NANYANG PRIMARY SCHOOL

PRIMARY 3 SCIENCE

SEMESTRAL ASSESSMENT 1
2018

BOOKLET A

Date : 8 May 2018
Duration : 1 h 20 min

Name : _____ (   )

Class: Primary 3 (   )

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
**FOLLOW ALL INSTRUCTIONS CAREFULLY.**

Booklet A consists of 15 printed pages including this cover page.

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 the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet provided.

1. Study the diagram below.

Things

Living things		Non-living things
snake		table
eagle		dress
A		**B**
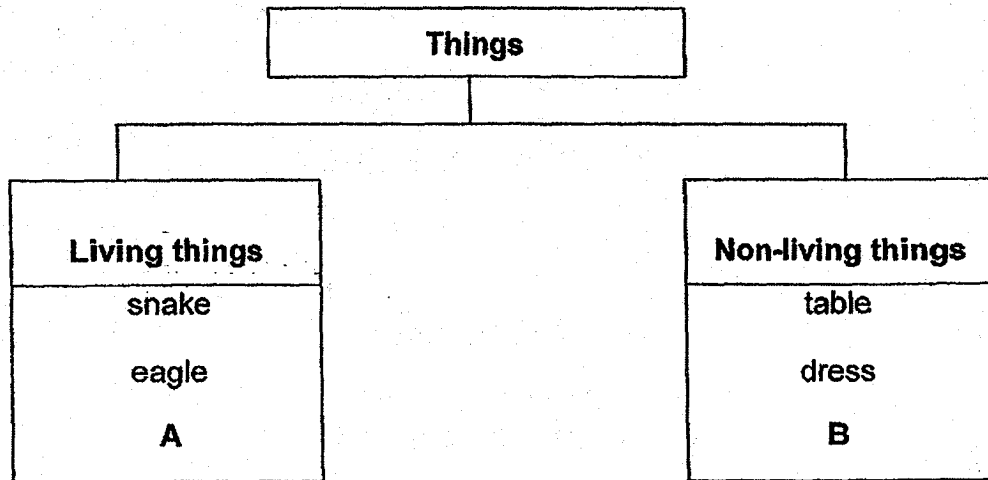
Which one of the following best represents A and B?

	A	B
(1)	rock	chair
(2)	plant	horse
(3)	cat	bottle
(4)	fish	bacteria

2. Jane found some animal X. She placed them in an open tank and fed them with the same amount of food and water daily. She observed the changes that took place and recorded her observations below.

| Number of Days	Number of animal X
1	2
5	2
10	4
15	8

Jane then made the following statements about living things.

A   Living things die.
B   Living things reproduce.
C   Living things need air, food and water to survive.

Which of the following characteristic(s) of living things can be seen in her observations of animal X?

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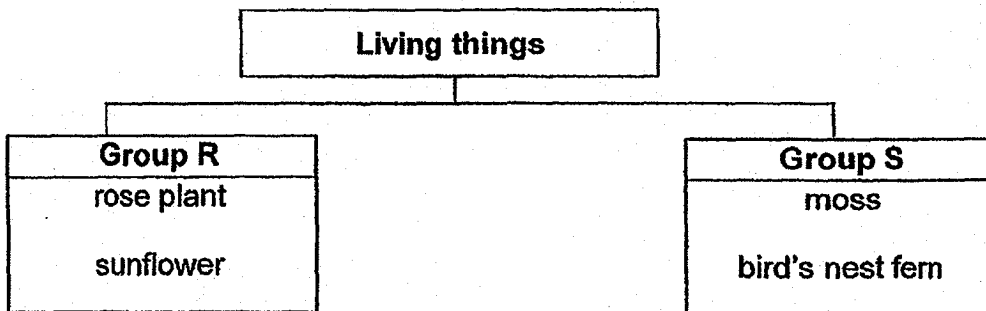(3)   B and C only   (4)   A, B and C only

3. Study the group of objects in the picture below.

Group Y	Group Z
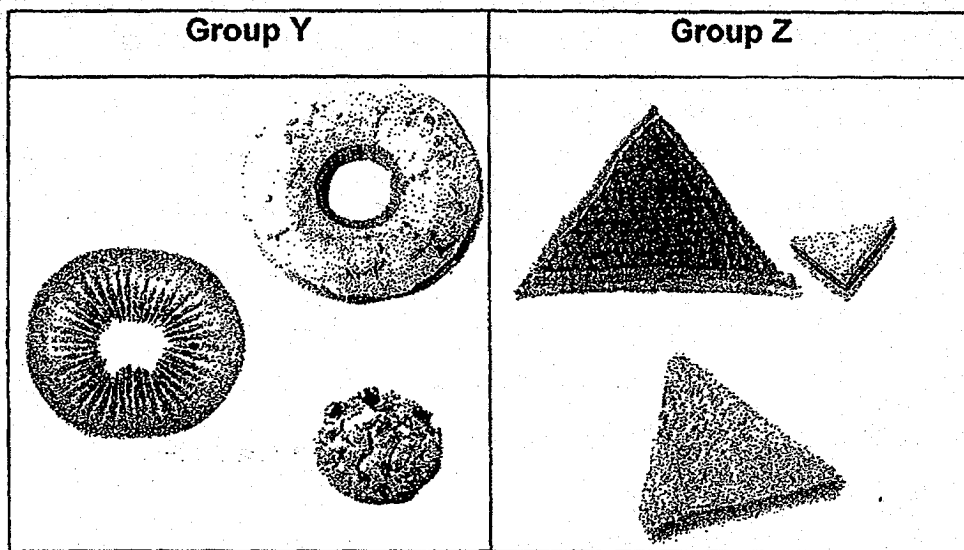
In what way had the objects been classified?

(1) size
(2) shape
(3) material
(4) thickness

4. Study the diagram below.

Living things

Group R	Group S
rose plant	moss
sunflower	bird's nest fern

Which one of the following correctly represents Group R and Group S?

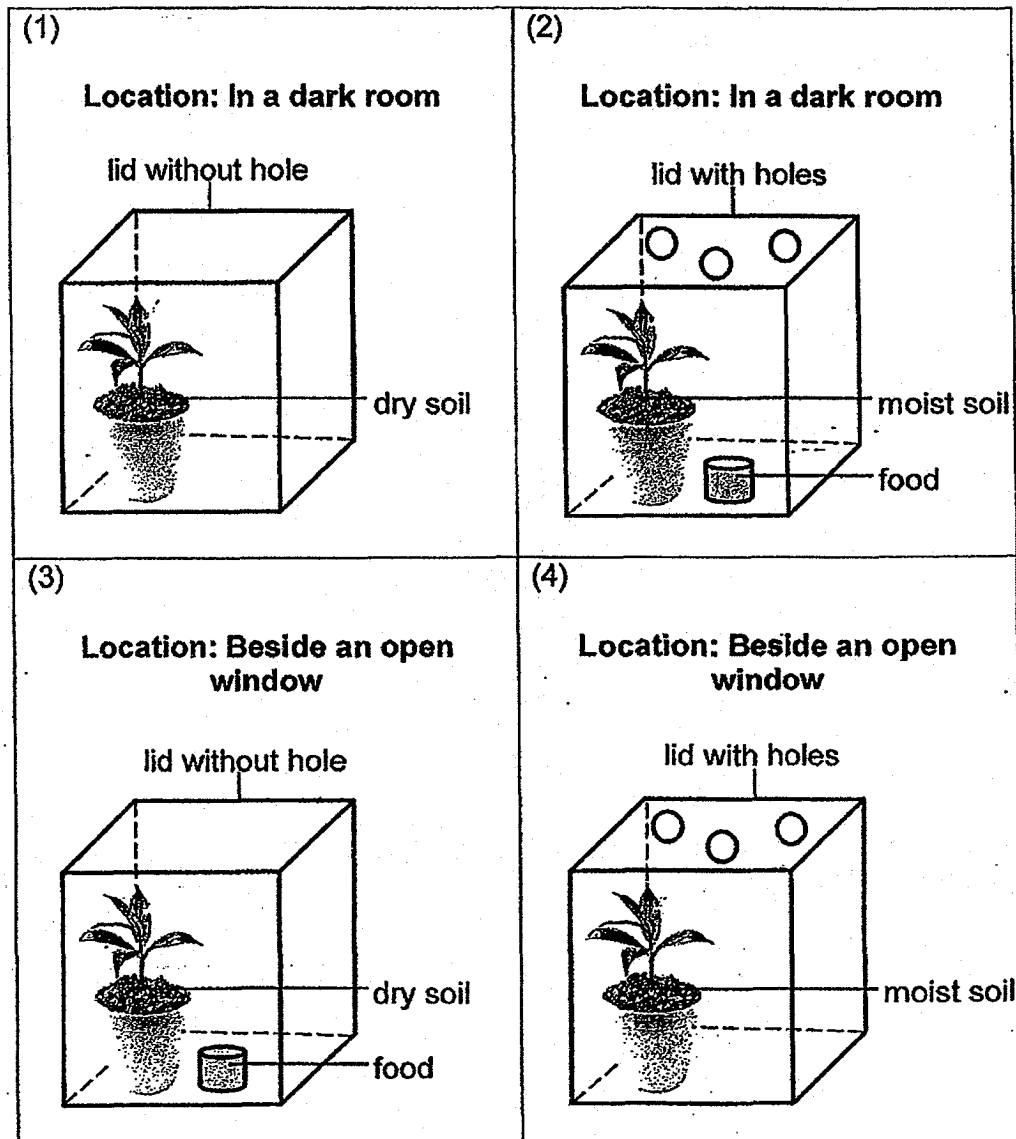|	Group R	Group S
(1)	Have leaves	Do not have leaves
(2)	Reproduce by seeds	Reproduce by spores
(3)	Do not have fruits	Have fruits
(4)	Make food on its own	Cannot make food on its own

