

SA2

**METHODIST GIRLS' SCHOOL**  
**PRIMARY 5**  
**SEMESTRAL ASSESSMENT 2**  
**2005**

**SCIENCE**

**27 October 2005**

**BOOKLET A**

**NAME :** \_\_\_\_\_ (     )

**CLASS :** Pr 5 . \_\_\_\_\_

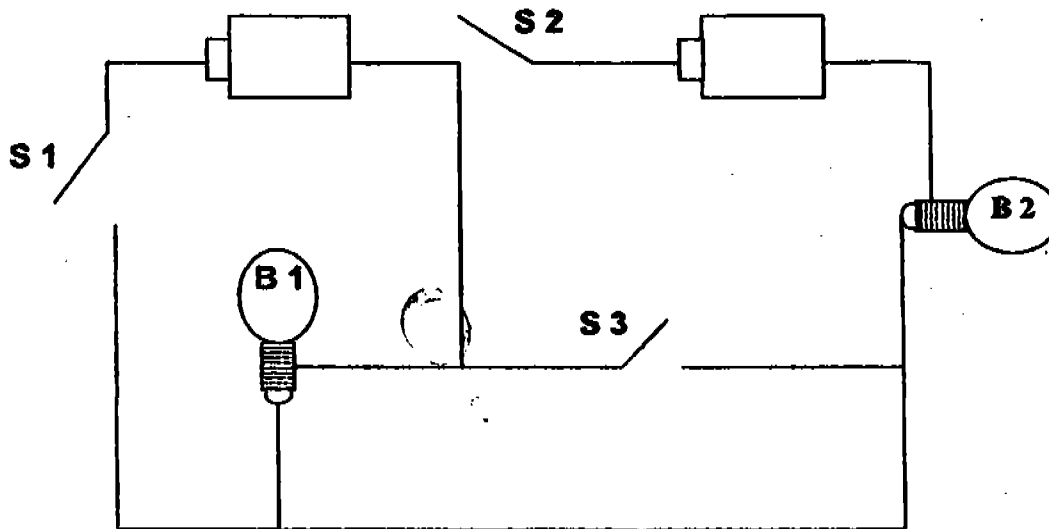
**Total Time For Booklets A and B : 1 hour 45 minutes**

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

Section A ( 50 marks )

For each question from 1 to 25, five options are given. One of them is the correct answer. Shade the correct one ( 1, 2, 3 or 4 ) on the Optical Answer Sheet.  
( 2 marks each )

1. The circuit is set up by using two bulbs, B1 and B2, and three switches, S1, S2 and S3.



Which of the following is correct ?

	S1	S2	S3	B1	B2
(1)	on	off	off	lighted	not lighted
(2)	on	on	off	not lighted	not lighted
(3)	off	on	on	not lighted	not lighted
(4)	off	off	on	not lighted	lighted

2. The water melon fruit is usually round or oval in shape. However, some characteristics are not inherited but are affected by the environment. Which of the following characteristics is likely to be affected by the environment ?

- (1) The flesh is juicy.
- (2) The seeds are small.
- (3) The skin is green and thick.
- (4) The fruit is square in shape.

3. Which of the following are incorrect about plant and animal cells ?

	Parts	Animals	Plants
(A)	Nucleus	Present	Present
(B)	Cytoplasm	Present	Not present
(C)	Cell wall	Not present	Present
(D)	Cell membrane	Present	Not present

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

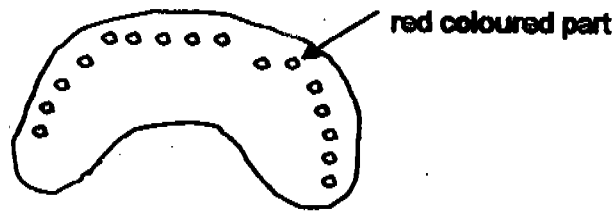
4. Friction helps us to do work. Sometimes, friction becomes a problem when we are \_\_\_\_\_.

- (1) stopping a bicycle
- (2) sharpening a knife
- (3) erasing pencil marks
- (4) pushing a steel cabinet

5. Some pupils carried out an experiment by putting a celery stem in a beaker of red-coloured water. The next day, they cut a cross section of the stem. The diagram below shows what they saw.

