape?
(4) Does it have a definite volume?

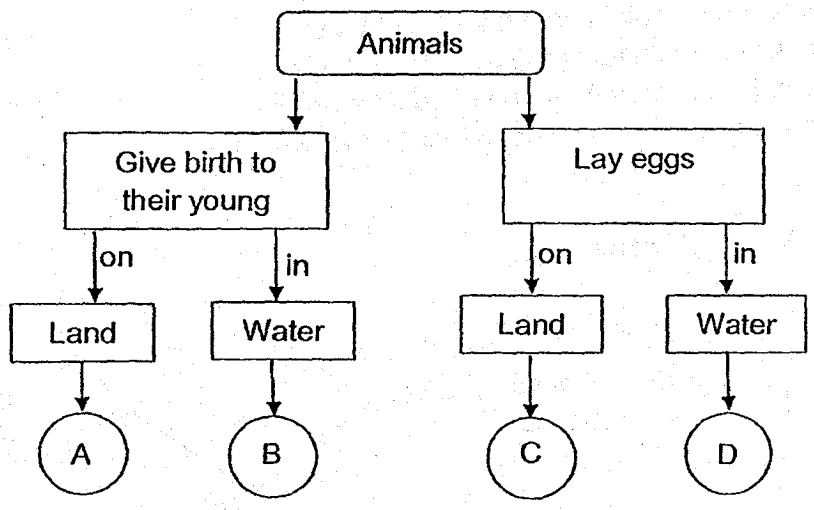
19. Joseph saw animal Y on his trip to the zoo. He described the animal as the following:

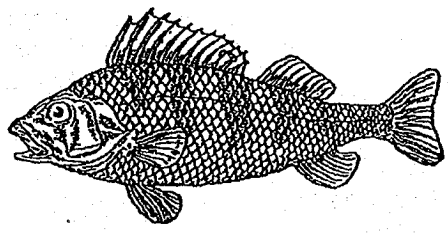
A. Animal Y has hair on its body.
B. Animal Y feeds its young with milk.
C. Animal Y reproduces by giving birth.

Which animal group does animal Y belong to?

(1) fish
(2) reptiles
(3) mammals
(4) amphibians

20. Study the flowchart below.

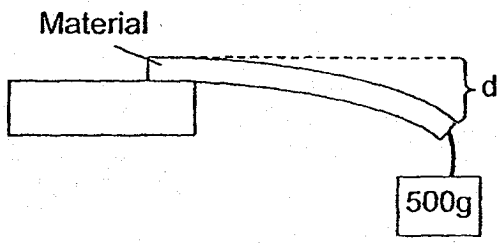




Which group does the animal above belong to?

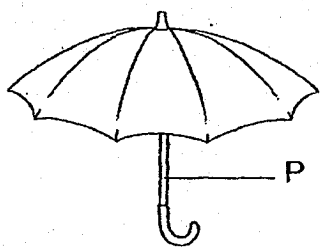
(1) A
(2) B
(3) C
(4) D

21. Simon set-up an experiment as shown below. He hung a 500g mass on four different materials K, L, M and N, one at a time and measured the distance d.



The table below shows his results.

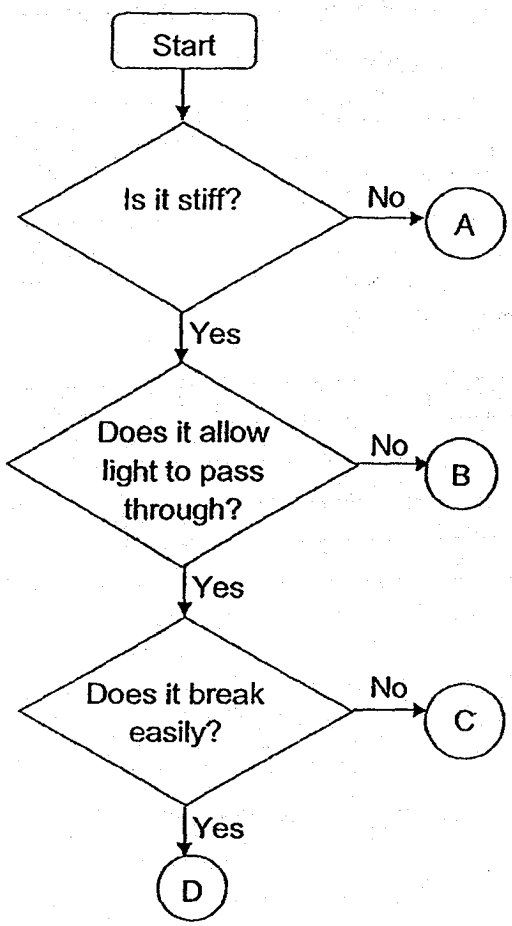
Material	Distance d (cm)
K	10
L	0
M	9
N	12

