AI TONG SCHOOL

2009 SEMESTRAL ASSESSMENT (1)

PRIMARY FIVE SCIENCE

DURATION : 1 HR 45 MIN

DATE: 18th MAY 2009

INSTRUCTIONS

Do not open the booklet until you are told to do so.
Follow all instructions.
Answer all questions.

Name : _____( )

Class : Primary_____

Parent's Signature : _____

Date : _____

MARKS	/ 100

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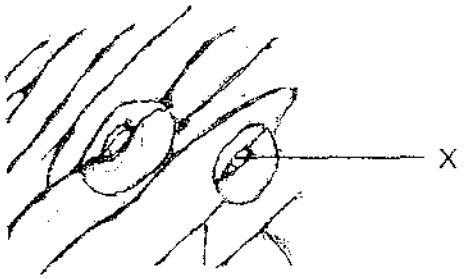
Section A (30 x 2 marks)

For each question from 1 to 30, 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.

1. Sara observed some plant cells under the microscope as shown below.



Which of the following is true of structure X?

A X allows gases to leave or enter the plant.
B X can be found on roots, stems and leaves.
C Without X, the plant cannot photosynthesize.
D Food, water and mineral salts can also enter through X.

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

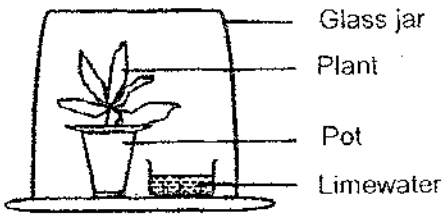
2. The table below shows a comparison between 2 different blood vessels.

	Blood vessels	
	X	**Y**
Thickness of blood vessels wall	Thick	Thin
Direction of blood flow	Away from heart	Towards heart

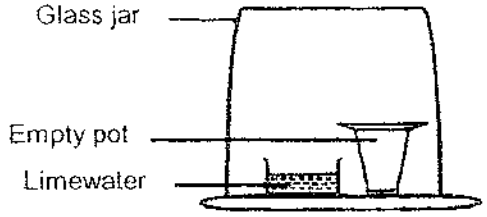
Which one of the following is the correct representation of X and Y?

	X	**Y**
(1)	vein	artery
(2)	artery	vein
(3)	blood capillary	artery
(4)	vein	blood capillary

3. Li Fen set up an experiment as shown below. She left both set-ups in a dark room for six hours. She observed that the colour of the limewater in both set-ups was clear before the experiment.



Set-up A



Set-up B

Which one of the following correctly shows Li Fen's observations after six hours?

	Appearance of limewater	
	Set-up A	**Set-up B**
(1)	Chalky	Clear
(2)	Chalky	Chalky
(3)	Clear	Clear
(4)	Clear	Chalky

4. Teng Kiat wanted to carry out an experiment to find out if plants can absorb water without roots.

Which of the following variables should he keep constant in order for the experiment to be a fair one?

A Type of plant
B Number of leaves
C Presence of roots
D Amount of water

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

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5. Which of the following systems work together to ensure the transport of gases?

A Digestive system
B Circulatory system
C Respiratory system

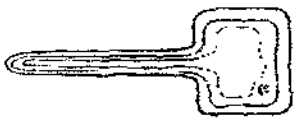
(1) A and B only
(2) B and C only
(3) A and C only
(4) A, B and C only

6. Which of the following about a cheek cell and a leaf cell are true?

	Cell parts	Cheek cell	Leaf cell
A	Nucleus	Present	Absent
B	Cell membrane	Present	Present
C	Cell wall	Absent	Present
D	Cytoplasm	Present	Present

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

7. The diagram below shows a root cell of a plant.

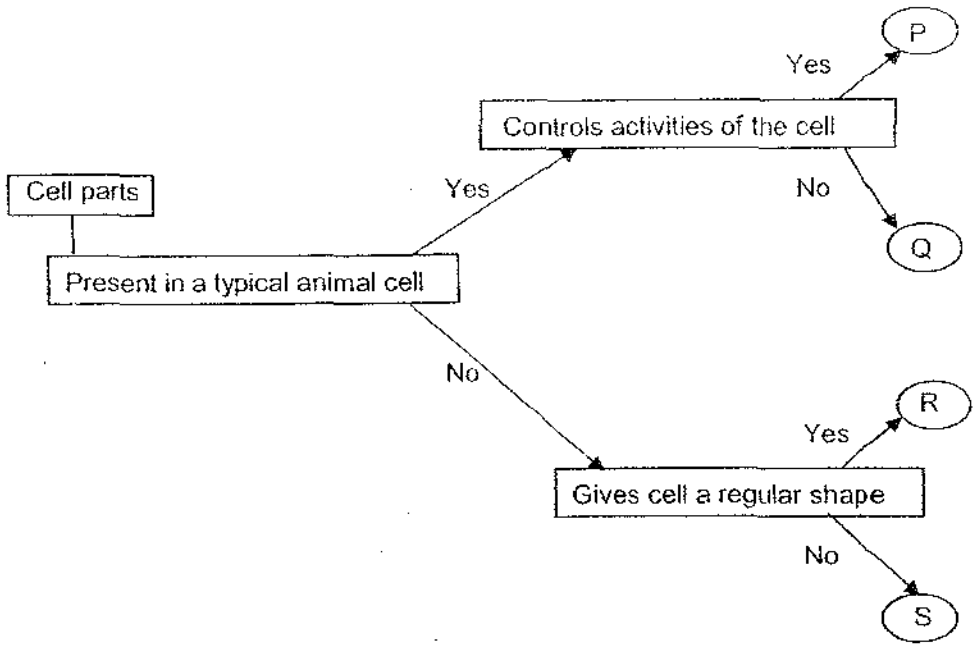


root cell

Which one of the following cell parts is absent in the root cell?

