

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 your answer on the Optical Answer Sheet.

(56 marks)

1. The diagrams show how animal P hides in its shell when in danger.



Which characteristic of living things is animal P showing when it is in danger?

- (1) Living things can grow.
- (2) Living things can move.
- (3) Living things can reproduce.
- (4) Living things can respond to changes.

2. Study the following diagrams.



Kitten



Toy bear

Which of the following shows the correct masses of the kitten and the toy bear over three months?

(1)

Month	Mass (g)	
	Kitten	Toy bear
1	500	500
2	500	500
3	500	500

(2)

Month	Mass (g)	
	Kitten	Toy bear
1	500	500
2	1000	510
3	1500	530

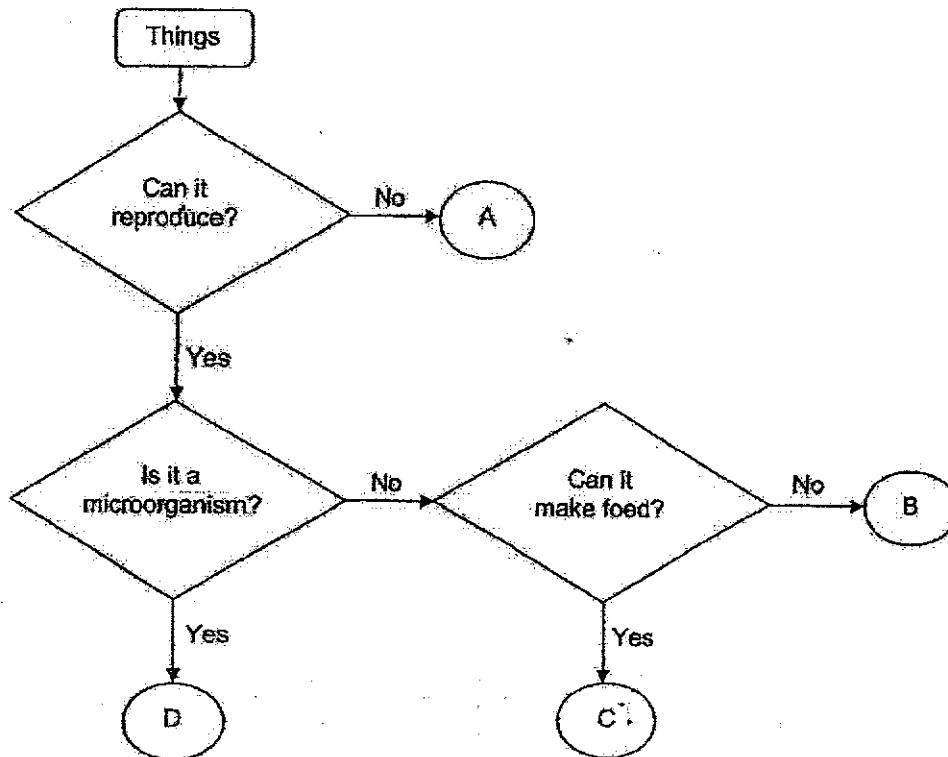
(3)

Month	Mass (g)	
	Kitten	Toy bear
1	500	500
2	1000	500
3	1500	500

(4)

Month	Mass (g)	
	Kitten	Toy bear
1	500	500
2	500	510
3	500	530

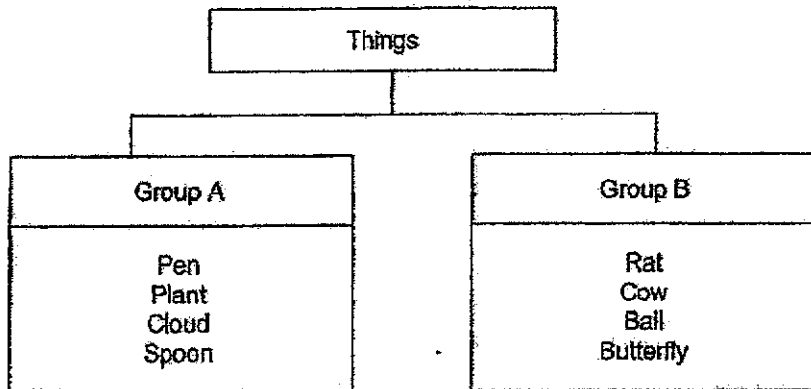
3. Study the flowchart.



Which letters, A, B, C and D, best represent a fern and bacteria?

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

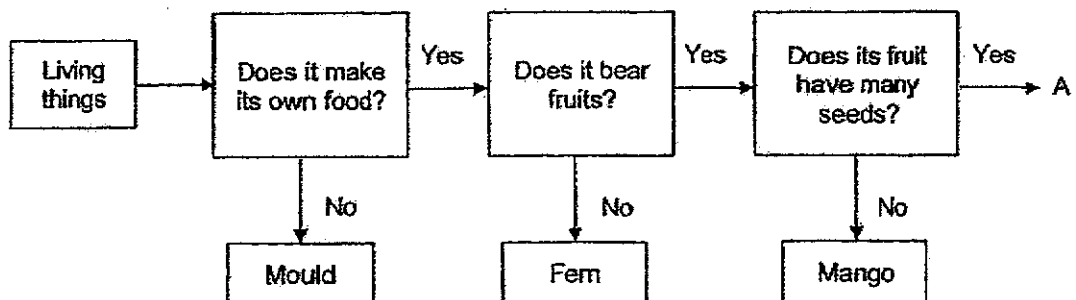
4. Study the classification chart.



Which things have been classified wrongly in Groups A and B?

	Group A	Group B
(1)	Cloud	Cow
(2)	Plant	Ball
(3)	Pen	Rat
(4)	Spoon	Butterfly

5. The flowchart describes a few characteristics of some living things.



Based on the flowchart, which one of the following best describes A?

- (1) It makes its own food but does not bear fruits.
- (2) It does not make its own food and does not bear fruits.
- (3) It makes its own food and bears fruits with many seeds.
- (4) It makes its own food but does not bear fruits with many seeds.

6. Tom wanted to find out if the amount of water given to plants affect their growth. He prepared three similar set-ups as the one shown.



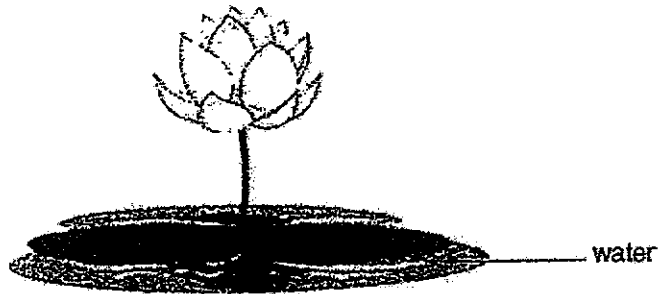
What should be the changed variable for his experiment?