Note: Xylem vessels transport water and minerals from the roots to the leaves.

Phloem transports food from the leaves to all parts of the plant.



cross section

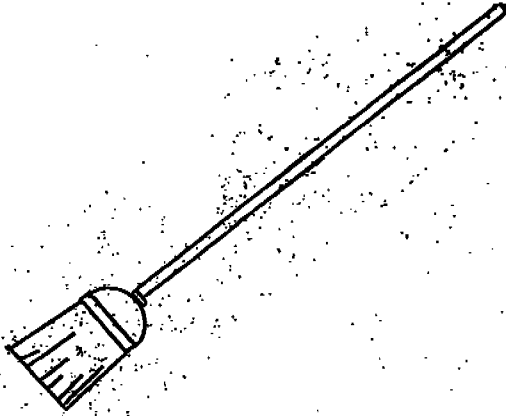
Which of the following conclusions made by the pupils is / are correct ?

- A: The red coloured parts contained starch.
- B: The red coloured parts are the xylem vessels.
- C: The red coloured parts are the phloem vessels.
- D: The stem carries water from the roots to the rest of the plant.

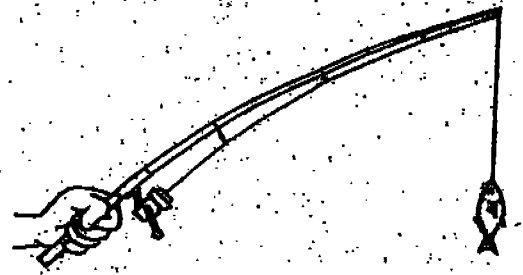
- (1) A only
- (2) C only
- (3) A and B only
- (4) B and D only

6. In which of the following machines is the effort applied greater than the load ?

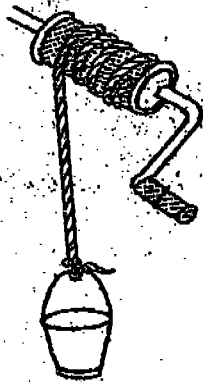
X.



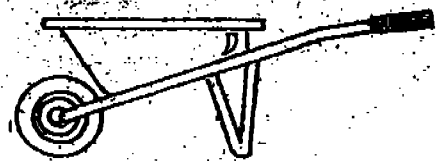
B.



C.

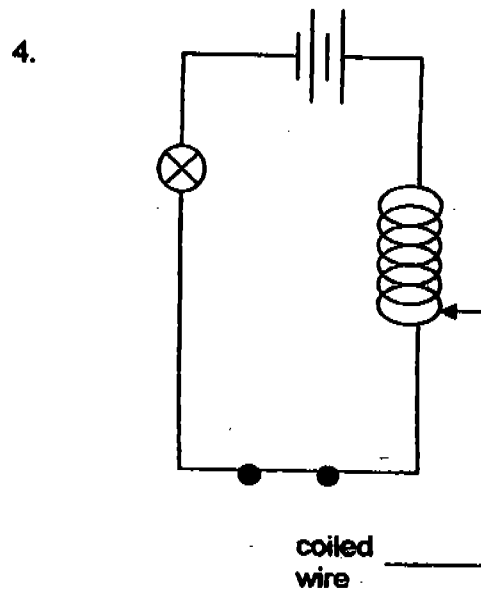
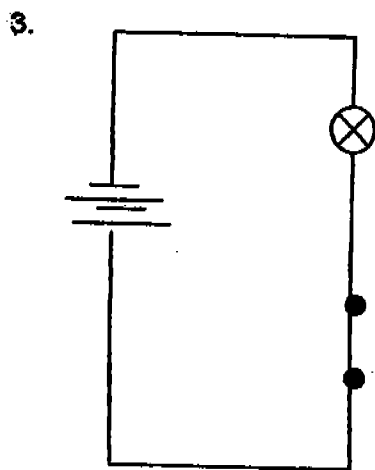
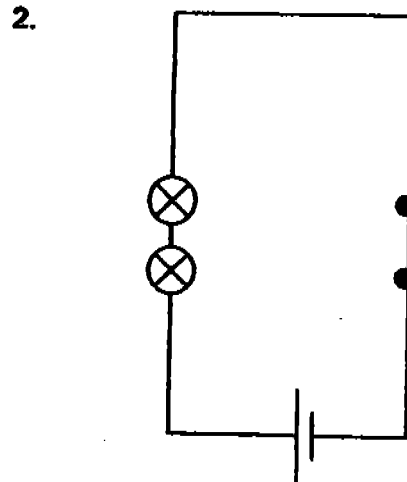
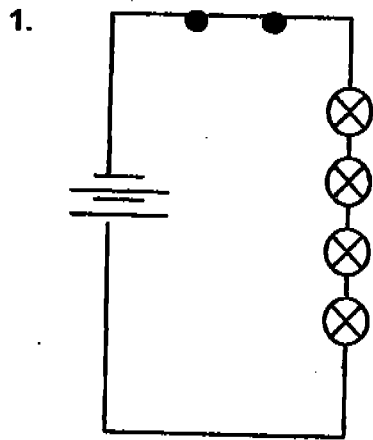