(1) nucleus
(2) cell wall
(3) cytoplasm
(4) chloroplast

8. The flow chart below shows how some cell parts can be classified according to their functions.



What are parts P, Q, R and S?

	P	Q	R	S
(1)	nucleus	cell wall	cytoplasm	chloroplasts
(2)	cell wall	cytoplasm	cell wall	nucleus
(3)	nucleus	cytoplasm	cell wall	chloroplasts
(4)	cytoplasm	chloroplasts	nucleus	cell wall

9. Which of following statements are **false**?

A Bacteria are made up of trillion of cells.
B A paramecium is a single-celled organism.
C A camel has many more cells than a hamster
D All the cells in a plant are of the same type.

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

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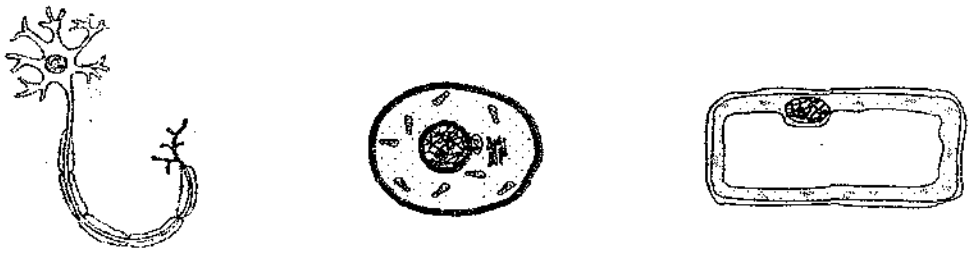
10. The nucleus is the largest part of a cell. A red blood cell does not have a nucleus because it _____.

(1) is a single-celled organism
(2) is the smallest cell in the body
(3) needs the space to transport gases
(4) allows more water to be transported

11. Shawn observed some cells under the microscope as shown below.



Which of the following conclusions that Shawn made about his observations above are correct?

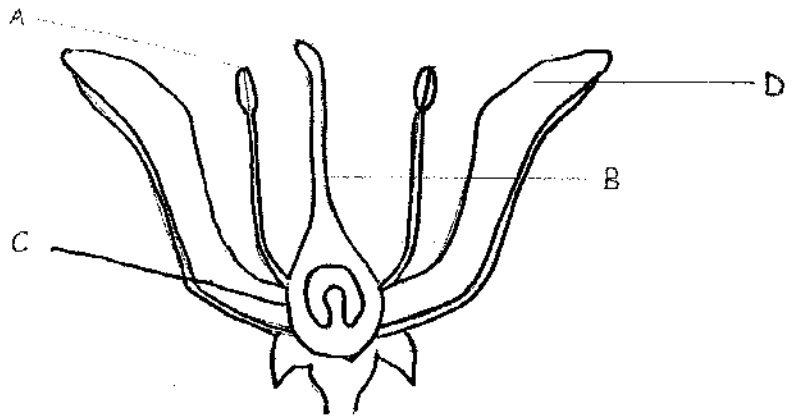
A There are two animal cells.
B One of the cells is paramecium.
C One of the cells can photosynthesize.
D All the cells perform the same functions.

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

12. Substance P has to pass through various parts of an onion cell before reaching the nucleus. Which of the following shows the correct order of movement of substance P?

(1) cell membrane, cytoplasm, cell wall
(2) cell membrane, cell wall, cytoplasm
(3) cell wall, cytoplasm, cell membrane
(4) cell wall, cell membrane, cytoplasm

13. The diagram below shows parts of a flower.



Which of the following shows the correct parts of the flower?

	A	B	C	D
(1)	Filament	Stigma	Ovary	Petal
(2)	Stigma	Style	Ovule	Leaf
(3)	Anther	Style	Ovary	Petal
(4)	Anther	Stigma	Ovary	Leaf

14. Which statement(s) about germination of a seed is/are **correct**?

A During germination, the seed needs air, sunlight, water, food and warmth.
B A seed does not need to make food.
C Water is needed for germination to occur.
D Fertiliser must be added to the seed for germination to take place.

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

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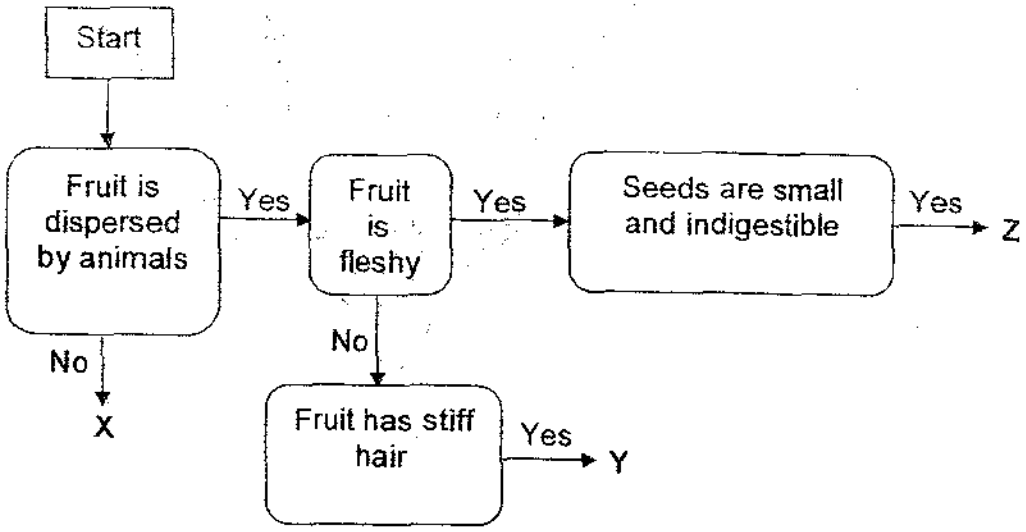
15. Study the flow chart below carefully.