5. Elizabeth made the following statements.

   A   All plants produce fruits.
   B   Plants grow on land only.
   C   Leaves are all oval in shape.
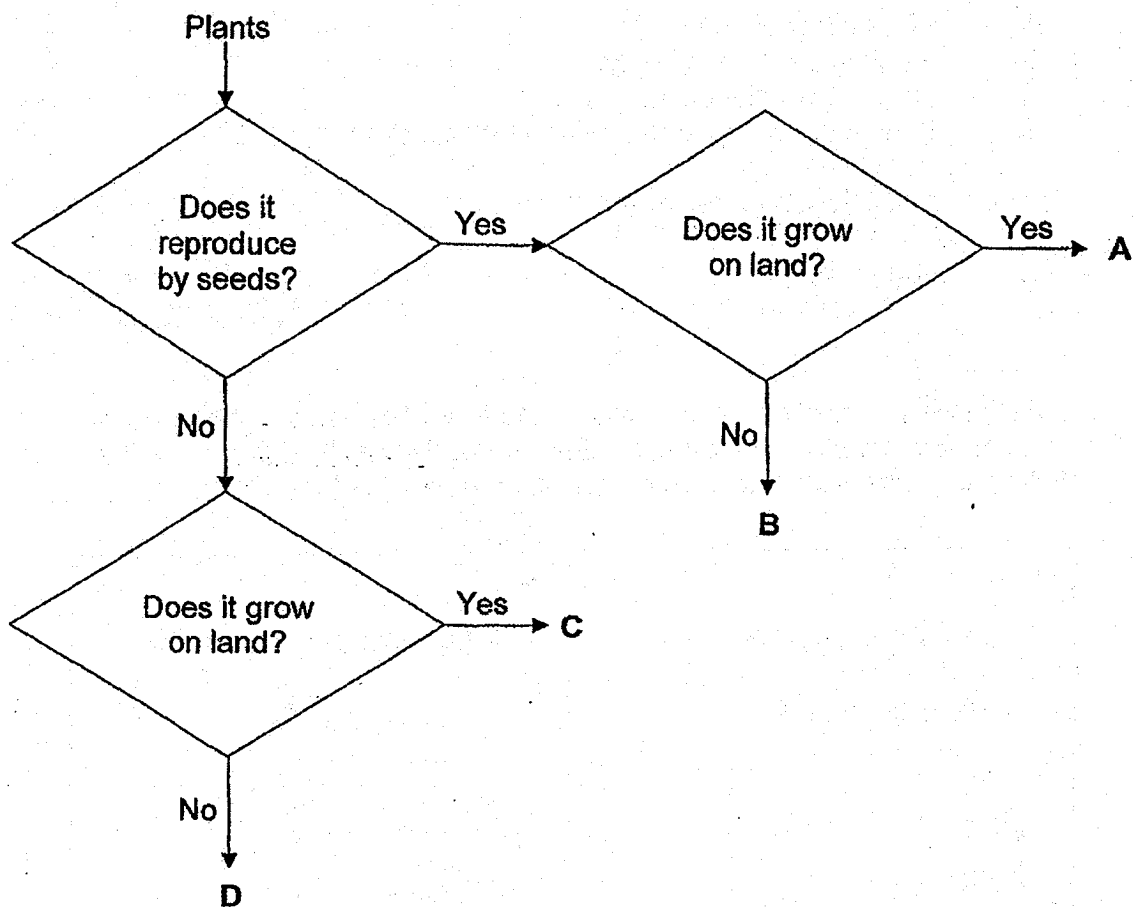   D   Some stems of plants are found underground.

   Which of the statements above are **incorrect**?

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

6. John placed 4 identical plants in 4 boxes that allow most light to pass through. He placed the plants in different conditions. Which one of the following plants would survive for the longest period of time?

(1)

Location: In a dark room

lid without hole

dry soil

(2)

Location: In a dark room

lid with holes

moist soil

food

(3)

Location: Beside an open window

lid without hole

dry soil

food

(4)

Location: Beside an open window

lid with holes

moist soil

7.   Study the flowchart below.

Plants

Does it reproduce by seeds? — Yes → Does it grow on land? — Yes → **A**

No ↓ (Does it reproduce by seeds?)

No ↓ (Does it grow on land?) → **B**
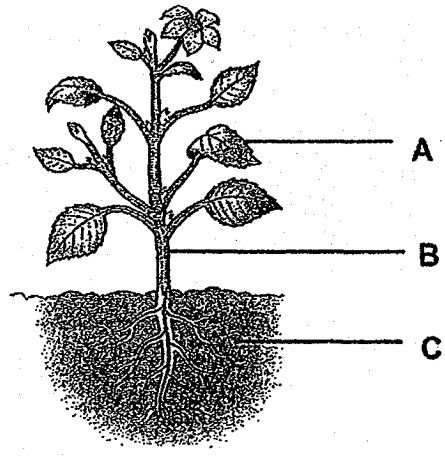
Does it grow on land? — Yes → **C**

No ↓ → **D**

Plant M

Based on the flowchart, which letter A, B, C or D would most likely represent Plant M?

(1)   A
(3)   C

(2)   B
(4)   D

8. Study the diagram below.
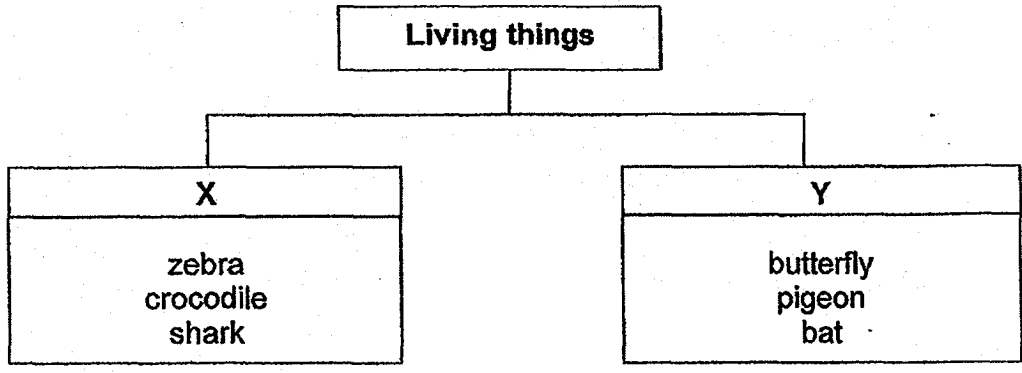

Which one of the following correctly shows the labelled parts of a plant?