- (1) The type of plant
  - (2) The amount of water
  - (3) The number of leaves
  - (4) The location of the experiment
7. Four children made the following statements.
- Ali: Flowering plants reproduce by spores.
- Bob: Non-flowering plants do not have seeds.
- Carl: Roots of all plants can only be found underground.
- Dan: All flowering plants produce flowers throughout the year.

Who made the correct statement?

- (1) Ali
- (2) Bob
- (3) Carl
- (4) Dan

8. The diagram shows a plant found in a pond.



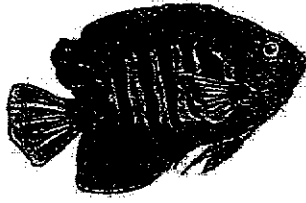
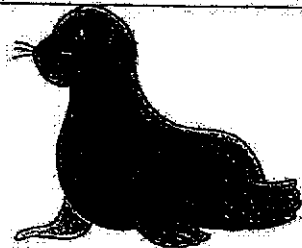
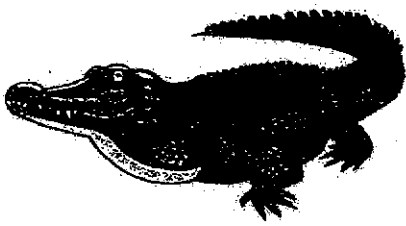

A tick (✓) in the box indicates that the plant has that characteristic. Which of the following best represents the plant?

	Grows in water	Has flowers	Can make its own food
(1)	✓	✓	
(2)			✓
(3)		✓	✓
(4)	✓	✓	✓

9. Read the riddle on animal Z.

I live in water. I breathe through my gills and I can swim with the help of my fins. I reproduce by laying eggs.

Which of the following animals is most likely to be animal Z?

<p>(1)</p>  <p>Angelfish</p>	<p>(2)</p>  <p>Seal</p>
<p>(3)</p>  <p>Crocodile</p>	<p>(4)</p>  <p>Penguin</p>

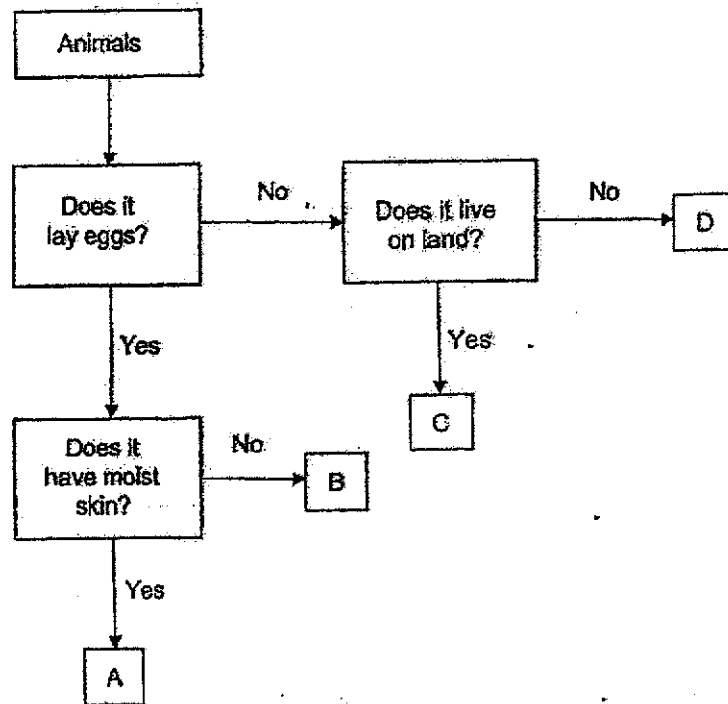
10. Study the classification table.

P	Q
Clownfish	Mouse
Frog	Lion
Butterfly	Goat

Which of the following is the correct headings for P and Q?

	P	Q
(1)	Live in water	Live on land
(2)	Lay eggs	Give birth to young alive
(3)	Does not have legs	Have legs
(4)	Has an outer covering of scales	Has an outer covering of hair

11. Study the flowchart.



Which animal group does animal A belong to?

- (1) Fish
- (2) Reptiles
- (3) Mammals
- (4) Amphibians

12. Four students made the following statements about the characteristics of animals:

April: Reptiles have dry skin.

Betty: All insects have wings.

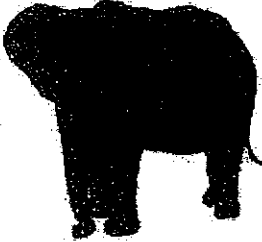



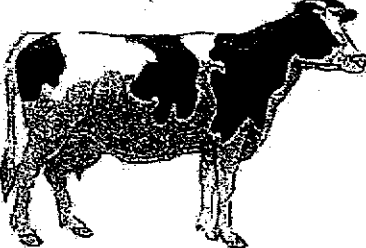

Carl: Amphibians only breathe through their lungs.

David: Mammals produce milk for their young to feed on.

Which of the following two students made a wrong statement?

- (1) April and Betty
- (2) April and David
- (3) Betty and Carl
- (4) Carl and David

13. Study the classification table.

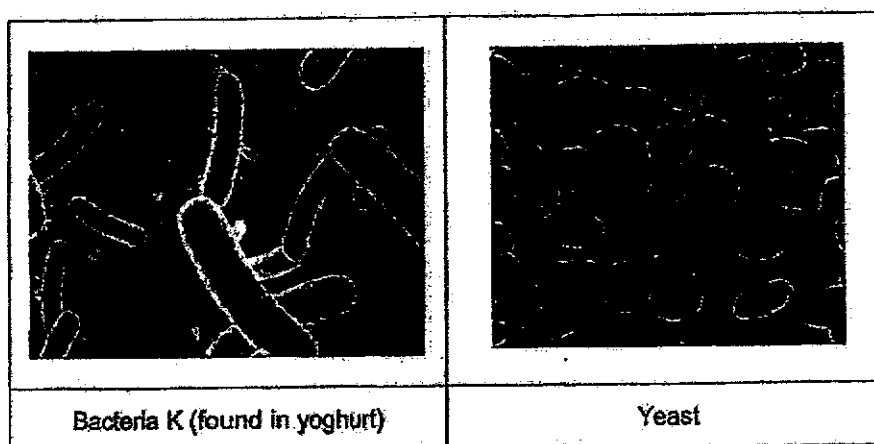
Group X	Group Y
 Elephant	 Turtle
 Bat	 Salamander
 Cow	 Monitor Lizard

Which animal is classified wrongly?

- (1) Bat
- (2) Turtle
- (3) Elephant
- (4) Salamander



14. Mrs Heng studied the characteristics of bacteria K and yeast.



She made the following conclusions:

- A: Bacteria K reproduce by spores.
- B: Both bacteria K and yeast are useful.
- C: Yeast can be seen with the naked eye.
- D: Both bacteria K and yeast feed only on living things that are alive.