Which of the following sets of fruits represents X, Y and Z respectively?

	X	Y	Z
(1)	Angsana	Coconut	Rubber
(2)	Pong Pong	Love grass	Jackfruit
(3)	Chilli	Kiwi fruit	Watermelon
(4)	Balsam	Mimosa	Guava

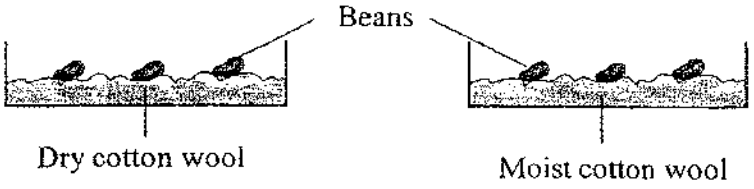
16. Flowering plants may be pollinated by insects or wind. Which of the following features are important to a flower pollinated by wind?

A Nectar is present.
B Petals are brightly coloured.
C Stigmas are long and sticky.
D Long filaments with anthers hanging out of flowers.

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

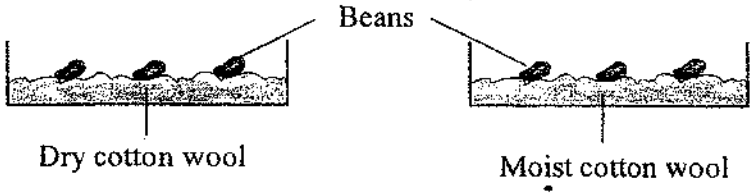
17. John wants to investigate whether seeds need warmth to germinate. Which one of the following set-ups should he use?

(1)



Both containers of seeds are placed on a table top in the room.

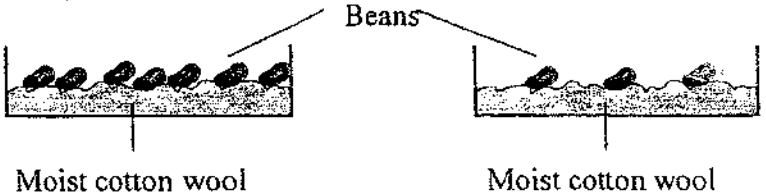
(2)



Placed in a refrigerator

Placed on a table top in the room

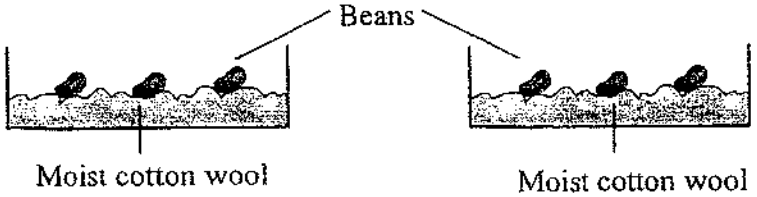
(3)



Placed in a refrigerator

Placed on a table top in the room

(4)



Placed in a refrigerator

Placed on a table top in the room

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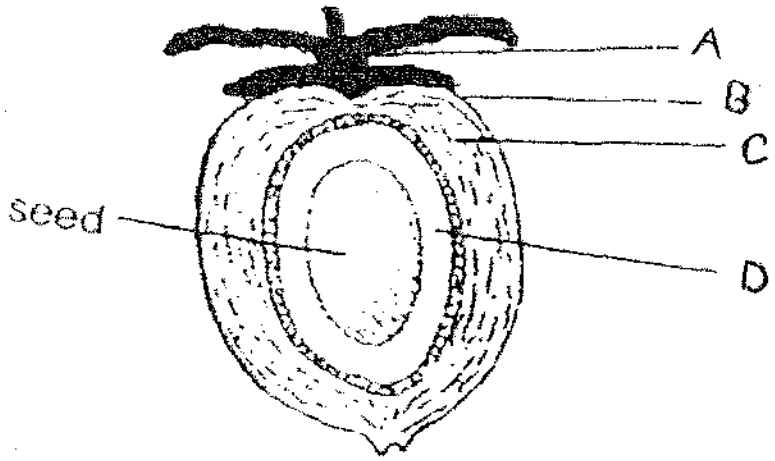
18. The diagram below shows a coconut fruit.



Which part(s) A, B, C or D enable(s) the coconut seed to be dispersed?

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

19. Study the table below carefully.

Group A	Group B
Tomato	Maize
Morning glory	Papaya
Hibiscus	Cucumber

How are the plants likely to be grouped?