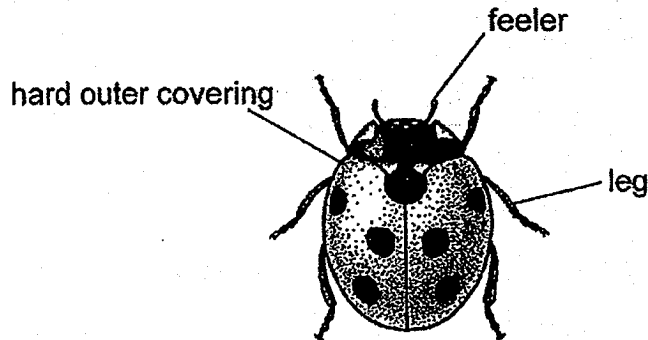|	A	B	C
(1)	stems	roots	flowers
(2)	flowers	leaves	stems
(3)	roots	flowers	leaves
(4)	leaves	stems	roots

9. Study the classification below.

Based on the classification diagram above, which one of the following headings best represents headings X and Y?

	X	Y
(1)	give birth to young	lay eggs
(2)	live in water	live on land
(3)	have scales	have hard outer covering
(4)	cannot fly	can fly

10. John found an unknown animal with its young near a pond. He observed that animal's characteristics and grouped them as a mammal.

Which one of the following characteristics could he have observed to group the animal as

(1) It has feathers.
(2) It is able to crawl and swim.
(3) It provides its young with milk.
(4) It moves on both land and in water.

11. Study the pictures below.

X   Y

Based only on the pictures of the animals above, which of the following statement(s) is/are correct?

A   Both have wings.
B   Both have same outer covering.
C   Both have same number of legs.

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

12. Study the picture of a beetle below.

The following statements were made about the insect.

A   It is an insect because it has feelers.
B   It is an insect because it has 3 pairs of legs.
C   It is an insect because it has a hard outer covering.
D   It is an insect because it is colourful and has many patterns.

Which of the statements above help to identify the beetle as an insect?

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

13. Ali was asked to compare an insect and a fish. He made the following statements.
Which one of the following states the difference between insects and fish?

	insect	fish
(1)	can swim	cannot swim
(2)	live in water	live on land
(3)	have hard outer covering	have scales
(4)	gives birth to young	lays eggs

The following table is used for questions 14 and 15.

characteristics	animal X	animal Y
It lays eggs	✓	
It has gills	✓	
It has scales	✓	
It lives in water	✓	✓

14. Hui Ling made the following statements about animals X and Y.

A   Both breathe using gills.
B   Both reproduce by the same way.
C   Both have the same outer covering.
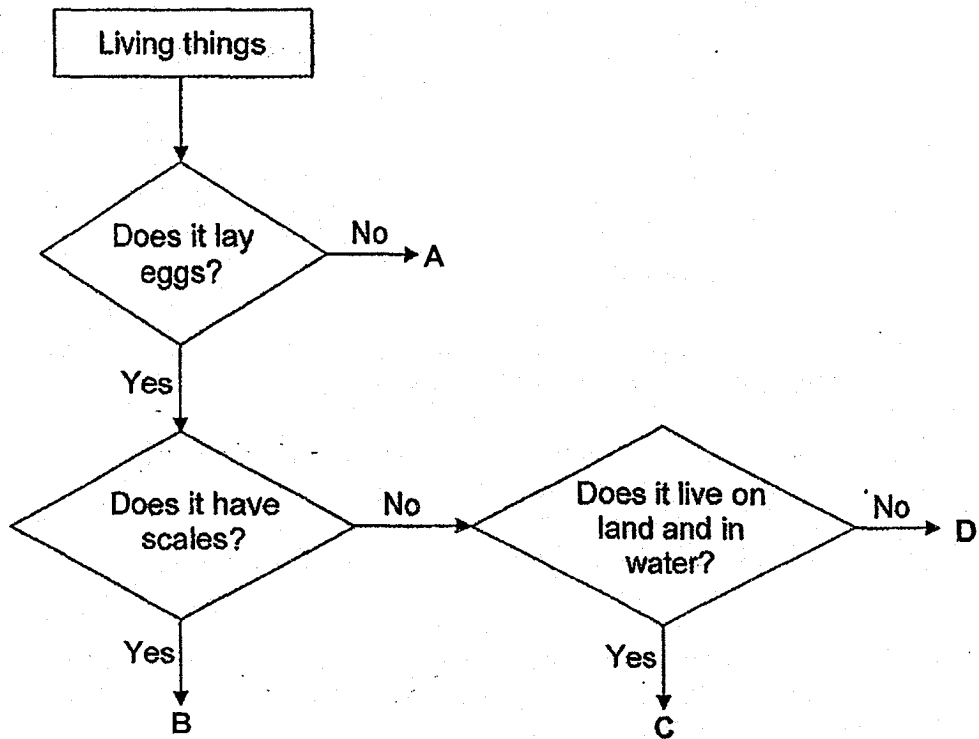
Which of the statement(s) above is/are **false**?

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

15. Which one of the following correctly represents the animal groups for X and Y?

	animal X	animal Y
(1)	fish	reptile
(2)	insect	reptile
(3)	fish	mammal
(4)	insect	mammal

16. Study the flowchart below.

Which one of the following animals represent animals A, B, C and D correctly?

	A	B	C	D
(1)	cat	goldfish	frog	parrot
(2)	parrot	goldfish	cat	lizard
(3)	cat	lizard	parrot	frog
(4)	lizard	cat	frog	goldfish

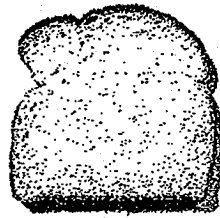17. Which one of the following statements is **correct**?

(1) All fungi are harmful.
(2) All bacteria are useful.
(3) Bacteria are microorganisms.
(4) Fungi can only feed on dead organisms.

18. Sammy conducted an experiment. She placed two identical slices of bread on the table as shown in the diagram below.
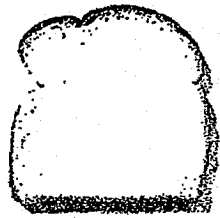

moist bread   dry bread

After 3 days, Sammy observed that black dots were growing on the moist bread. What was Sammy trying to find out?

(1)   To find out if fungi reproduce by spores.
(2)   To find out if fungi need moisture to grow.
(3)   To find out if fungi can make their own food.
(4)   To find out if fungi can feed on dead or living things.

19. Fabian wanted to select the most suitable material to build part X of the lorry. He conducted a few tests on materials A, B, C and D and recorded the results in the table below.
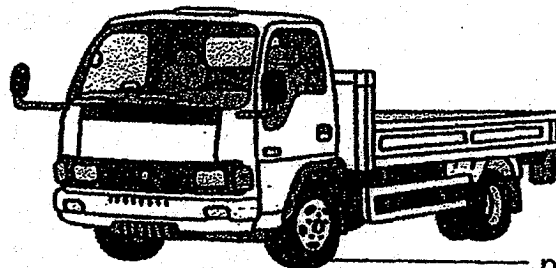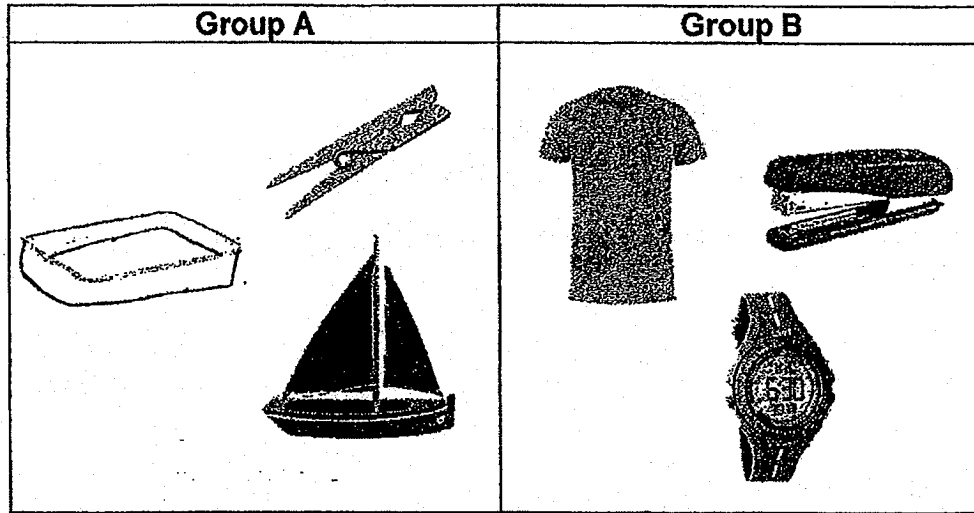

part X
lorry

Material	Strong	Flexible	Waterproof	Allow most light to pass through
A	✓			
B	✓		✓	
C			✓	✓
D	✓	✓	✓	

Which one of the following material is the most suitable to make part X?