D.

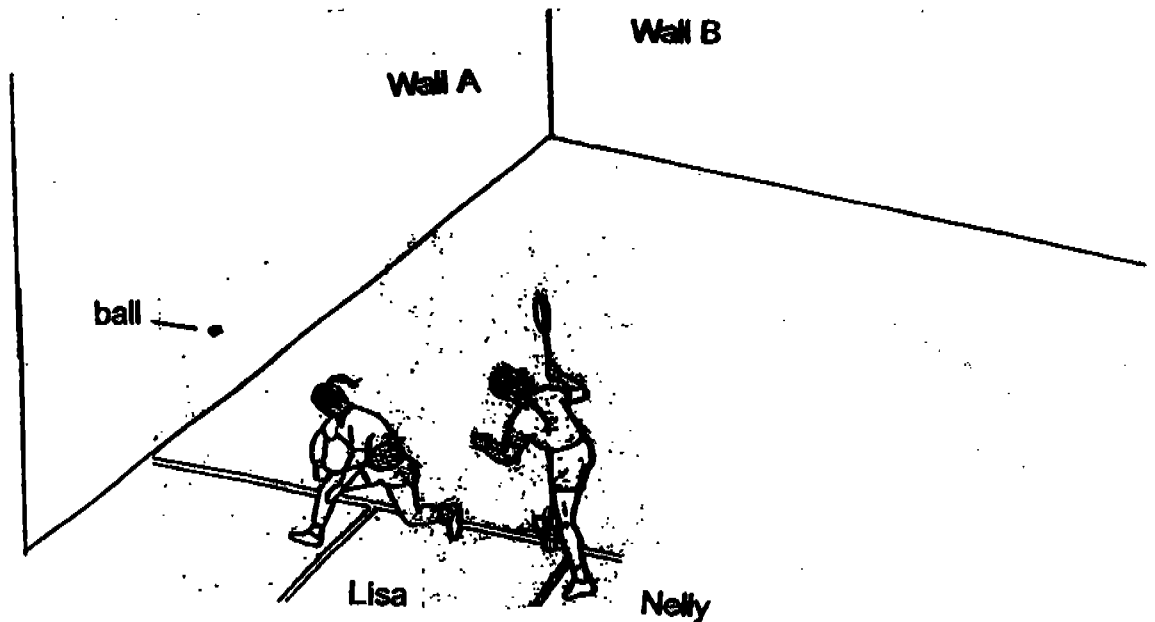


- (1) A and B only
- (2) A and C only
- (3) A, B and C only
- (4) A, B, C and D

7. Study the circuit diagrams below.  
Which one of the following circuits will be the brightest ?



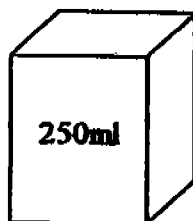
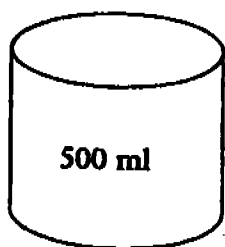
8. Lisa and Nelly are playing a game of squash.



What will happen to the ball when Lisa hits it towards the wall<sup>A</sup>?