	Group A	Group B
(1)	Flowers	Fruits
(2)	Reproduce by spores	Reproduce by seeds
(3)	Has many seeds in each fruit	Has only one seed in each fruit
(4)	Male and female flower parts are found in one flower	Male and female parts are found in separate flowers

20. A beaker containing 100ml of water was heated till it boiled at 100°C. Which one of the following shows the closest volume and temperature of the water in the beaker for a further 10 minutes after it had reached boiling point?

	Volume of water (ml)	Temperature of water (°C)
(1)	90	100
(2)	90	110
(3)	100	100
(4)	100	110

21. Which property of water enables the water cycle to take place?

(1) It occupies space.
(2) It has mass.
(3) It has volume.
(4) It can change its state.

22. In the morning, Mary noticed there were water droplets on the exterior of her car even though it did not rain the night before.

Which one of the following statements explains what had happened?

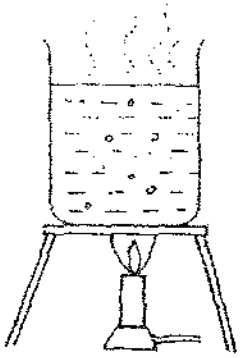
(1) Water vapour on the car condensed from the air.
(2) Water vapour from the warmer air condensed on the cooler car.
(3) Water droplets on the warm car evaporated into the air.
(4) Water droplets from the warm air evaporated on the car.

23. Which of the following actions can cause water pollution?

A Dumping of litter on beaches
B Release of harmful chemicals into the sea
C Repair water leakage along pipes and taps
D Discharge of untreated waste water from homes and buildings into rivers

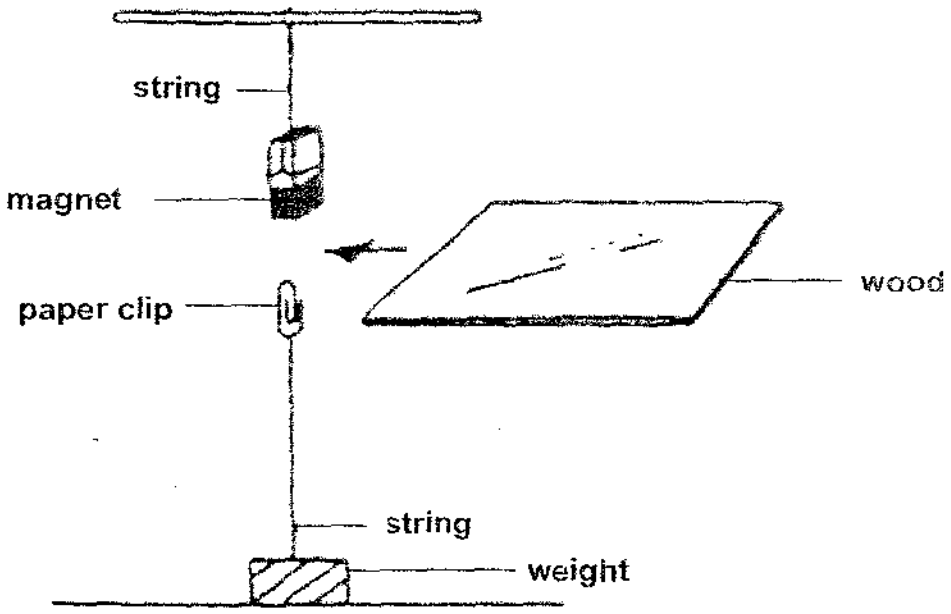
(1) A and C only
(2) B and C only
(3) B and D only
(4) A, B and D only

24. The diagram below shows a beaker of water. When the water was being heated, the temperature shown on the data-logger increased. However, once it reached 100°C, the temperature of the water remained constant even when it was heated continually. Why was that so?



(1) The temperature of the water was increasing but the data-logger was faulty.
(2) The heat generated was used to change the water to steam.
(3) The heat generated had escaped into the surroundings
(4) The heat generated was absorbed by the beaker.

25. Justin hung a bar magnet above a paper clip which had been tied to a weight by a string. The magnet pulled the paper clip up.



When he placed a thin piece of wood between the magnet and the clip, the clip remained where it was. Next he replaced the wood with material P but this time the paper clip dropped down. What could material P be?

(1) Glass
(2) Nickel
(3) Paper
(4) Copper

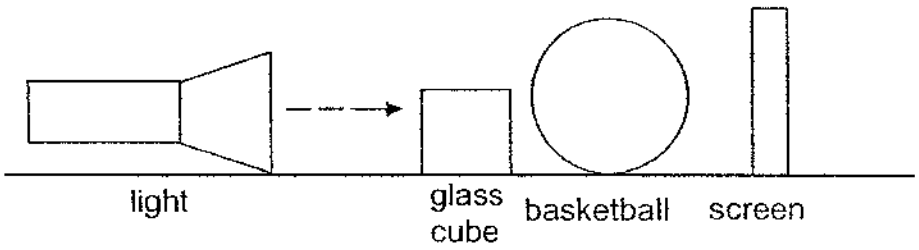
26. Rachel found 4 objects and wanted to test if they are magnets. She bought a magnet from the school bookshop and placed it next to one end of each of the objects. The following table shows what she observed.

Object	Observation
A	No reaction
B	Repels
C	Attracts
D	Spins and stops

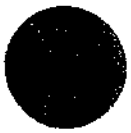
Which one of the following objects is **definitely** a magnet?

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

27. John placed a basketball and a glass cube as shown in the diagram below and shone light on the two objects. The shadow produced was captured on the screen.