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

12

20. Study the two groups of items below carefully.

Group A	Group B

Which of the following are suitable headings for the above items in Groups A and B?

	Group A	Group B
(1)	Float on water	Sink in water
(2)	Waterproof	Not waterproof
(3)	Can break easily when bent	Cannot break easily when bent
(4)	Allow light to pass through	Do not allow light to pass through

21. Rosnah wanted to use a material to make part Y of a display cabinet to store her trophies.

trophies ←

part Y of the display cabinet
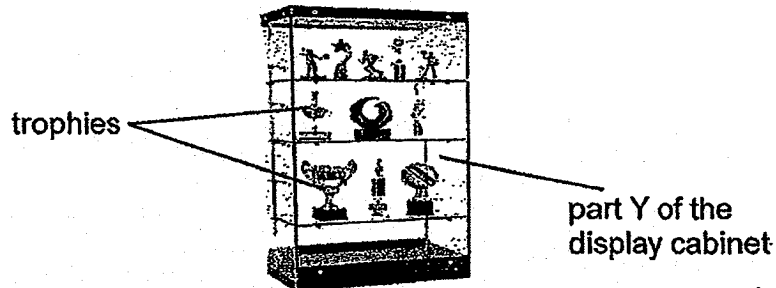
She listed a few properties below:

A   Flexibility
B   Transparency
C   Waterproof
D   Floats on water

Which of the above properties are important when choosing a material to make part Y of the display cabinet?

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

13

22. Caleb was given an unknown object. He recorded the following observations after conducting some tests.

- It does not absorb water.
- It breaks easily when dropped.
- It does not allow light to pass through.

Which one of the following is the most likely object to be made from the same material?

(1) dress
(3) plasticine

(2) metal spoon
(4) ceramic bowl

23. Study the flow chart below.

Start

P — No → Q — No → towel

Yes ↓ toothpick

Yes ↓ stapler
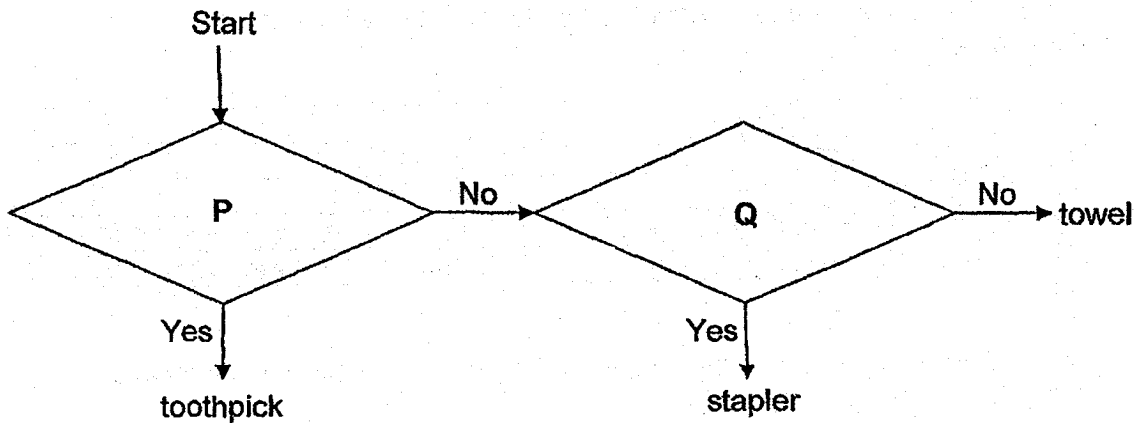
Which one of the following represents the missing questions, P and Q, in the flow chart?

	P	Q
(1)	Is it waterproof?	Does it allow light to pass through?
(2)	Is it strong?	Does it float on water?
(3)	Does it float on water?	Is it waterproof?
(4)	Does it allow light to pass through?	Is it strong?

24. Kavitha had 4 pieces of materials, S, T, U and V.

$$\text{S} \quad \text{T} \quad \text{U} \quad \text{V}$$
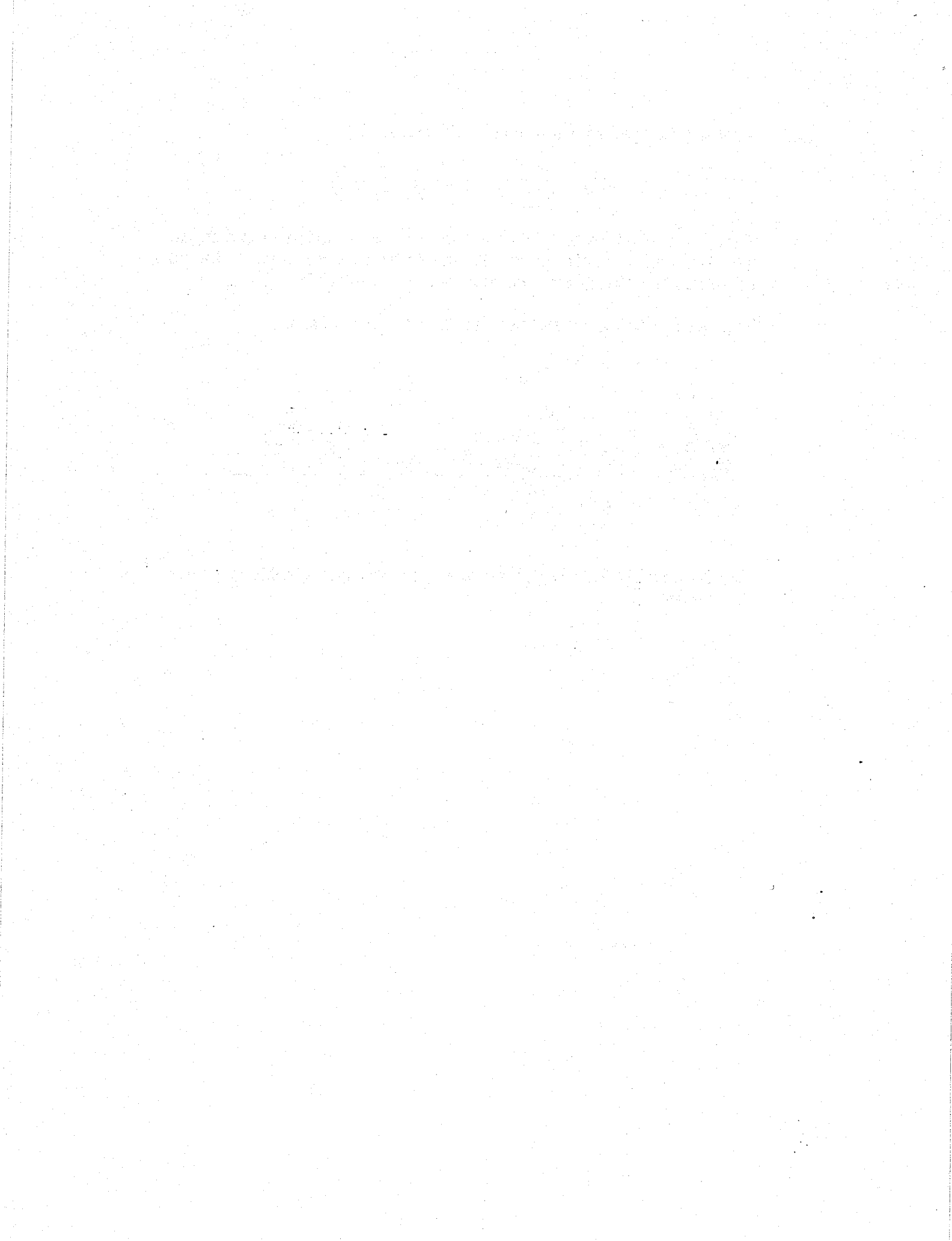
They are of similar size, thickness and mass. She placed each material into four different pails, each with the same amount of water for 10 minutes. After 10 minutes, she removed the 4 materials.