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

- (1) B only
  - (2) A and C only
  - (3) A and D only
  - (4) B, C and D only
15. Which of the following is a similarity between fungi and bacteria?
- (1) They are all harmful.
  - (2) They need sunlight to grow.
  - (3) They only grow in dry places.
  - (4) They come in different shapes and sizes.

16. The table shows the different characteristics, X, Y and Z, of a mushroom, bacteria and a fern. A tick (✓) indicates that the living thing has the characteristic.

Characteristics	Mushroom	Bacteria	Fern
X			✓
Y	✓		✓
Z		✓	

Which of the following characteristics can X, Y and Z be?





	X	Y	Z
(1)	Can make its own food	Reproduce by spores	Can only be seen with a microscope
(2)	Can only be seen with a microscope	Can make its own food	Reproduce by spores
(3)	Reproduce by spores	Can only be seen with a microscope	Can make its own food
(4)	Can make its own food	Can be seen with the naked eye	Reproduce by spores

17. Where can fungi grow?

- A: A rotting log  
 B: A dry glass container  
 C: A fruit left on the kitchen table  
 D: A damp leather bag made from animal skin in the cupboard

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

18. Hua Yi wanted to find out if bread mould needs warmth to grow. She prepared four set-ups as shown.

 <p>Fresh bread</p> <p>Sprinkled with 10 drops of water and placed in refrigerator.</p> <p>Set-up A</p>	 <p>Toasted bread</p> <p>Placed in refrigerator</p> <p>Set-up B</p>
 <p>Fresh bread</p> <p>Sprinkled with 5 drops of water and placed on top of cupboard.</p> <p>Set-up C</p>	 <p>Fresh bread</p> <p>Sprinkled with 10 drops of water and placed on top of cupboard.</p> <p>Set-up D</p>

Which two set-ups should she use to test her aim?

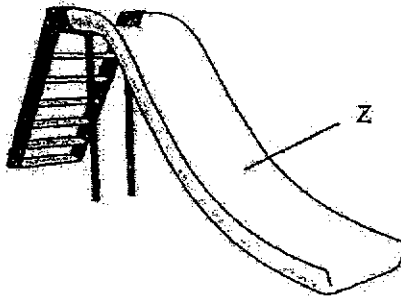
- (1) A and B
  - (2) A and D
  - (3) B and C
  - (4) C and D
19. Study the classification table.

Materials			
Group P	Group Q	Group R	Group S
Worksheet Newspaper	Sock Bedsheet	Nail Staple	Brick Floor tile

Which of the following can be classified under Group Q?

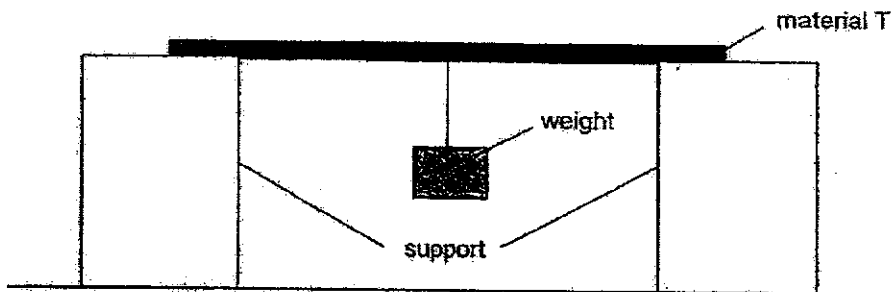
- (1) Pin
- (2) Vase
- (3) Towel
- (4) Magazine

20. The diagram shows a slide at an outdoor playground.



Besides strength, which other important property must be considered when making part Z?

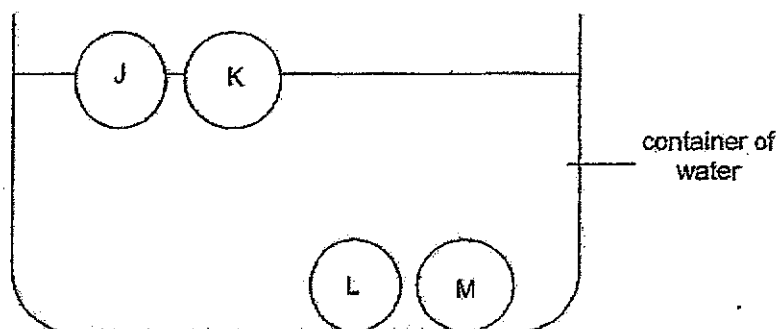
- (1) Flexibility
  - (2) Waterproof
  - (3) Transparency
  - (4) Ability to float in water
21. Wan Yee conducted an experiment with material T as shown. She continued to hang more weights from material T until it broke.



What was the aim of Wan Yee's experiment?

- (1) To find out how heavy material T is.
- (2) To find out how strong material T is.
- (3) To find out how flexible material T is.
- (4) To find out how transparent material T is.

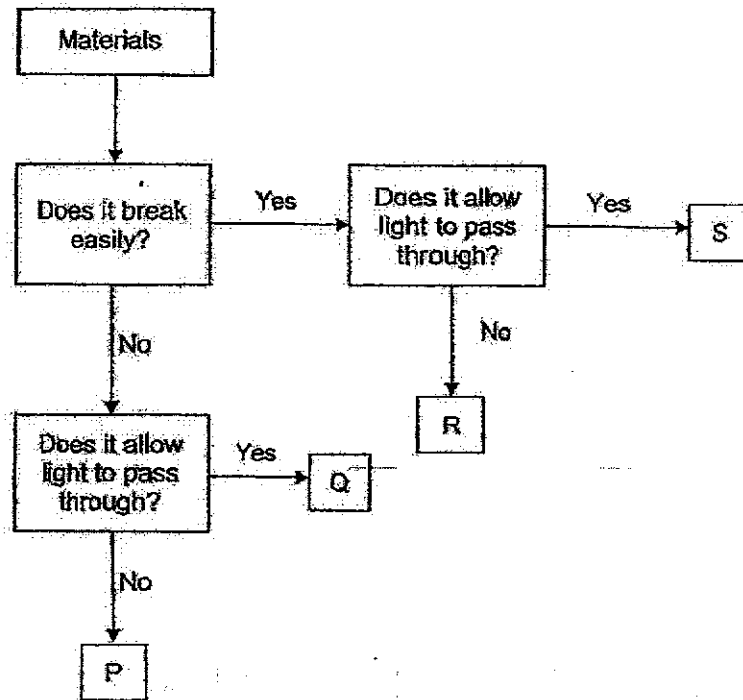
22. Mrs Tan dropped four similar balls, J, K, L and M, made of different materials into a container of water.