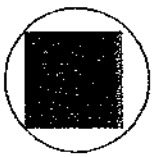


Which one of the following shadows would John see on the screen?

(1) 

(2) 

(3) 

(4) 

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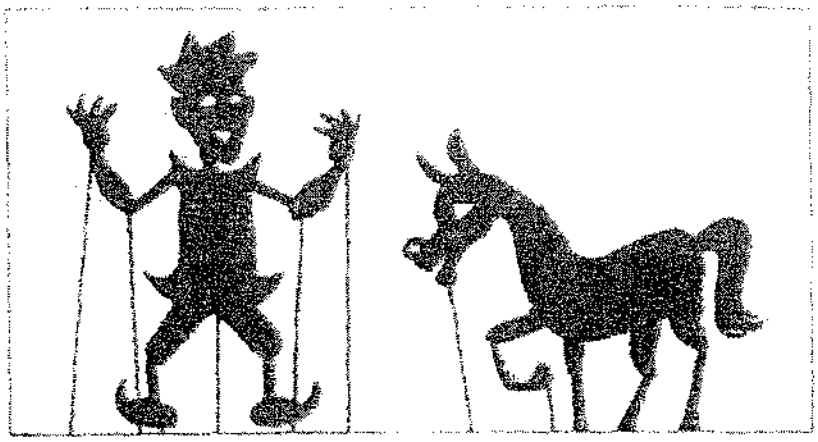
28. Benny watched a *wayang kulit* performance during his holidays. He could see only the dark shadows of the puppets on a cloth screen.



Which one of the following statements best explains how the dark shadows are formed?

(1) The puppets are too colourful so their shadows are dark.
(2) The puppets are dull in colour so they form dark shadows.
(3) Light shining on the puppets casts their shadows on the screen.
(4) Light shining in front of the screen makes the puppets appear dark.

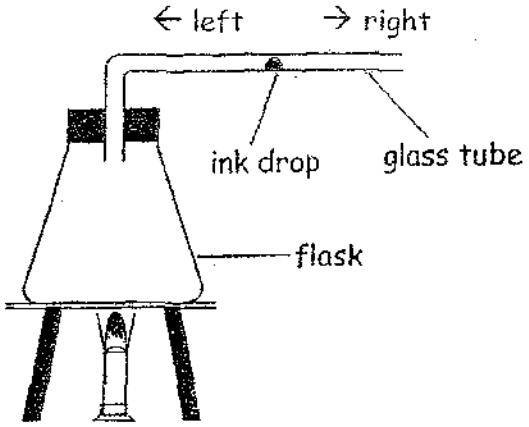
29. During an experiment, a pupil was told to hold onto a spoon that was placed in a bowl while hot water was being poured into it until the heat was unbearable. The length of time he held onto the spoon was measured. The experiment was repeated three times with the pupil holding onto three spoons made of different materials but of similar size. The table below shows the average time the pupil held onto his spoon.

Type of spoon	Time spoon was held (s)
S	12
T	did not let go
U	4
V	31

From the above experiment, which is the best conductor of heat?

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

30. An empty flask is heated as shown below.



After heating for about 6 minutes, the ink drop will _____.

(1) enter the flask
(2) remain in its original position
(3) move to the right of the glass tube
(4) move to the left of the glass tube

3/5

Name: _____ ( )
Class P5 ( )

Section B: 40 marks
Read the questions carefully and write down your answers in the spaces provided.

31. The table below shows the pulse rate of 3 types of animals at rest.

Animals	Mass (g)	Pulse rate (beats/min)
P	300000	85
Q	25	670
R	2000	205

(a) Based on the information in the table above, what is the relationship between the mass of the animals and their pulse rates? [1]

_____

_____

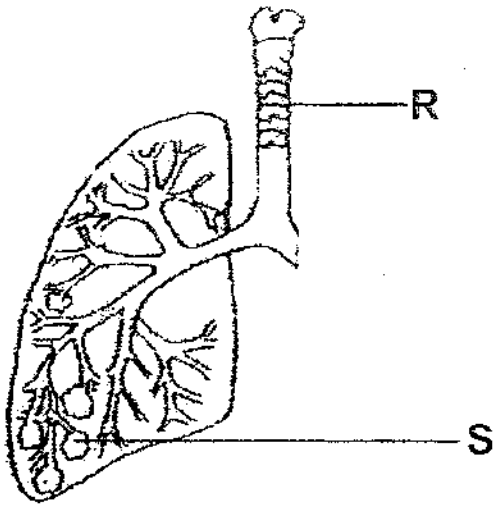
(b) If animal Q is a fast moving animal, explain why it has a very high pulse rate at rest [2]

_____

_____

3

32. The diagram below shows part of the human lungs.



(a) Name the part labelled R and S. [1]

R: _____

S: _____

(b) Tuberculosis is a disease that attacks the lungs. Based on the function of the lungs, explain what a person who suffers from tuberculosis cannot do. [1]

_____

_____

2

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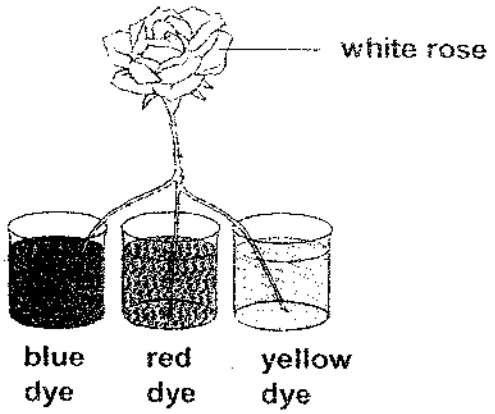
33. Henry cut the stem of a stalk of white rose into three equal portions as shown in the diagram below. Each portion of the stem was put into a separate container containing blue, red and yellow dye.