The diagram below shows the water level left in the pails.
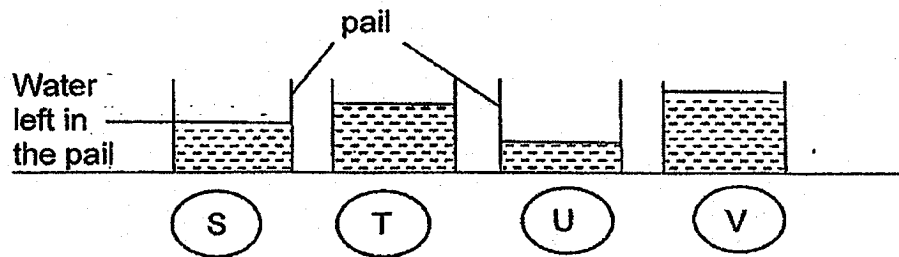
Which one of the following materials will be the most suitable to make a bath towel?

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

15

NANYANG PRIMARY SCHOOL

PRIMARY 3 SCIENCE

SEMESTRAL ASSESSMENT 1
2018

BOOKLET B

Date : 8 May 2018

Duration : 1 h 20 min

Name : _____ (   )

Class: Primary 3 (   )

Marks Scored:

Booklet A:	·	48
Booklet B :		32
Total :		80

Any query on marks awarded should be raised by _____17 May 2018_____.
We seek your understanding in this matter as any delay in the confirmation of
marks will lead to delays in the generation of results.

Parent's signature: ....

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
FOLLOW ALL INSTRUCTIONS CAREFULLY.

Booklet B consists of 11 printed pages including this cover page.

25. May Ling set up an experiment. She placed two identical grasshoppers in set-ups A and B, as shown in the diagram below.

set-up A   set-up B
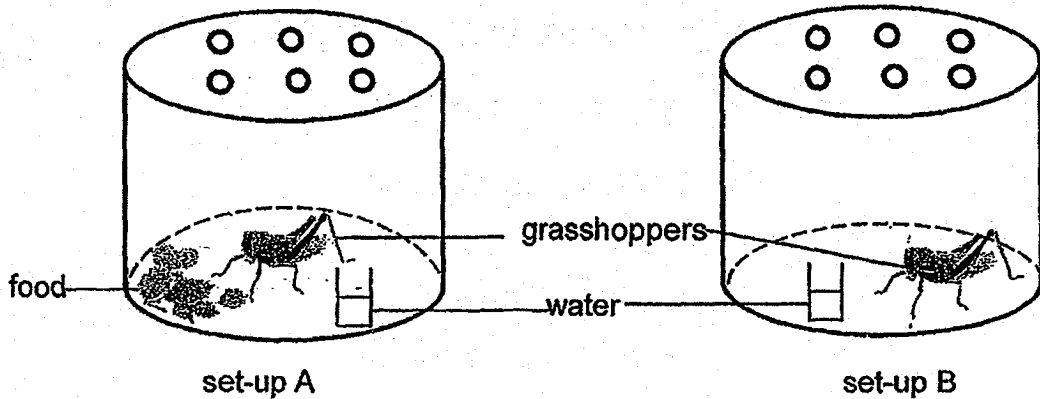
(a) After 1 week, the grasshopper in Set up B died. Based on the results, what can May Ling conclude about living things? [1]

_____

_____

(b) May Ling left the set-up without making any changes to the experiment. After 4 months, what will happen to the grasshopper in Set-up A? Explain your answer. [2]

_____

_____

26. The table below shows information on four living things, W, X, Y and Z, based on four different characteristics.

Characteristics	Living things			
	W	X	Y	Z
Grow in water			✓	
Flowering plant	✓		✓	
Make its own food	✓	✓	✓	
Reproduce by spores		✓		✓

(a) From the information given above, match the livings things to the correct letter. Each letter can be used once only. [2]

Living things	Letter
fern	
mushroom	
water lily	
mango plant	

(b) Based on the table, state one difference between living things W and Y. [1]

_____

_____

3

27. The flowchart below is used to classify 4 plants, A, B, C, D
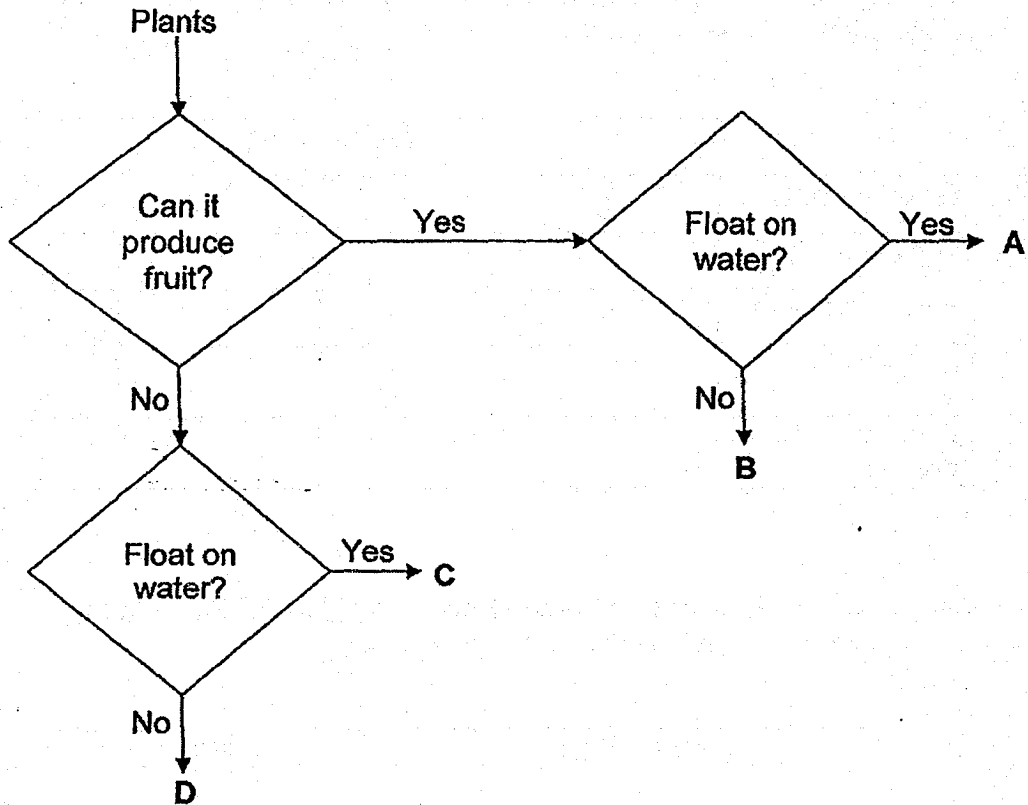
Plants

(a) Based on the chart, state a similarity between plant A and plant C. [1]

_____

(b) Based on the chart, state a difference between plant B and plant D.
[1]