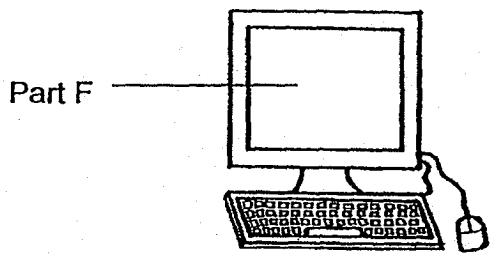


Which of the following materials best suited to make part P of the umbrella?

(1) K
(2) L
(3) M
(4) N

22. Study the flowchart below.

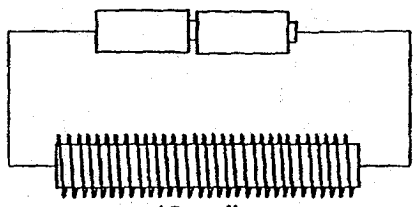




Which material A, B, C or D is suitable to make part F of a computer screen?

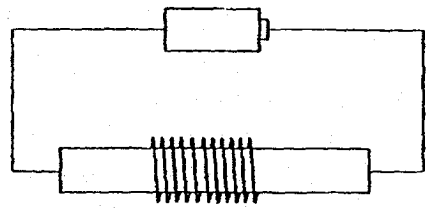
(1) A
(2) B
(3) C
(4) D

23. Lucy wants to conduct an experiment to find out how the strength of an electromagnet is affected by the number of batteries.



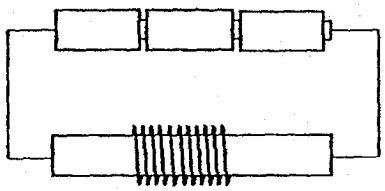
40 coils

Set-up A



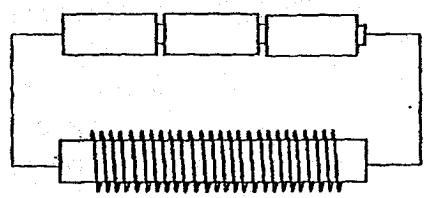
10 coils

Set-up B



10 coils

Set-up C



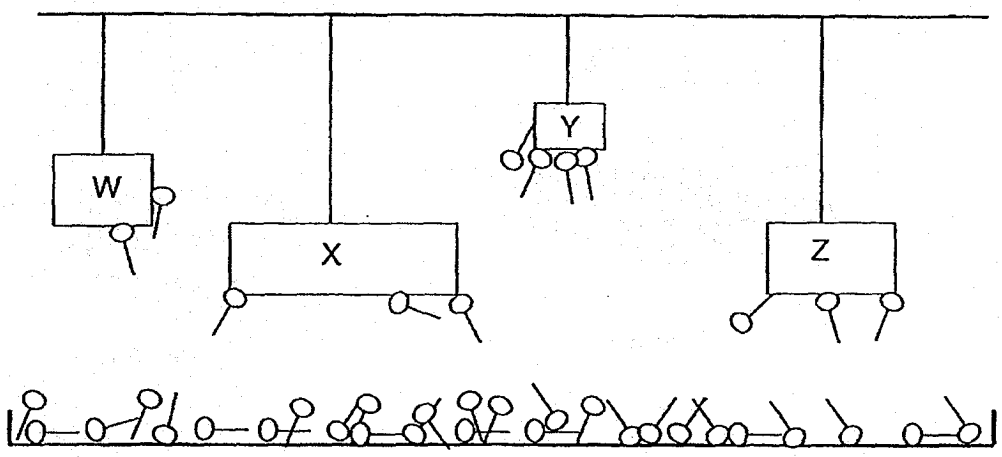
30 coils

Set-up D

Which two set-ups should she use for her experiment?