(a) What happened to the white rose after 24 hours? [1]

_____

_____

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

_____

_____

34. Draw a plant cell in the box below. Label the parts: nucleus, cytoplasm, cell wall, cell membrane. [3]

A plant cell

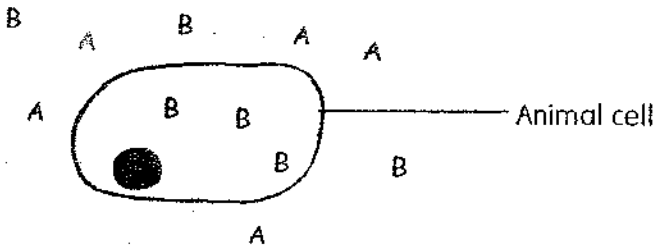
5

35. Classify the following organisms by writing them in the table below. [3]

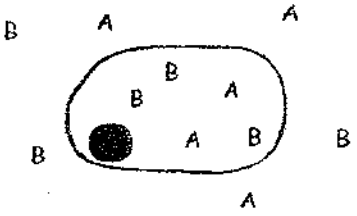
whale	paramecium	bacteria
fern	yeast	moss

Single-celled organisms	Multi-celled organisms

36. During an experiment, Terri placed an intact animal cell in a solution containing substances A and B. The diagram below shows what she observed after several minutes.



Next, she removed one of the cell parts of the animal cell before placing it in the same solution. The following diagram shows what Terri observed.



(a) What is the cell part that Terri has removed in the experiment? [1]

_____

(b) What conclusion can Terri make about the function of the cell part in (a)? [1]

_____

_____

5

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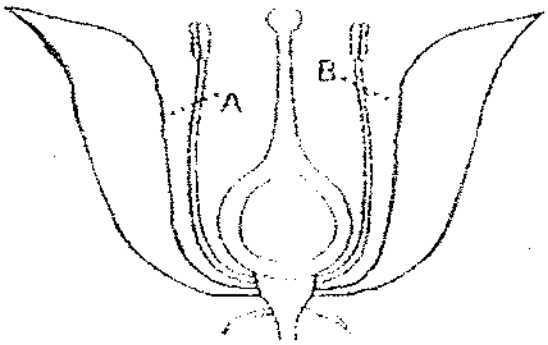
37. Felicia observed that more chloroplasts can be found on the upper surface of a leaf than the lower surface.

(a) Give an explanation for her observation. [1]

(b) Bracket fungus feeds on decaying matter. Explain why this is so. [1]

38. Jamie cut away 2 parts, A and B, of the flower shown below and observed it for a week. At the end of the week, she was surprised to see a fruit developing from the flower.

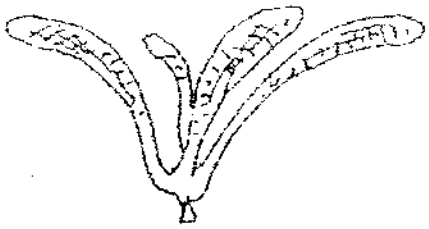


(a) What was Jamie trying to find out when she cut the 2 parts, A and B, of the flower? [1]

(b) Explain how the fruit could have developed from the flower after Jamie had cut the flower at parts A and B. [1]

4

39. Look at the fruit shown below carefully.



(a) How is this seed dispersed? Explain how this is done [2]

(b) Give an example of a plant which disperses its seeds in the same way as the fruit shown above. [1]

(c) Why is there a need for seed dispersal? [2]

40. Joseph's Science teacher brought a fruit to the class and told the pupils that it was dispersed by water. What could Joseph and his classmates do to confirm this? [1]

6

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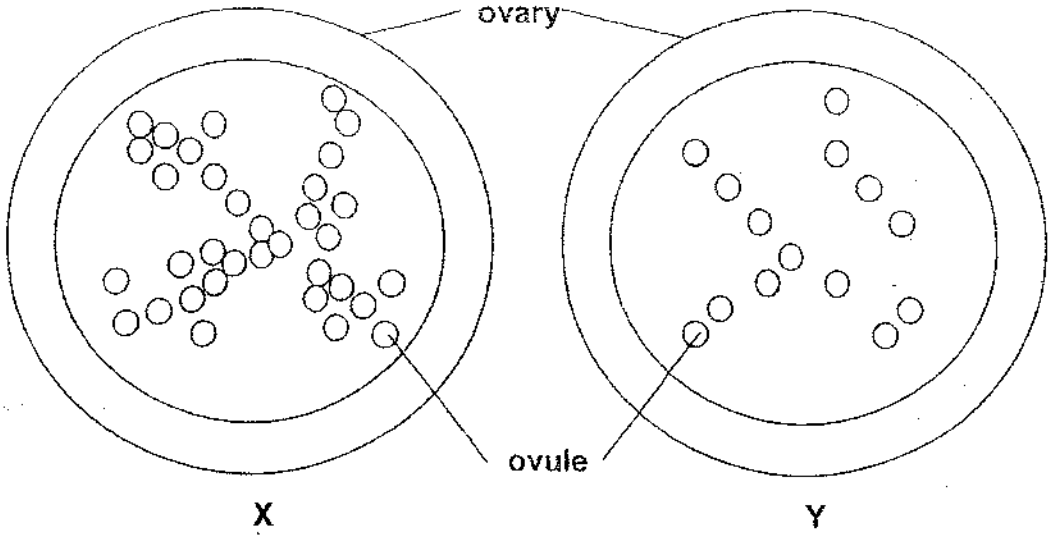
41. The diagram below shows the cross sections of the ovaries of two flowers, X and Y.