_____

_____

(c) Kelly's mother said that Plant X reproduce by spores. Kelly said that Plant X can be classified together with plant B. Is the statement correct? Explain why. [2]
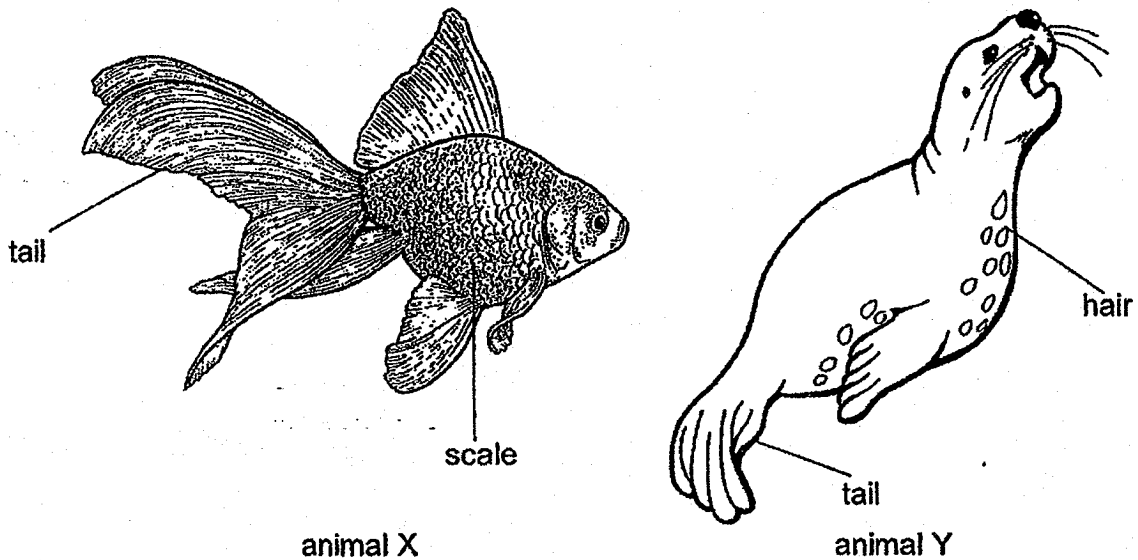
_____

_____

_____

4

28.   Study the animals below.

tail

scale

animal X

hair

tail

animal Y

(a)   Based only on the diagram above, state one similarity between the two animals. (Do not compare shape, size and colour)   [1]

_____

_____

(b)   Based only on the diagram above, state one difference in the characteristics between the two animals. (Do not compare shape, size and colour)   [1]

_____

_____

Ali wanted to group a dolphin in the same animal group as animal X because it lives in water, just like animal X.

(c)   Explain, using the characteristics of a dolphin and animal X, why he is wrong.   [1]

_____

_____

29. Study the flowchart below
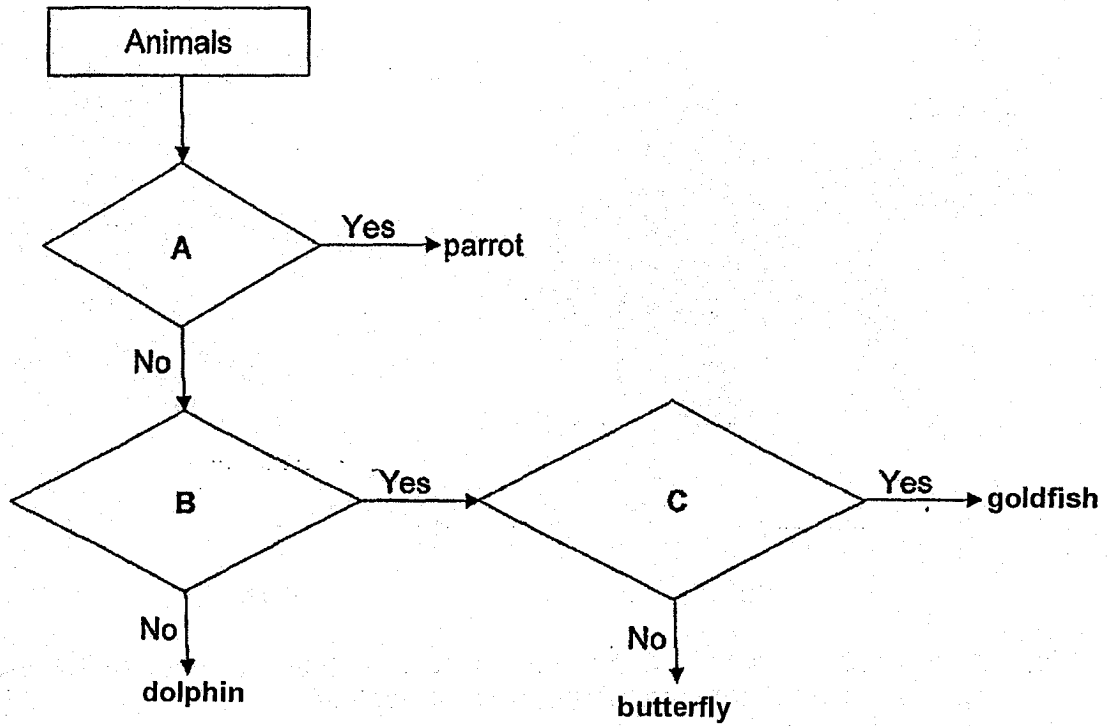
(a) Match the questions in the box below to the correct letters **A, B and C** in the flowchart above. [2]

Questions	A, B or C
Does it have scales?	
Does it have two legs?	
Does it lay eggs?	

(b) State one function of the outer covering of a parrot. [1]

_____

_____

30. Study the table below.

X	Y
bat	goldfish
elephant	duck
giraffe	crocodile

(a) Based on the characteristics of the animals, state a suitable heading for groups X and Y.   [1]

X: _____

Y: _____

(b) (i) Based on the characteristics of the animals, regroup **goldfish, crocodile and duck** into 2 groups.

    (ii) Ensure the headings for each group is clearly stated.

[2]

(c) The drawing below is a goldfish. Label the fin and gill cover of the fish.

[1]
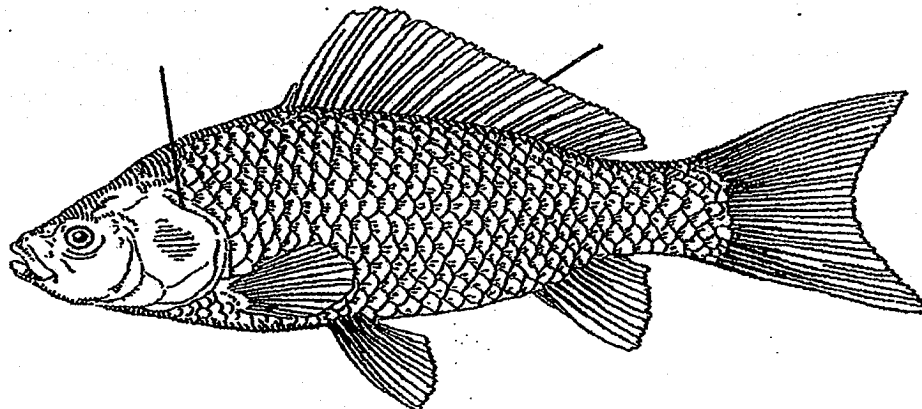
31. Chloe kept 4 identical slices of bread at different locations. She observed them over a period of 1 week and recorded her observations in the table below.

Conditions at the different locations	Day 0	Day 1	Day 4	Day 7
cool and wet			✓	✓
cool and dry				
warm and wet		✓	✓	✓
warm and dry				✓

Key:

✓: Mould observed

(a) Based on Chloe's result, which two conditions are the **least** suitable for mould to grow? [1]

_____

_____

(b) Which group of living things do moulds belong to? [1]

_____

(c) Chloe kept 2 identical oranges at two different locations, A and B. A tick (✓) shows the conditions of the locations.