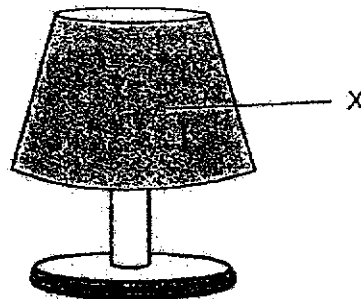
Based only on the diagram, which of the following conclusions can she make?

- A: Only balls L and M sink in water.
  - B: Ball M will float after some time.
  - C: Ball K must be made of polystyrene.
  - D: Balls J and K will sink when more water is added.
- (1) A only
- (2) A and C only
- (3) B and D only
- (4) B, C and D only

23. Study the flowchart.



Which material would be most suitable to make part X of a table lamp?



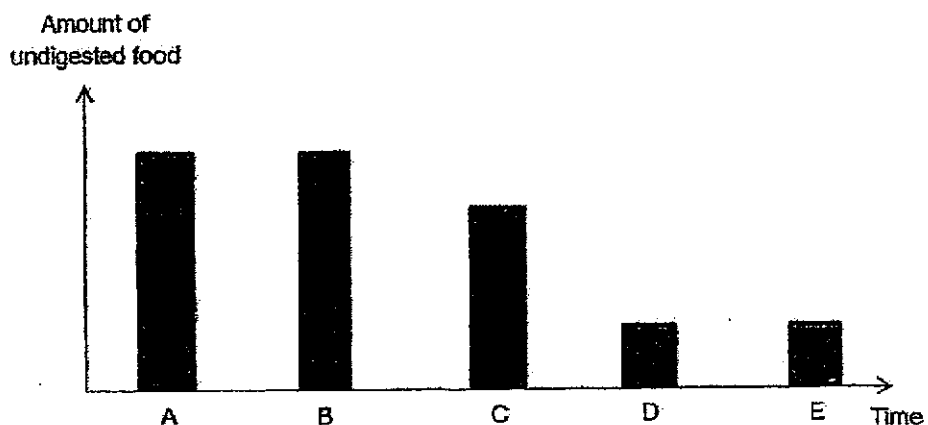
- (1) P
- (2) Q
- (3) R
- (4) S

24. The table shows the functions of a few human organ systems.

A	Gives the body its shape
B	Helps different parts of the body to move
C	Carries waste materials away from different parts of the body
D	Carries digested food, water and oxygen in the blood to all parts of the body

Which one of the following is/are the function(s) of the human circulatory system?

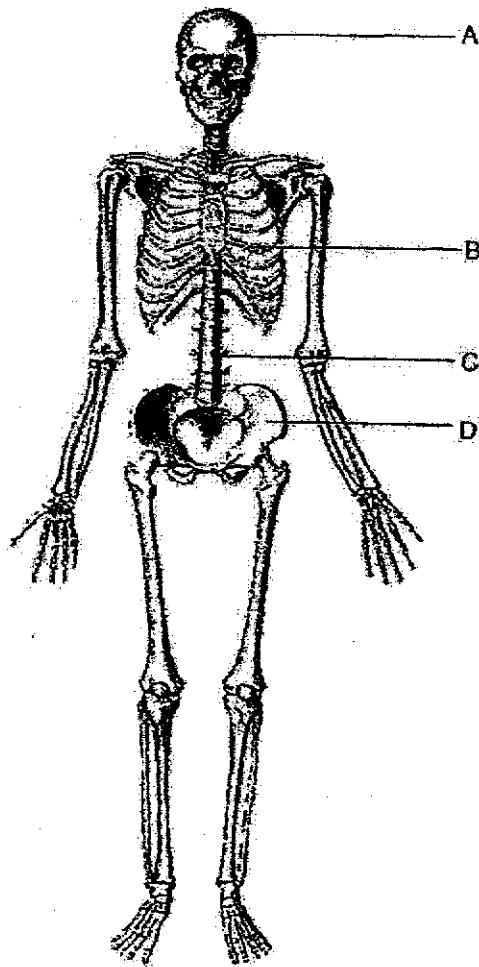
- (1) D only  
 (2) A and B only  
 (3) C and D only  
 (4) A, B, C and D
25. The bar graph shows the amount of undigested food leaving the various organs, A, B, C, D and E, as it travels through the digestive system.



Which of the following represents the stomach and the small intestine?

	Stomach	Small intestine
(1)	A	B
(2)	B	C
(3)	C	D
(4)	D	E

26. The diagram shows parts of the human skeletal system.




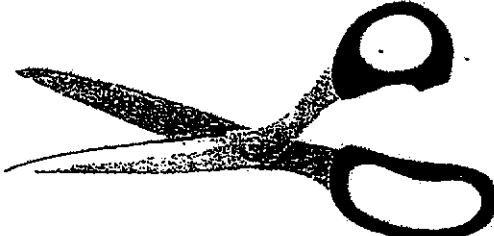


Which part protects our heart?

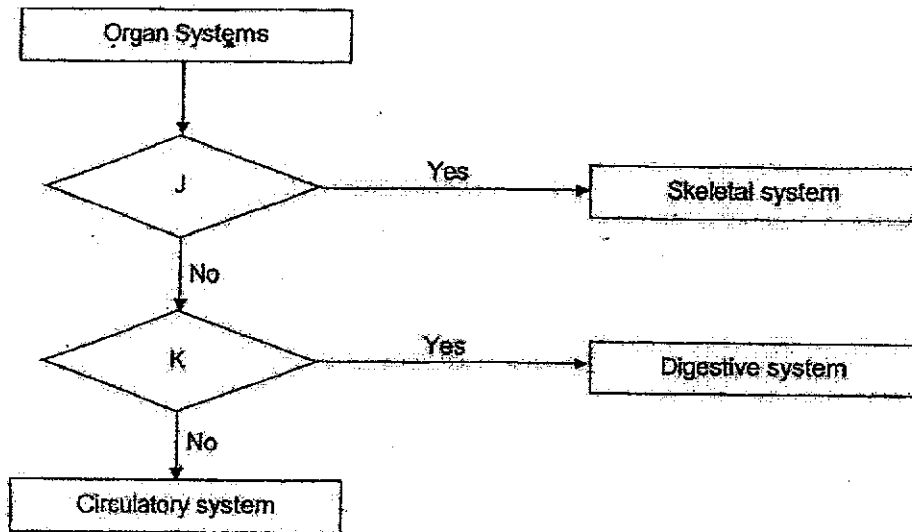
- (1) A
- (2) B
- (3) C
- (4) D



27. Which of the following is a system?

(1)	Coin	
(2)	Ruler	
(3)	Eraser	
(4)	Scissors	

28. Study the flowchart.



Which of the following represents J and K?