(a) Study the diagram of both ovaries, X and Y, and compare the fruits that will develop from both ovaries. [1]

(b) Give an example of a fruit that will develop from ovary X. [1]

42. Mary put a few ice cubes into a glass of lukewarm milk. The ice-cubes melted after ten minutes.

(a) What is another change that she would **observe**? [1]

(b) Explain why this change took place. [2]

5

43. Peter conducted an experiment for 3 hours to find out if the area of exposed surface would affect the rate of evaporation. He used the following items in his experiment.

- 2 identical handkerchiefs
- 2 beakers of 100ml of water each

(a) Write down the procedure and conclusion for the above experiment. [2]

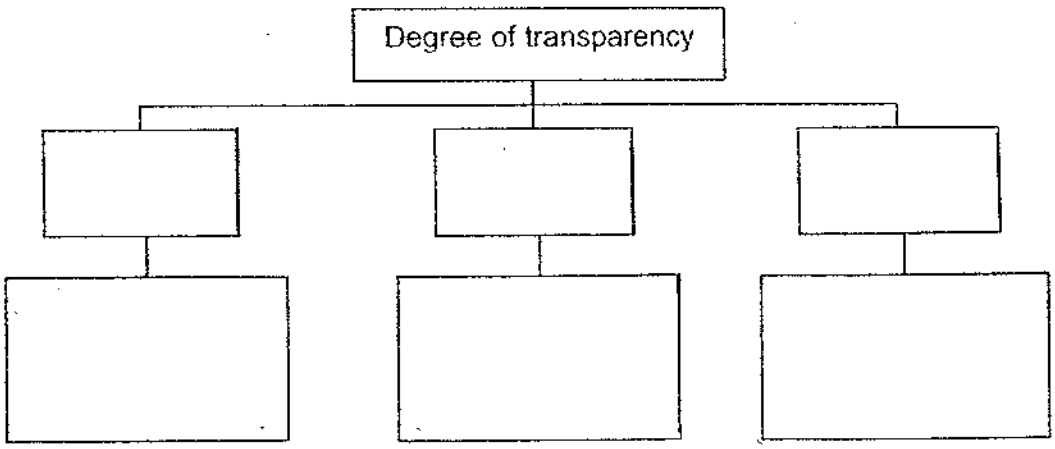
(b) Name two other factors which would affect the rate of evaporation

(i) _____

(ii) _____

44. Classify the 6 objects below into 3 correct groups according to their degree of transparency. Give each group an appropriate heading. [3]

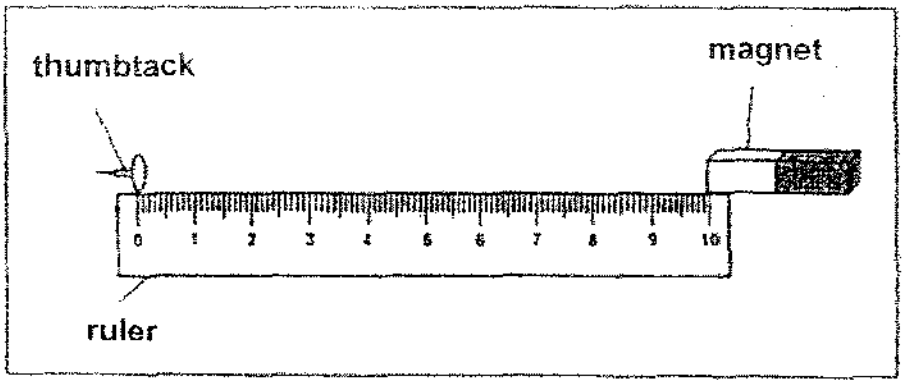
magnifying glass	frosted glass	mirror	tap water	story book	tracing paper



6

5A3

45. The "pulling" distance of a magnet is the furthest distance from which it is able to attract a magnetic object. Jerry carried out an investigation to find out the "pulling" distance of 3 different types of magnets.



He recorded the "pulling" distance of the different magnets in the table below.