Condition	Warm	Wet	Bright	Dark
Location A	✓	✓	✓	
Location B	✓	✓		✓

After 3 days, she observed mould growth on the oranges that were kept in Locations A and B. Based on her experiment, what can Chloe conclude about the presence of light in mould growth? [1]

_____

_____

8

32. The flow chart below shows the classification of some materials based on their properties.


```
            Start
              |
              v
      ┌───────────────┐                    ┌───────────────┐
      │    Is it      │       Yes          │               │   Yes   rubber
      │  waterproof?  │──────────────────> │  Is it flexible? │──────>  band
      └───────────────┘                    └───────────────┘
              │ No                                  │ No
              v                                     v
      ┌───────────────┐                             S
      │  Does it allow│       Yes
      │ most light to │──────────> R
      │ pass through? │
      └───────────────┘
              │ No
              v
           cotton
           shirt
```
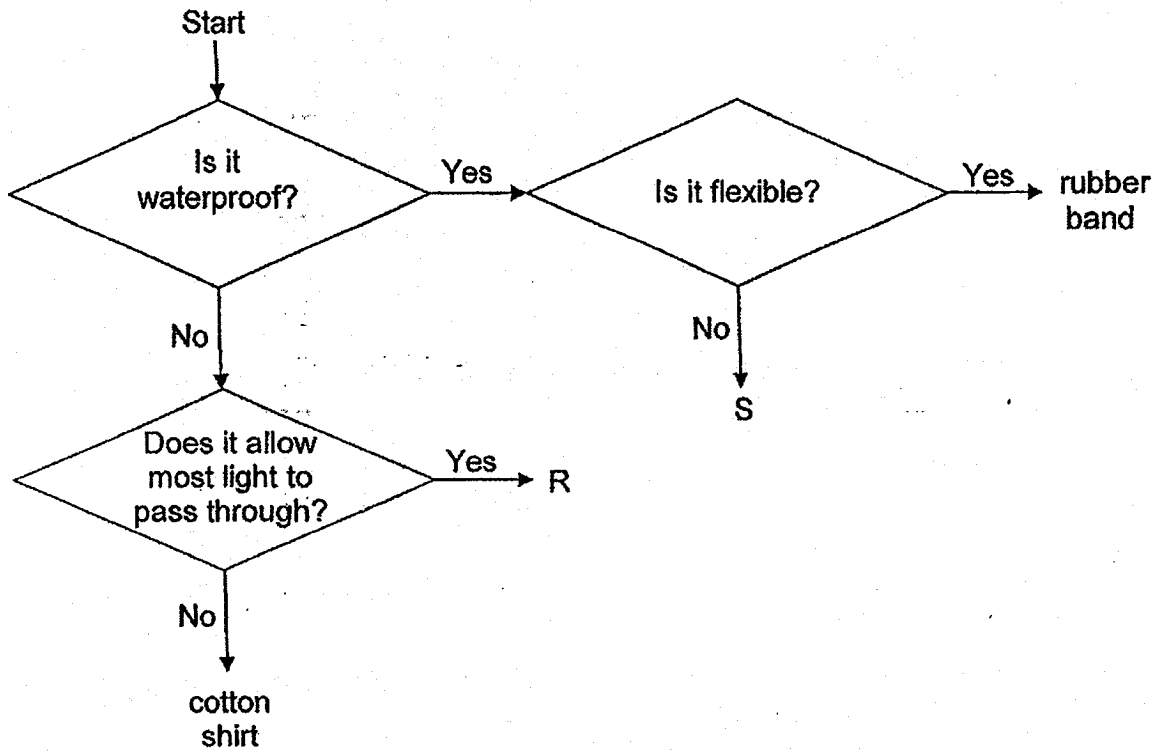
(a) Based on the above flow chart, state all the properties of Material S.   [1]

_____

_____

(b) Minyi stated that glass window is made of Material R.
    Is Minyi correct? Explain your answer.   [1]

_____

_____

9

33. Six objects had been classified in the chart as shown below.

```
                        ┌──────────────┐
                        │   Objects    │
                        └──────┬───────┘
                ┌──────────────┴──────────────┐
        ┌───────────────┐            ┌───────────────┐
        │   Group P     │            │   Group Q     │
        └───────┬───────┘            └───────┬───────┘
    ┌───────────────────┐        ┌───────────────────┐
    │   cotton shorts   │        │    steel cup      │
    │   wooden box      │        │   rubber glove    │
    │   woollen sweater │        │  clear plastic box│
    └───────────────────┘        └───────────────────┘
```
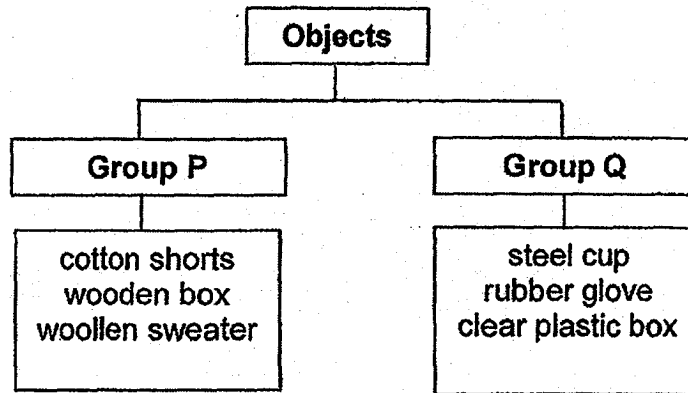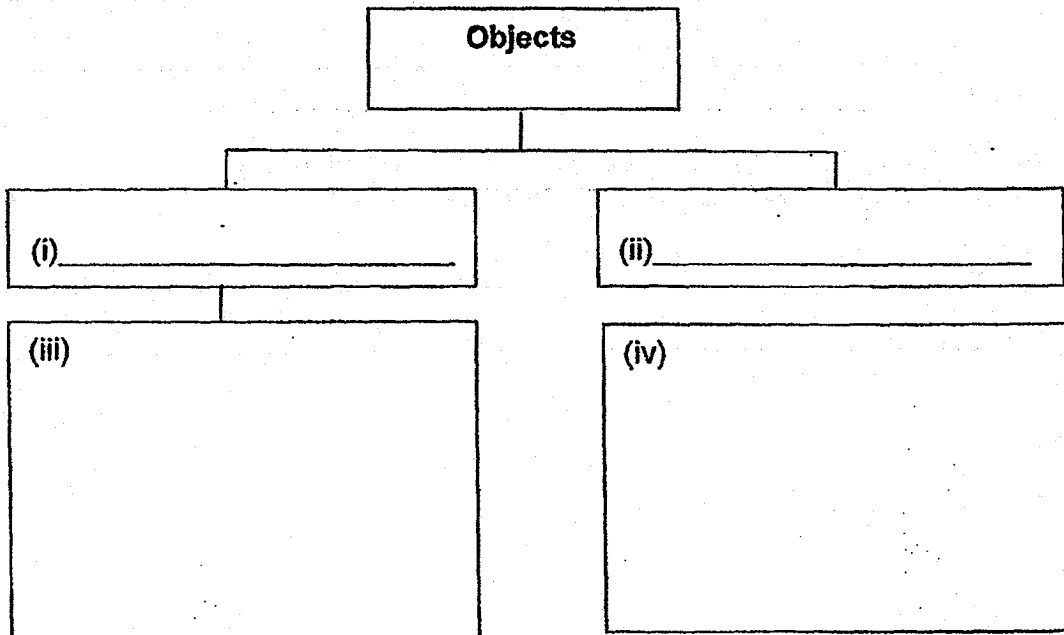
(a) Based on the properties of the materials, state a suitable heading that could represent Groups P and Q.   [1]

Group P: _____

Group Q: _____

(b) Based on the properties of the materials, reclassify the following objects given into two groups below.
Give a suitable heading for each group.   [2]

┌───┐
│ wooden box, woollen sweater, cotton shorts, rubber gloves │
└───┘

```
                    ┌──────────────┐
                    │   Objects    │
                    └──────┬───────┘
            ┌──────────────┴──────────────┐
    ┌───────────────┐            ┌───────────────┐
    │ (i)_____ │            │ (ii)_____ │
    └───────┬───────┘            └───────────────┘
    ┌───────────────┐            ┌───────────────┐
    │ (iii)         │            │ (iv)          │
    │               │            │               │
    │               │            │               │
    │               │            │               │
    └───────────────┘            └───────────────┘
```

34. A trampoline is made of a material that allows children to bounce on it. Megan wanted to find out which one of the three materials, E, F or G, is suitable to make part A of a trampoline as shown below. The materials are of the same thickness, size and weight. She placed loads of 1kg on each material until the material tore.

part A

trampoline
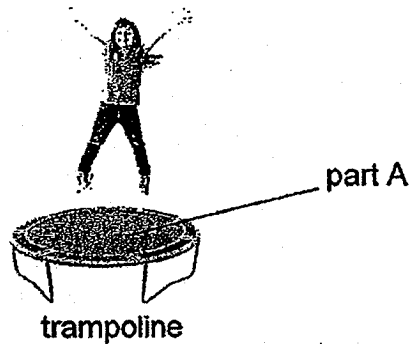
She recorded the results in the table below.