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

24. Ravi conducted an experiment with four different magnets W, X, Y and Z. He hung the magnets above a tray of pins and observed the number of pins attracted to the magnets.



Which of the following statements are true?

A. W is stronger than Y.
B. X is the strongest magnet.
C. Y is the strongest magnet.
D. X and Z have the same magnetic strength.

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

END OF BOOKLET A

GO ON TO BOOKLET B

MAHA BODHI SCHOOL
2018 SEMESTRAL ASSESSMENT 1
PRIMARY FOUR SCIENCE
(BOOKLET B)

Name: _____ ( )

Class: Primary 4 _____

Date : 8 May 2018

Total Duration for Booklets A and B: 1 h 30 min

INSTRUCTIONS TO CANDIDATES:

1. Do not turn over this page until you are told to do so.
2. Follow all instructions carefully.
3. Answer all questions.
4. Write all your answer in this booklet.

Booklet	Marks Obtained	Max Marks
A		48
B		32
Total		80

Parent's signature: _____

This booklet consists of **10** printed pages.

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BOOKLET B : [32 marks]

For questions 25 to 34, 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.

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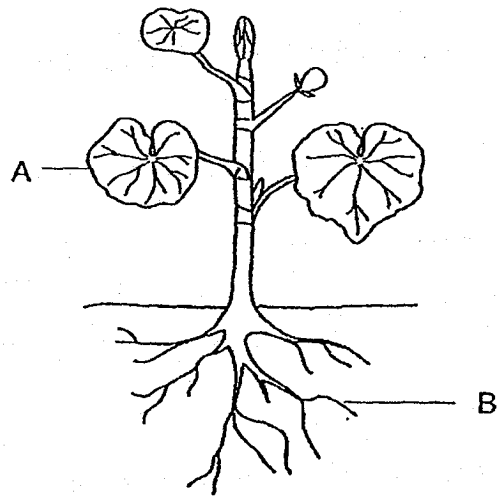
25. Study the diagram of a plant with labelled parts A and B.



(a) Name plant parts A and B. [2]

A : _____

B : _____

(b) When plant part B was removed, the plant died. Explain why. [1]

_____

_____

(c) Which organ in the human digestive system has a similar function as part B? [1]

_____

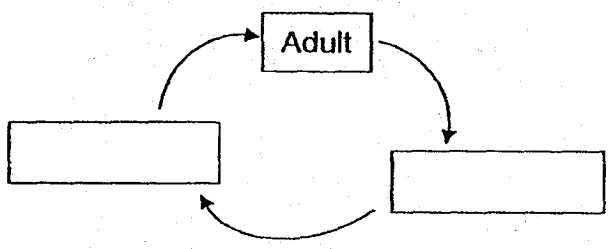
_____

Marks : / 4

26. The diagram below shows the number of days that insect K spent in each stage of its life cycle.

Stages	Days
Egg	6
Nymph	12
Adult	9

(a) Complete the life cycle of insect K in the boxes below. [1]



(b) How many stages are there in the life cycle of insect K? [1]

_____

(c) How many days would insect K take to become an adult after the egg is laid? [1]

_____

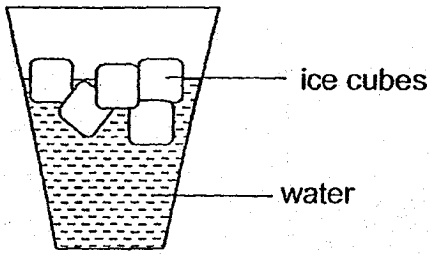
(d) State one difference between the life cycle of a butterfly and the life cycle of insect K? [1]