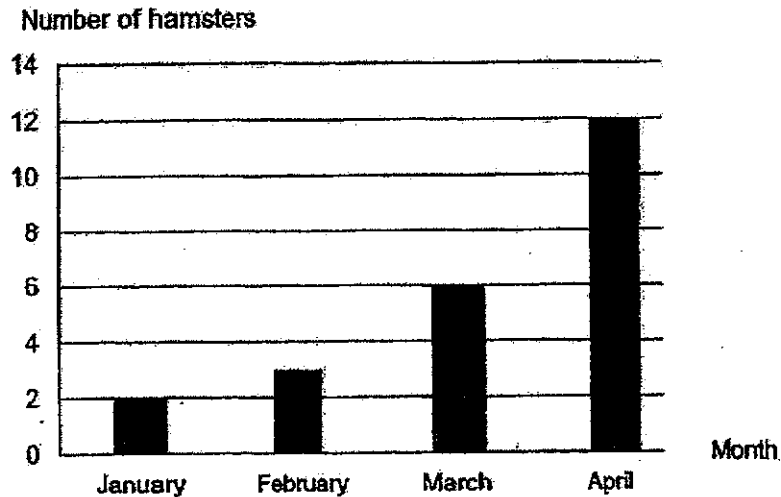
	J	K
(1)	Does it support the body?	Does it protect important organs in the body?
(2)	Does it give the body shape?	Does it break down food into simple substances?
(3)	Does it support the body?	Does it transport blood to all parts of the body?
(4)	Does it protect important organs in the body?	Does it help the body to move?

End of Booklet A

For questions 29 to 41, write your answers in this booklet.

The number of marks available is shown in brackets [ ] at the end of each question or part question. (44 marks)

29. Peter kept some hamsters in a cage for some time. He fed them with the same amount of food and water every day. The bar graph shows the number of hamsters in the cage over four months.



- (a) Based on the graph, what happened to the number of hamsters from January to April? [1]

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- (b) Based on the graph, which characteristic of living things is observed from January to April? [1]

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- (c) State another characteristic of living things. [1]

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SCORE	3
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30. The table shows the characteristics of four living things, A, B, C and D. A tick (✓) shows that the living thing has that characteristic.

Characteristic	Living Things			
	A	B	C	D
Does it make food?	✓	✓		
Does it have flowers?	✓			
Does it have hair?			✓	

- (a) Based on the table, what is the difference between A and B?

[1]

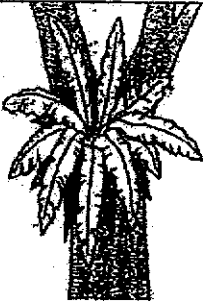
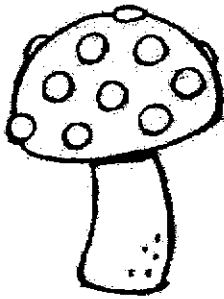
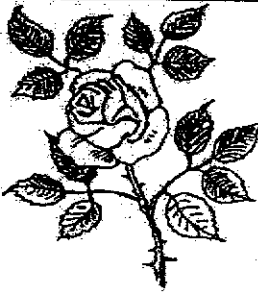

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- (b) Using the information in the table above, classify living things A, B, C and D, in the boxes below.

[2]

fern	toadstool	rose plant	bat
			

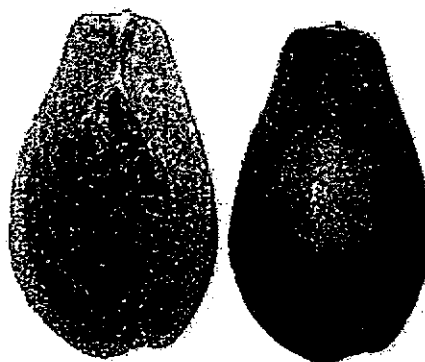
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SCORE	3
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31. Study the pictures of the fruits.



soursop



papaya

- (a) Based only on your observation of the pictures, state a similarity and a difference between the soursop and papaya. [Do not compare shape, size or colour.] [2]

Similarity: \_\_\_\_\_

\_\_\_\_\_

Difference: \_\_\_\_\_

\_\_\_\_\_

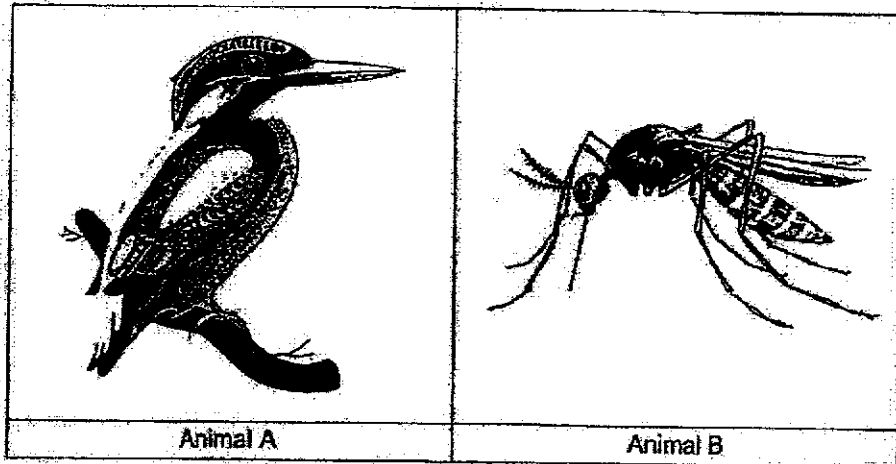
- (b) Read the following statements. Write 'T' for each statement that is true and 'F' for each statement that is false. [2]

	Statement	True 'T' or False 'F'
(i)	Plants can only be found on land.	
(ii)	Most non-flowering plants reproduce by seeds.	
(iii)	Leaves of different plants can have different colours.	
(iv)	Plants need air, food and water to survive.	

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SCORE	4
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32. Study the pictures of animals.



- (a) Based only on your observation of the pictures, state one similarity and one difference between the physical characteristics of animal A and B. [Do not compare shape, size or colour.]

[2]

Similarity: \_\_\_\_\_

\_\_\_\_\_

Difference: \_\_\_\_\_

\_\_\_\_\_

- (b) State the function of animal A's outer covering.