Material	E	F	G
Maximum number of loads to tear the material	70	50	12

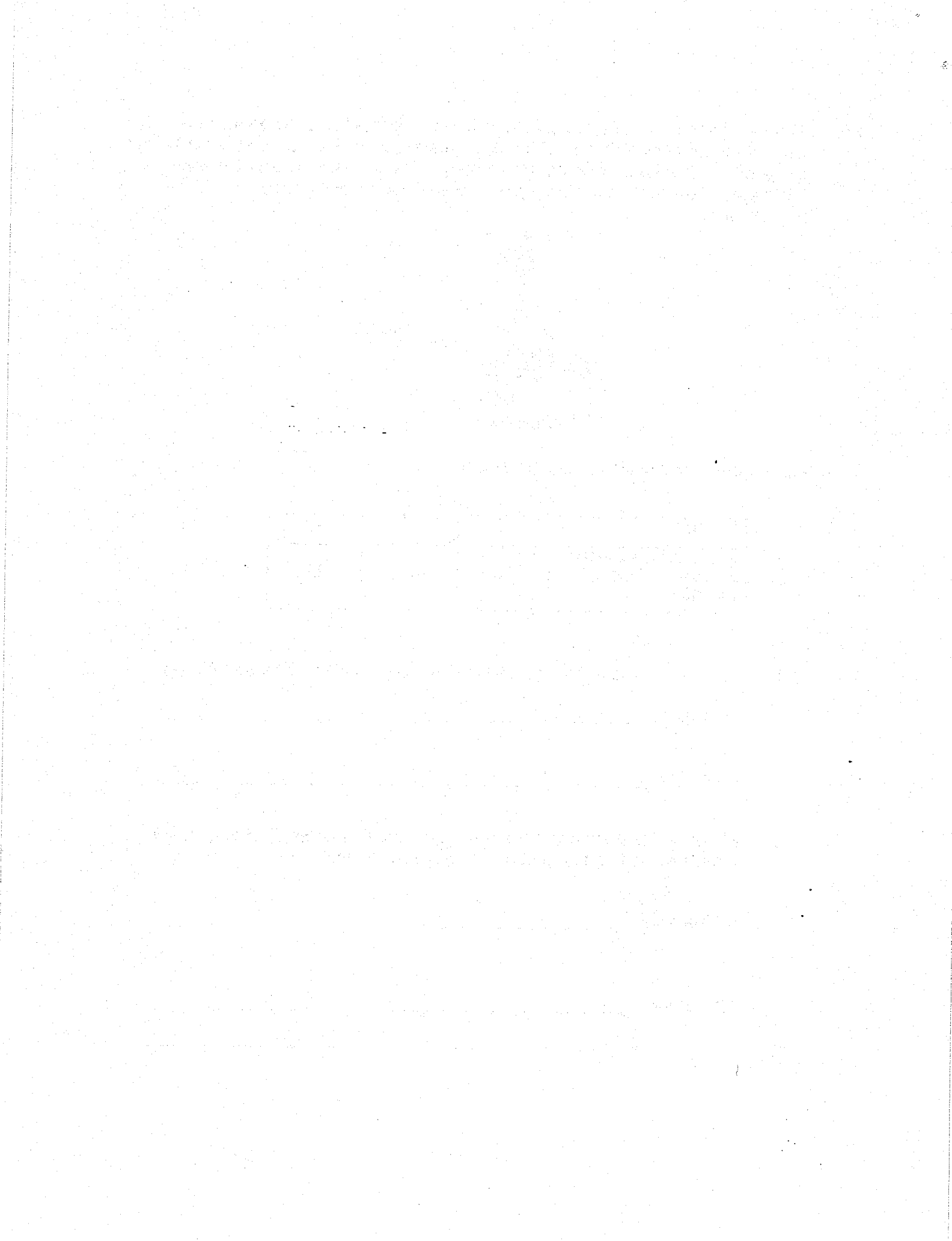(a) Name 2 properties of a material that are important to make part A.   [2]

Property 1: _____

Property 2: _____

(b) Based on the results in the above table, which material, E, F or G, is the most suitable to make part A? Explain your choice.   [2]

(i) Material: _____

(ii) Reason: _____

_____

Analysis of selected open-ended questions 2018 P3 Science SA1

1	3	6	4	11	1	16	1	21	2
2	3	7	1	12	4	17	3	22	4
3	2	8	4	13	3	18	2	23	3
4	2	9	4	14	4	19	4	24	3
5	3	10	3	15	3	20	1		

25. *Key concept : Pupils need to select the correct characteristics of living things based on the experiment.*

25a. Answer : Living things need food to survive.
Note : The difference in both setups is that the grasshopper in setup B had no food. The aim of the experiment will be to find out if food will affect the survival of the grasshopper. As air and water is not lacking in both setups, there should not be any mention of air and water. Pupils are to apply their concept to the experiment.

26b. *Key concept : Pupils to be able to gather information from given table.*
Answer : Plant Y grows in water but plant W **does not grow in water.**
Note : Use the wordings given in the table. Write "does not grow in water" instead of "grow on land".

27. *Key concept : Pupils to be able to gather information from flowchart*
Note : Use the wordings given in the flowchart.

27c. Answer : No, plant X reproduces from spores so it is a non-flowering plant that will not produce fruit but plant B produces fruit so it is a flowering plant that reproduce from seeds.
Note : This is a comparison question. Pupils need to compare the following.
Reproduce by spores(X) vs reproduce by seeds(B)
Non-flowering(X) vs flowering(B)
Do not produce fruits(X) vs produce fruits(B)

28c. Answer : Dolphin has hair but animal X has scales.
Or : Dolphin gives birth to young alive but animal X lay eggs.
Or : Dolphin breathes through lungs but animal X breathes through gills.
Incomplete answer : Dolphin has hair but animal X does not have hair.
Note : must compare the same characteristics for full mark to be awarded.

29c. Answer : Feathers keep the birds warm.
Or : Feathers help the birds to fly.
Or : Feathers protect the birds from injury.
Incomplete answer : Feathers protect the birds.
Unacceptable answer. Feathers make the birds lighter so they can fly. Feathers do not reduce the mass of the birds.

30. *Key Concept :*
  • *Reclassification means using a different characteristic to group the organisms listed. There must be examples in each grouping*
  • *Habitat is not characteristic of animals.*

30a. X : gives birth to young alive
Y : lay eggs

30b.

Outer-covering of scales	Outer-covering of feathers
goldfish	duck
crocodile	

Note : Characteristics for Heading in 30b must be different from 30a.
Same characteristics must be compared.

31. *Key concept :*
  • *Fungi needs warmth and moisture to grow well.*
  • *Light is not required for fungi to grow.*

31a. Answer : Cool and dry (base on observations given in the table, no fungi was observed for a week in the cool and dry conditions).

31c. Answer : Light does not affect the growth of mould. (mould was observed in both locations)

32b. Answer : No, glass is waterproof but material R is not waterproof.
Note : This is a comparison question. Properties of both material must be compared.

33a. Answer : Group P : not waterproof   vs Group Q : waterproof
Or :   able to absorb water vs   not able to absorb water
Note : compare the same characteristics.

33b *Key Concept :*

- *Reclassification means using a different characteristic to group the organisms listed. There must be examples in each grouping*

Flexible	Not flexible/ stiff
Woollen sweater Cotton shorts Rubber gloves	Wooden box

Or : grouped based on buoyancy
Unacceptable grouping : based on strength

Note : Natural and man-made, once alive and never alive are already not in the syllabus as it is not possible to make a clear classification based on these headings. In addition, these are not properties of materials which the pupils are to use to group the objects.

34a.   Answer : Strong, flexible, waterproof

34b.   Answer:

(i)   Material : **E** *(choice)*

(ii)   Reason : E can hold **the most** *(superlative)* **number of loads before tearing** *(data)* so it is the **strongest** *(superlative, explanation)* material.

Note : When question is asked in "superlative", in this case ...the **most** suitable material..., pupils have to answer using superlative terms. When data (graph, table) is given in the question stem, it has to be used to explain the answer. Expected answer will have 3 parts, choice, data and explanation.