_____

_____

Marks : / 4

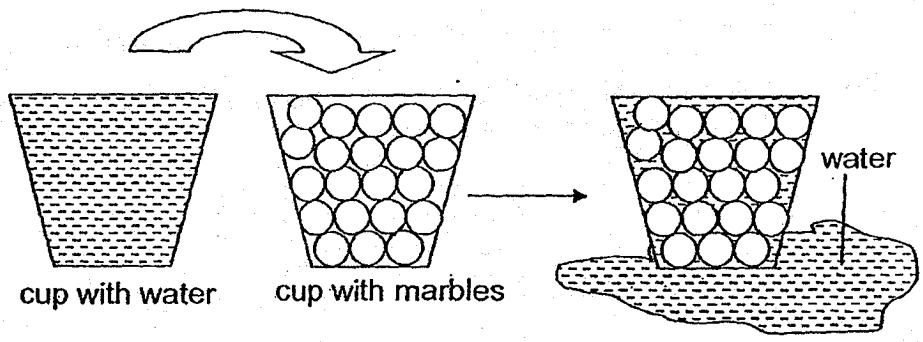
27. The diagram below shows a glass of water with ice cubes.



(a) What are the states of matter for water and ice? [1]

	State of matter
Water	
Ice	

(b) Benny poured all the water from a cup filled with water into a cup filled with marbles. He observed that the water overflowed from the cup.



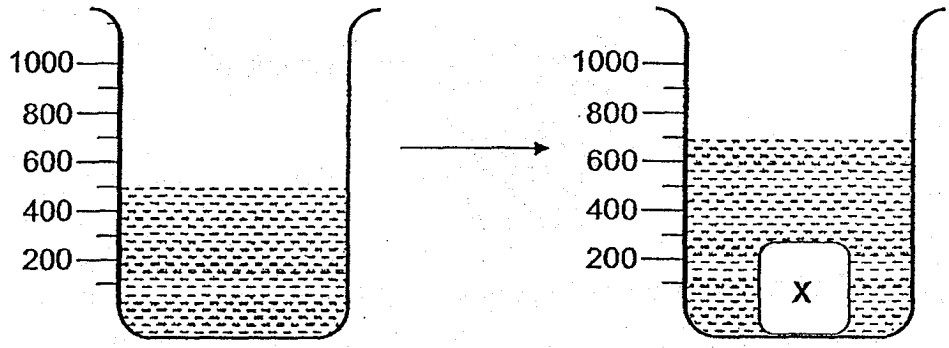
Explain why the water overflowed from the cup. [1]

_____

_____

Marks : ____ / 2

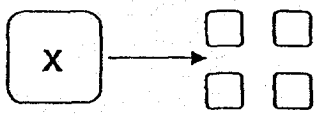
28. Gina filled a beaker with 500 ml of water. She then lowered solid X into the beaker.



(a) Based on the diagram above, complete the table below. [1]

	Volume (cm^3)
Volume of water + Object X	
Volume of water	500
Volume of Object X	

(b) Gina removed solid X from the beaker and broke it up completely into 4 smaller pieces as shown below.



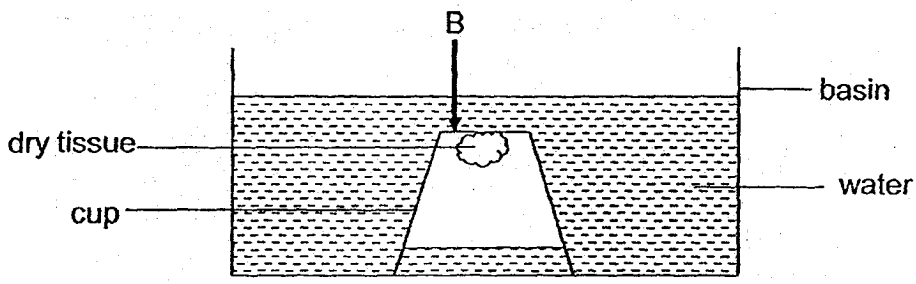
What is the total volume of water when she placed all the 4 smaller pieces of solid X back into the same beaker with 500 ml of water? Explain your answer. [1]

_____

_____

Marks : / 2

29. Kelly placed a piece of tissue on the bottom of an empty cup and lowered the cup into a basin of water until it touched the bottom of the basin. She observed that only some water had entered the cup.