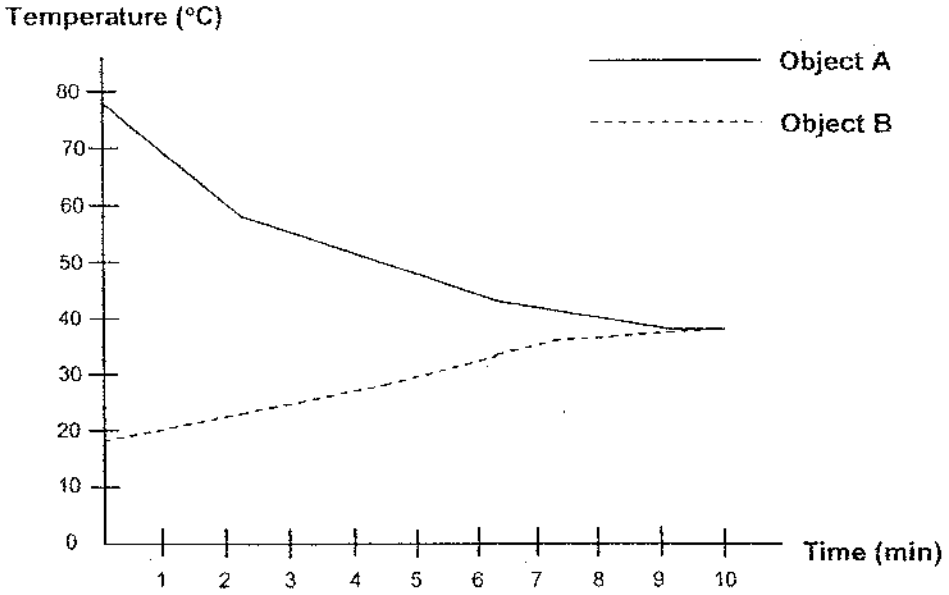
Magnet	"Pulling" Distance (cm)
Bar Magnet	2.8
Ring Magnet	0.6
U-shaped Magnet	1.7

(a) List the magnets according to their strengths, from the weakest to the strongest. [1]

(b) State the relationship between the strength of the magnetic force and the "pulling" distance of the magnets. [1]

2

46. The graph below shows the changes in temperature of objects A and B when placed together at room temperature.



(a) Describe the heat transfer between Objects A and B based on the graph above. [1]

(b) Give a reason for your answer in (a). [1]

2

ANSWER SHEET

EXAM PAPER 2009

SCHOOL : AITONG PRIMARY SCHOOL
SUBJECT : PRIMARY 5 SCIENCE

TERM : SA 1

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
1	2	1	3	2	4	4	3	2	1	2	4	3	1	4	2	4

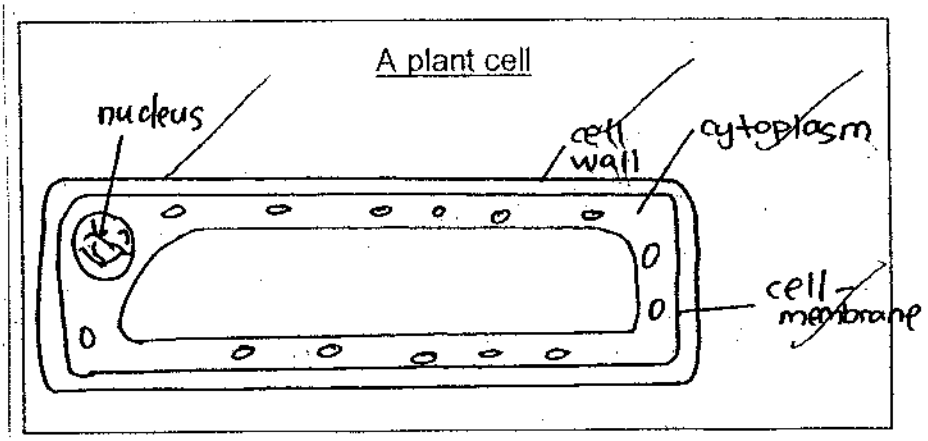
Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
2	4	1	4	2	3	2	2	2	1	3	3	3

31)a)The greater the mass, the lower the pulse rate.
b)Q has a small mass.

32)a)R: windpipe. S: air sac
b)The person cannot breathe properly.

33)a)The white rose will turn blue,red and yellow.
b)Water moves up the white rose through the xylem.

34)



3 87

35)paramecium
yeast
bacteria

whale
fern
moss

36)a)Terri removes the cell membrane.
b)The cell membrane controls the movement of substance A into the cell.

37)a)More chloroplasts on the upper surface allow more sunlight to be trapped for photosynthesis and make food.
b)Bracket fungus do not have chloroplasts chlorophyll and do not photosynthesize.

38)a)Jamie was trying to find out if fertilisation of aplant could take place without the anther.
b)Wind could have blown the pollen grains from other plants onto the stigma and fertilisation occurred.

39)a)This seed is dispersed by wind. It has a winged-like structure and enables it to fly a further distance.
b)Dandelion.
c)Dispersal of the seeds prevent overcrowding and helps the seeds to avoid competition with the parent plant and other young plants for space, water light and nutrients.

40)Joseph could take a basin of water and drop the fruit in it. When the fruit floats, it is dispersed by water.

41)a)The fruit developed in ovary X contains more seeds than the fruit developed in ovary Y.
b)It is a kiwi fruit.

42)a)Tiny water droplets can be seen on the outer surface of the glass.
b)Water vapour from the surrounding touches the cool surface of the glass, so the water vapour will condense and form water droplets.

43)a)→Soak one identical into a beaker of 100ml of water.
→Do it to another handkerchief with another beaker of 100ml of water.
→Fold one handkerchief into one half. Do not fold the other handkerchief.
→Leave the two handkerchief to dry for 3 hour.
→After 3 hour the handkerchief that is folded will not be as dry as the one not folded at all.
Conclusion: The greater the area of exposed surface, the faster is the rate of evaporation.

b)i)The temperature. ii)The rate of humidity.

44)opaque	translucent	transparent
story book	tracing paper	tap water
mirror	frosted glass	magnifying glass

45)a)The ring magnet, the U-shaped magnet, the bar magnet.
b)The stronger the magnetic force, the further the "pulling" distance of the magnets.

46)a)Object A loses heat while object gains heat.
b)There is a difference in temperature between object A and B.