- (1) The ball will stop moving.
  - (2) The ball will roll down wall A
  - (3) The ball will move towards Nelly and Lisa.
  - (4) The ball will stay in the corner between wall A and wall B.
9. Sarah wants to find out which type of wire conducts electricity best. Which of the following variables must be kept constant ?
- A: Type of wire
  - B: Type of bulb
  - C: Number of dry cells
  - D: Arrangement of dry cells
- (1) A, B and C only
  - (2) A, C and D only
  - (3) B, C and D only
  - (4) A, B, C and D

10. Substance A is able to occupy all the space in each of the containers shown below.



Which one of the following is most likely Substance A ?

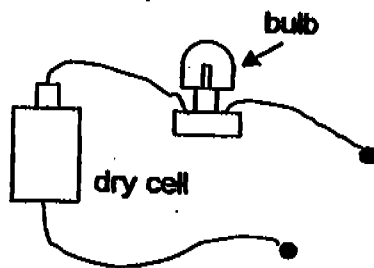
	Has weight	Definite volume	Definite shape
(1)	Yes	Yes	Yes
(2)	Yes	No	Yes
(3)	Yes	Yes	No
(4)	Yes	No	No

11. Which one of the following is a good conductor of electricity and heat ?

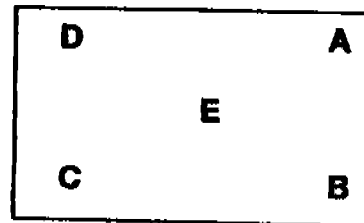
- ~~(1)~~ glass rod
- ~~(2)~~ pencil lead
- ~~(3)~~ nylon string
- ~~(4)~~ cotton thread



12. The circuit card shown below has a metal thumbtack at each of the points A, B, C, D and E. Some of the thumbtacks are connected by wires behind the card.



circuit tester



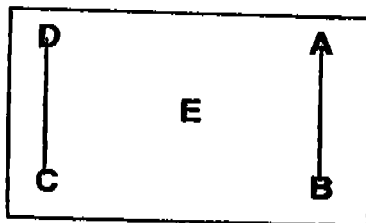
circuit card

To find out how these thumbtacks are connected, the two ends of the circuit tester are connected to two different thumbtacks each time. The results are shown in the table below :

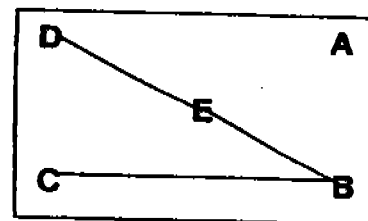
Tester connected to thumbtacks at	Does the bulb in the circuit tester light up ?
A and D	No
B and D	Yes
C and E	Yes

From the results shown in the table above, which one of the following is a possible arrangement of the wires behind the circuit card ?

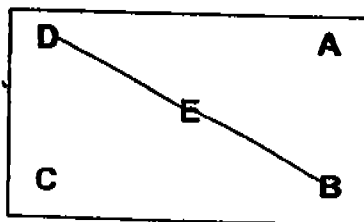
(X)



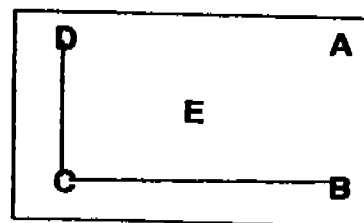
(2)



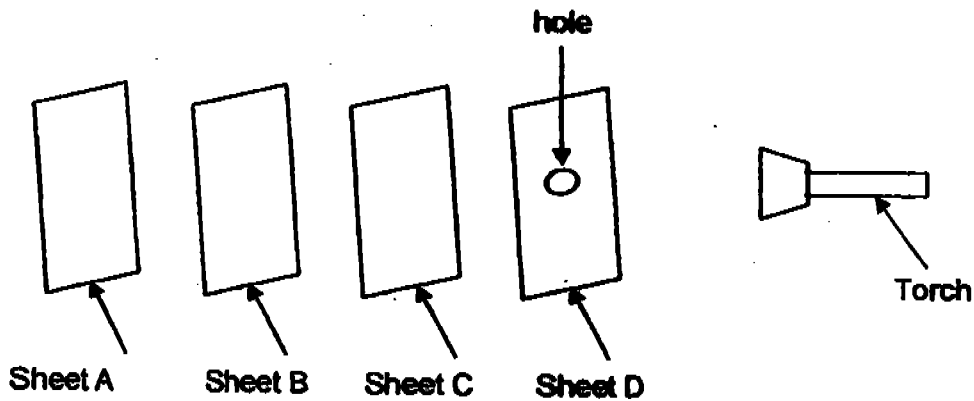
(8)



(4)



13. The experiment shown below is carried out in a dark room.



Sheets A, B, C and D are arranged in a straight line. When the torch is switched on, a bright oval patch of light is seen on Sheet B only.