(a) Explain why only some water had entered the cup and the tissue remained dry. [2]

(b) Kelly then pierced a hole at point B of the cup. She observed some bubbles coming from the hole and the tissue became wet.

What would Kelly observe about the water level in the cup? Explain why. [2]

Marks : / 4

30. Jenny placed four different things into four separate tanks A, B, C and D. She placed 100g of food and 100ml of water into each tank. She then recorded the amount of water and food left in each tank after one week as shown below.

Tank	Amount of food left (g)	Amount of water left (ml)
A	70	20
B	100	100
C	0	0
D	20	30

(a) Which tank most likely contained a non-living thing? Explain your answer. [2]

_____

_____

(b) State two characteristics of living things that is observed in this experiment. [2]

_____

_____

Marks : / 4

31. Marie carried out an experiment to find out which toothpaste was able to reduce the growth of bacteria in the mouth. The results were recorded as shown below.

Toothpaste	Amount of bacteria growth
J	Some growth
K	No growth
L	A lot of growth

(a) Which toothpaste should she use to keep her teeth clean? [1]

_____

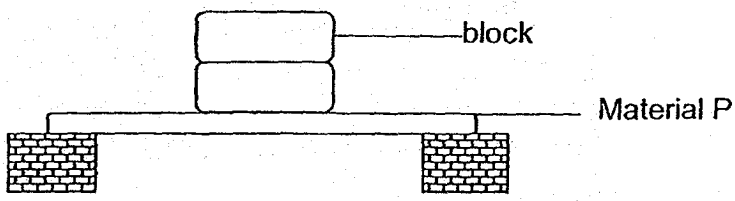
(b) Explain your answer in (a). [1]

_____

_____

Marks : / 2

32. Ravi set-up an experiment to test a property of four materials P, Q, R and S. He placed blocks of the same mass on the materials one at a time until they broke and recorded his observations in the table shown below.

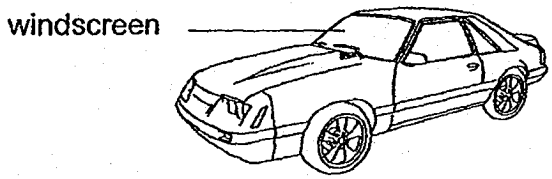


Material	Thickness (cm)	Number of blocks
P	10	2
Q	10	5
R	10	4
S	10	1

(a) What property of the materials was he trying to test? [1]

_____

(b) (i) Study the diagram below.



Which material P, Q, R or S would be suitable to make the windscreen of a car? Explain why. [2]