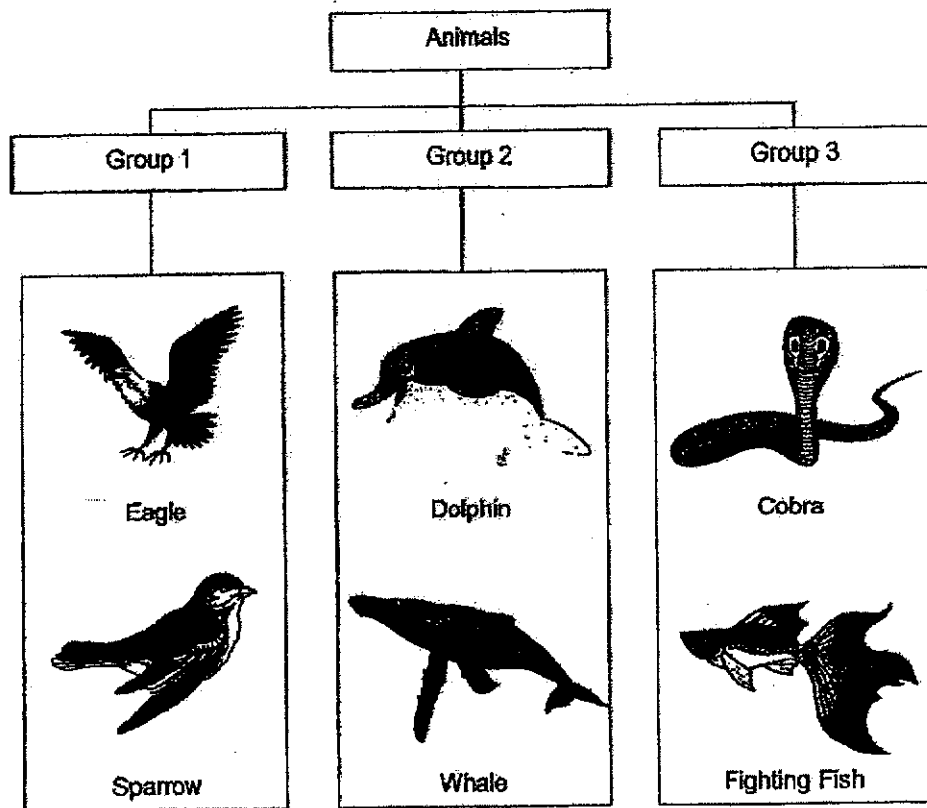
[1]

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33. John grouped some animals into a classification chart.



- (a) What characteristic did John use to group the animals? [1]

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- (b) Name another animal that can be placed in Group 2. [1]

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- (c) John decided to regroup the animals such that there are three animals in each group. Group the animals in the table provided and state their headings clearly. [2]


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SCORE	4
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34. Bala wanted to find out which type of hand sanitizer, X, Y or Z, is the most effective in killing bacteria.

- (a) Tick (✓) the variable(s) which should be kept the same for Bala to carry out a fair test.

[1]

Variables	Tick (✓)
Type of sanitizer	
Amount of sanitizer	
Location of the experiment	
Amount of bacteria at the start of the experiment	

- (b) Bala was given some steps to conduct his experiment. However, the steps were not arranged in the correct order.

Arrange the steps in the correct order by writing 1, 2 and 3 in the boxes. Step 4 has already been done for you.

[1]

Steps	Order
Put some bacteria on a plate.	
Record the amount of bacteria left on the plate after 10 minutes.	
Repeat steps 1 to 3 for sanitizers Y and Z.	4
Add a few drops of sanitizer X onto the plate of bacteria.	

- (c) He recorded the results of his experiment in a table as shown.

Plate with hand sanitizer	Amount of bacteria left (unit)
X	45
Y	32
Z	8

Which sanitizer, X, Y or Z, is the most effective in killing bacteria?

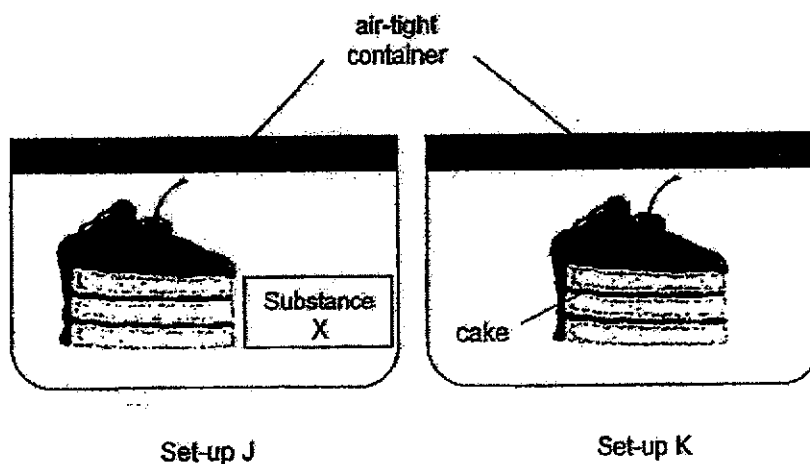
[1]

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SCORE	3
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35. Daniel prepared two set-ups J and K as shown. He placed a slice of cake each in two similar air-tight containers. He then placed a packet of substance X, which removes moisture, in set-up J.



After two weeks, he noticed black spots on only one of the cakes.

- (a) What were the black spots? [1]

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- (b) Which set-up, J or K, contained the cake that had black spots? Explain your answer. [1]

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- (c) Daniel wants to find out if the black spots need sunlight to grow. What change(s) should he make to set-ups J and K to achieve this new aim? [2]

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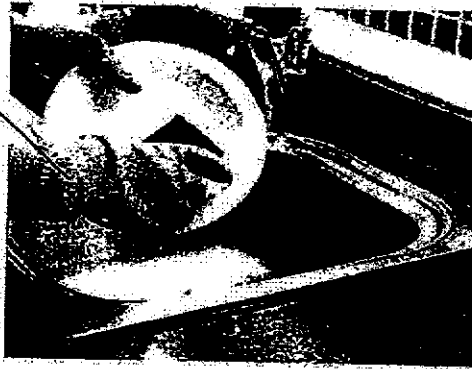
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SCORE	
	4

36. Mrs Lim wears a pair of rubber gloves when washing dishes to keep her hands dry.

rubber gloves



- (a) Give a reason why rubber is a suitable material to make the gloves for washing dishes.

[1]

- (b) Name another material that can be used to make the gloves.

[1]

Mrs Lim wanted to find out if materials, A, B, C and D, absorb different amounts of water. She recorded the mass of each material before and after placing them in four identical containers with the same amount of water as shown in the table.

Materials	Mass of material before placing in container (g)	Mass of material after placing it in the container(g)
A	100	250
B	100	375
C	100	180
D	100	100

- (c) Based on the results, which material, A, B, C or D, is most suitable to make a towel to dry the dishes? Explain your answer.

[1]

(Go on to the next page)

SCORE	3
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37. The table shows the different properties of materials S, T and U. A tick (✓) indicates that the material has the property.