_____

_____

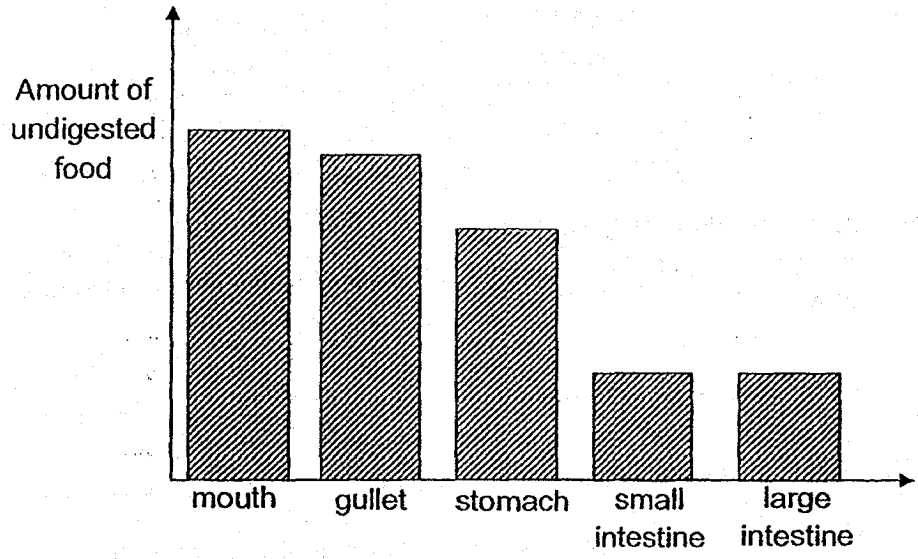
(ii) State two other useful properties the material used to make the windscreen should have such that the driver is able to see on a rainy day. [1]

Property 1: _____

Property 2: _____

Marks : / 4

33. The graph below shows how the amount of undigested food in the various parts of the digestive system changes as the food that is eaten passes through the digestive system.



(a) (i) Based on the graph, at which part of the digestive system would the greatest amount of food be digested? [1]

_____

(ii) At which part of the digestive system does digestion start? [1]

_____

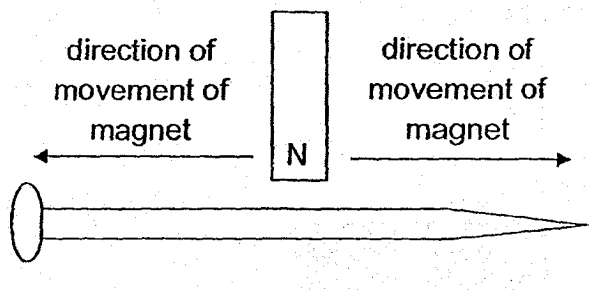
(b) Explain why the amount of undigested food is the same in both the small and large intestines. [1]

_____

_____

Marks : / 3

34. Ali used a magnet and stroked an iron nail from left to right 30 times as shown by the arrows in the diagram below.



(a) After stroking, Ali brought the nail close to some steel paper clips. He observed that the paper clips were not attracted to the iron nail. Explain why. [2]

_____

_____

(b) Using the same magnet, what changes could he make to his **method** in order for the iron nail to be able to attract the steel paper clips? [1]

_____

_____

Marks : / 3

~ END OF PAPER ~

EXAM PAPER 2018 (P4)

SCHOOL : MAHA BODHI

SUBJECT : SCIENCE

TERM : SA1

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

Q25) a) A : Leaf

B : Root

b) The plant has no roots to absorb water and minerals.

c) Large intestine

Q26) a) Adult – Egg – Nymph

b) 3 stages

c) 18 days

d) The butterfly has 4 stages while insect K only have 3 stages.

Q27) a) Water – Liquid

Ice – Solid

b) Marbles took up space in the cup. There is not enough space for all the water so the water overflowed.

Q28) a) Volume of water + Object X – 700

Volume of Object X – 200

b) 700 cm3. Although solid X was broken into 4 smaller pieces, they still occupy the same space.

Q29) a) Air was in the cup and air takes up space so the air stopped the water from going in completely. Only some water entered the cup as air in the cup can be compressed.

b) It increased. The air escaped from the hole and water went into the cup.

Q30) a) Tank B. The thing in tank B did not eat or drink anything but non-living things do not need air, food and water.

b) Living things need food and water to survive.

Q31) a) Toothpaste K

b) K had the least amount of bacteria growth.

Q32) a) Strength

b) i) Material Q. It is the strongest as it would hold the most number of blocks.

ii) Property 1 : It must be waterproof.

Property 2 : It must be transparent.

Q33) a) i) Small intestine

ii) Mouth

b) The large intestine does not digest food.

Q34) a) No clips were attracted to the iron nail as the nail was not stroked in one direction and was not magnetized.

b) He could use the magnet to stroke the iron nail in the same direction.