Property	Material		
	S	T	U
Strength	✓	✓	
Flexibility			✓
Waterproof		✓	✓

- (a) State all the properties of material U. [1]

- (b) Which material, S, T or U, is most suitable to make a surfboard used for water sports as shown in the diagram below? [1]

Material \_\_\_\_\_

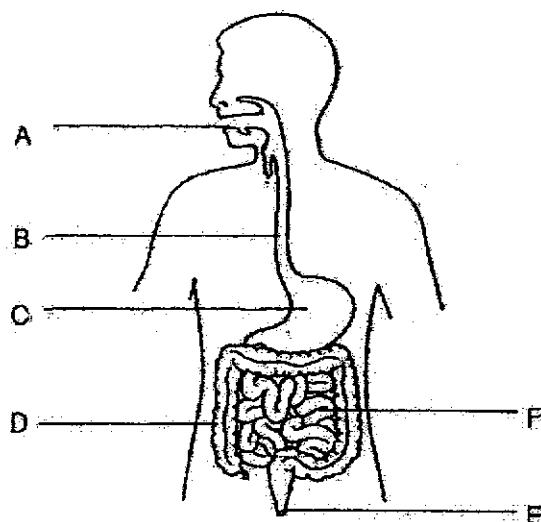


- (c) Besides the properties mentioned in the table, state another property that a surfboard should have. [1]

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SCORE	3
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38. The diagram shows the human digestive system.



- (a) State the part(s), A, B, C, D, E or F, that match(es) the following functions. You may use the letters more than once. Not every letter needs to be used. [2]

	Function	Part
(i)	Chews food into smaller pieces	
(ii)	Allows food to pass from the mouth to the stomach	
(iii)	Produces digestive juices to break down food into simple substances	
(iv)	Absorbs water from undigested food	

- (b) At which part, A, B, C, D, E or F does digestion start and end? [1]

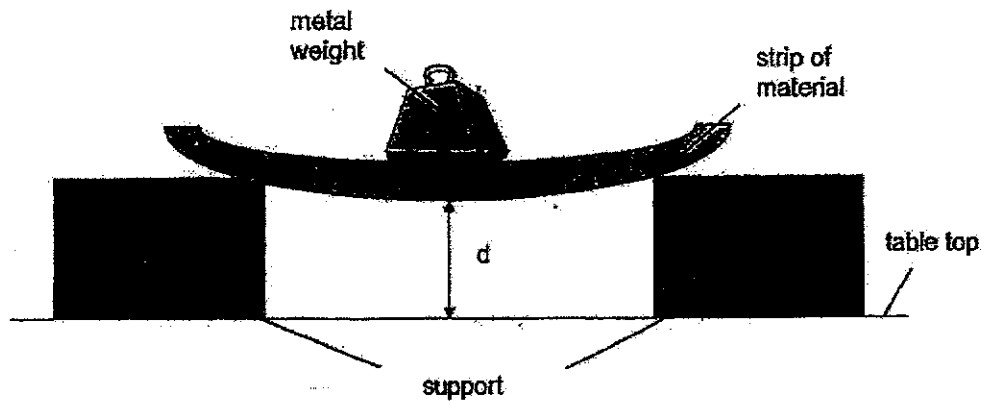
Start: \_\_\_\_\_

End: \_\_\_\_\_

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SCORE	3
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- 39(a) Miss Koh set up an experiment to compare similar strips made of different materials, W, X, Y and Z. She placed a metal weight of 100g in the middle of the strip held by supports and recorded the distance,  $d$ , between the table top and the lowest point of the strip.



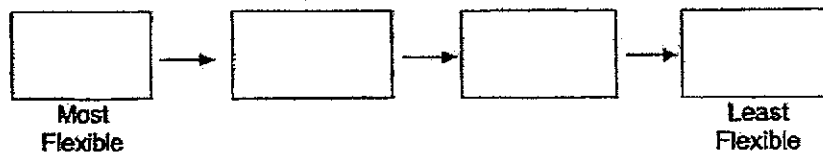
- (i) State the property of materials that was tested in the above experiment. [1]

- (ii) Miss Koh recorded her results for the different materials in the table.

Materials	Distance, $d$ (cm)
W	20
X	5
Y	25
Z	15

[1]

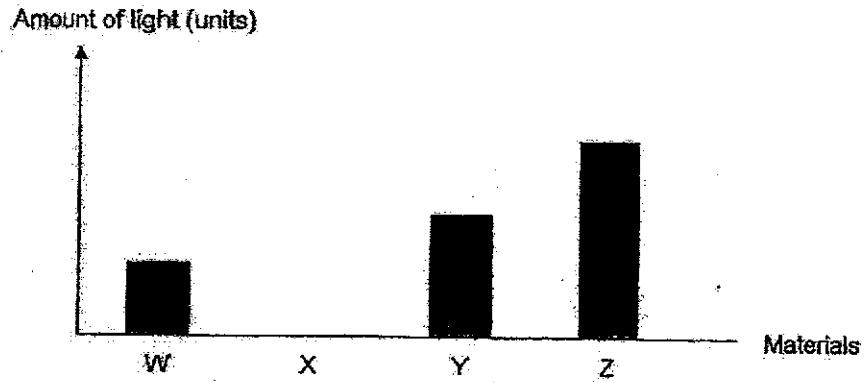
Arrange materials W, X, Y and Z starting from the most flexible material.



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SCORE	2
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- 39(b) Miss Koh then did another experiment to find out if materials, W, X, Y and Z, allowed different amounts of light to pass through. After conducting her experiment, she recorded her results in the bar graph as shown.



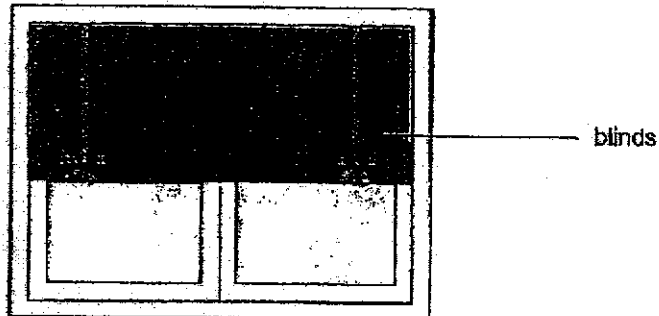
- (i) Based on the experiment, what can she conclude about material Z? [1]

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Miss Koh wanted to buy blinds to completely block sunlight from entering her bedroom.



- (ii) Which material, W, X, Y and Z, should she buy for her blinds? Explain your answer. [1]

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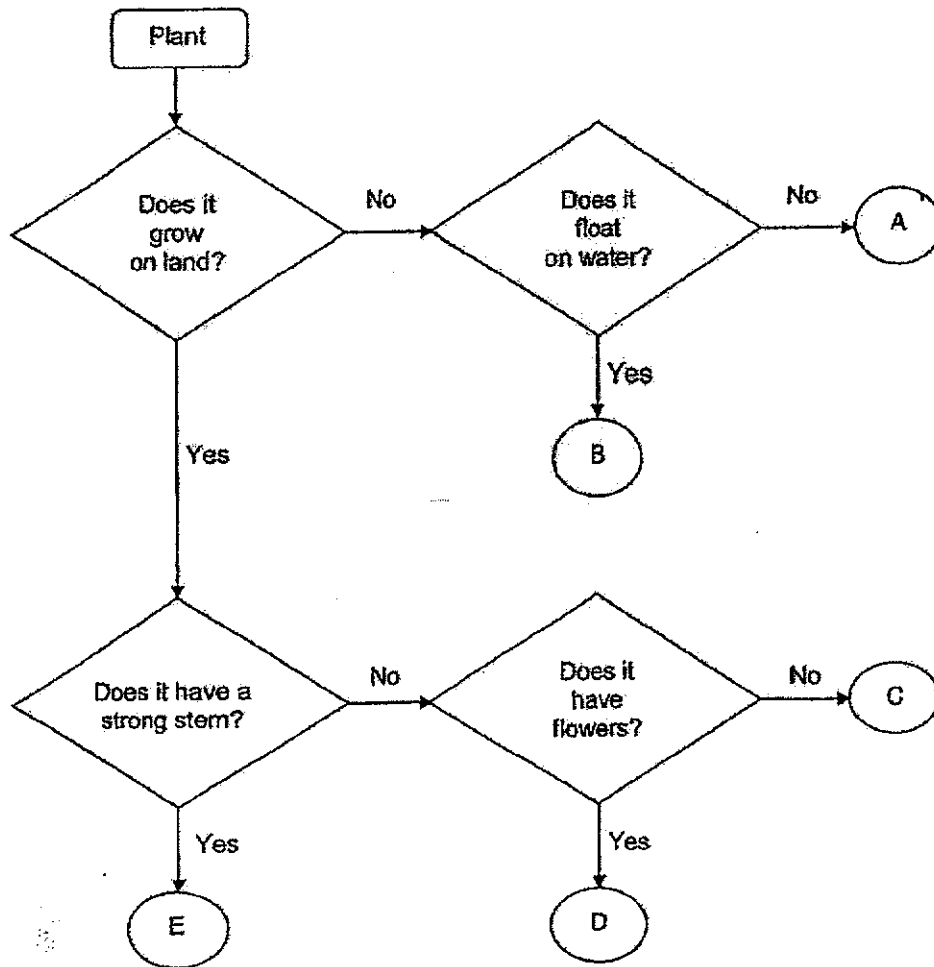


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SCORE	
	2

40. Study the flowchart carefully.



(a) Based on the flowchart, state a difference between plants B and E.

[1]

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(b) State a similarity between plants C and D.

[1]

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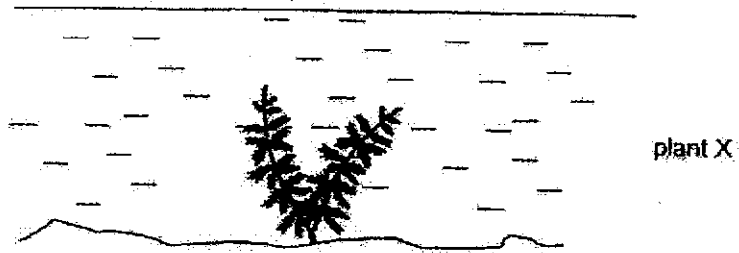


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SCORE	
	2

- (c) Plant X grows underwater as shown.



Based on the flowchart, which plant, A, B, C, D or E, best represents plant X?

[1]

41. The human body consists of a number of organ systems.

- (a) Match the organ systems to their functions.

[1]

Organ System		Function
Muscular system	•	• Gives the body shape
Respiratory system	•	• Helps different parts of the body to move
Skeletal system	•	• Takes air into the body, and removes air from the body

- (b) What is the function of the digestive system?

[1]

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- (c) What happens to the digested food in the small intestine?

[2]

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End of Paper

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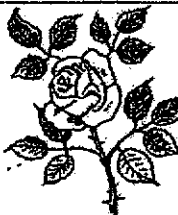



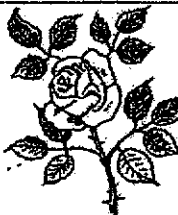



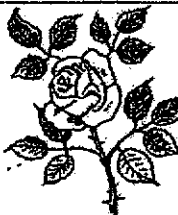



# ANSWER KEY

## BOOKLET A

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

## BOOKLET B

Q29	a) The number of hamsters increased from January to April. b) Reproduce c) Living things can grow												
Q30	a) A has more flowers while B does not have flowers. <table border="1"><thead><tr><th>fern</th><th>toadstool</th><th>rose plant</th><th>bat</th></tr></thead><tbody><tr><td></td><td></td><td></td><td></td></tr><tr><td>B</td><td>D</td><td>A</td><td>C</td></tr></tbody></table> b)	fern	toadstool	rose plant	bat					B	D	A	C
fern	toadstool	rose plant	bat										
													
B	D	A	C										
Q31	a) Similarity: Both the soursop and papaya have many seeds. Differences: Soursop have a rough skin while papaya has a smooth skin. bi) False bii) False biii) True biv) True												
Q32	a) Similarity : Both have eyes Differences: Animal B has six legs while animal a has												

	two legs. b) Animal A outer covering's is to give the animal warmth.				
Q33	a) John group the animals by using characteristics. b) seal c) <table border="1"> <tr> <td>Live on land</td><td>live in water</td></tr> <tr> <td>Eagle Sparrow Cobra</td><td>Dolphin Fighting fish whale</td></tr> </table>	Live on land	live in water	Eagle Sparrow Cobra	Dolphin Fighting fish whale
Live on land	live in water				
Eagle Sparrow Cobra	Dolphin Fighting fish whale				
Q34	a) Amount of sanitizer, Location of experiment and Amount of bacteria at the start of the experiment. b) 1, 3, 4, 2 c) Z				
Q35	a) mould b) There is no moisture in the container helping the mould to grow. c) He must take away substance X and place one of the set-up in the presence of sunlight to achieve his new aim.				
Q36	a) It is waterproof. b) Plastic c) B. As the table above shows that before placing in the container and after placing I the container has changed a lot, therefore material B can absorb the most water.				
Q37	a) The properties of material U is flexible and waterproof. b) Material T c) Able to float on water.				
Q38	ai) A aii) B aii) F aii) C b) Start: A End: F				
Q39	ai) Flexibility aii) X, Z, W, Y bi) Material Z allow most light to pass through. bii) X. As material X did not allow any light to pass through.				
Q40	a) Plant B grow in water while Plant E grow on land. b) Both of them grow on land. c) A				

**Q41**

**Organ System**

**Function**

Muscular system

Gives the body shape

Respiratory system

Helps different parts of the body to move

Skeletal system

Takes air into the body, and removes air from the body

**a)**

**b) Digest break down food into simpler substances.**

**c) Digested food will pass through the walls of the small intestine and into the bloodstream.**