Which one of the following correctly describes the properties of the materials that sheets A, B, C and D are made off ?

	Allows light to pass through	Does not allow light to pass through	Not possible to tell
(1)	A	B	C and D
(2)	B and D	A	C
(3)	C	B and D	A
(4)	A and C	B	D

14. We can see stars because they \_\_\_\_\_.

- (A) give out light of their own  
 (B) reflect light from the sun  
 (C) absorb light from the sun  
 (D) send light to our eyes

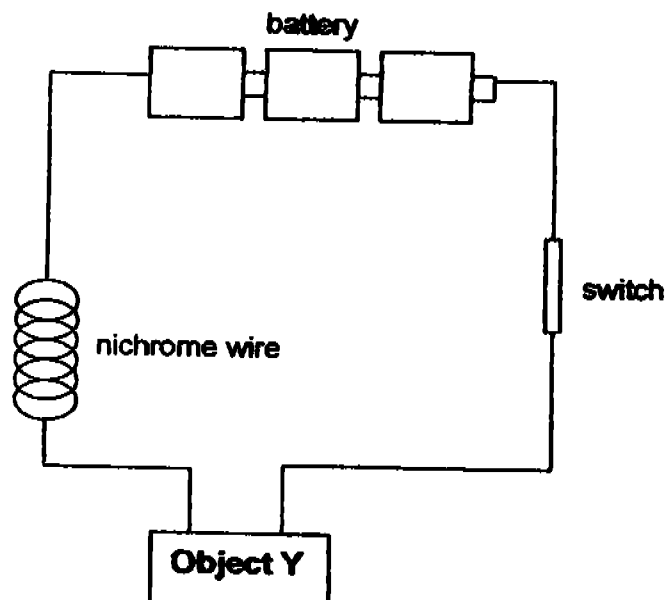
- (1) A and B only  
 (2) A and D only  
 (3) B and C only  
 (4) C and D only

15. Study the three pairs of items below :

carton	wood
cutler	steel
bowl	clay

How are the two items in each pair related ?

- (1) an object and its state
  - (2) an object and its shape
  - (3) an object and how it is made
  - (4) an object and what it is made of
16. An experiment is set up as shown in the diagram. The nichrome wire becomes hot when the switch is on.



What does the experiment tell you about the object Y ?

- (1) Object Y is fused.
- (2) Object Y is definitely water
- (3) Only heat can pass through object Y.
- (4) Electricity can pass through object Y.

17. The table contains some information about five planets.

Planets	Number of moons	Surface temperature(°C)	Distance from Sun (million km)	Time taken to make one rotation
Earth	1	-89 to 58	150	24 hours
Mars	2	-82 to 0	228	24 hours
Saturn	30	-170	1 427	11 hours
Neptune	8	-210	4 497	16 hours
Pluto	1	-230	5 914	6 days

These tables show how Leela and Ruyi grouped these planets.

Leela

Group A	Group B
Earth Mars	Saturn Neptune Pluto

Ruyi

Group A	Group B
Earth Pluto	Mars Saturn Pluto

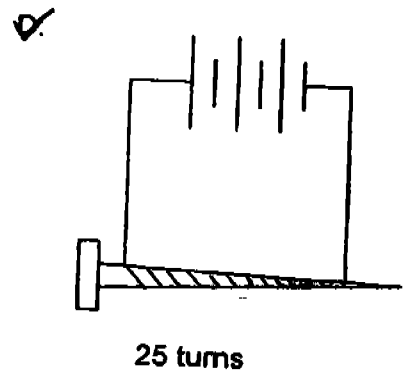
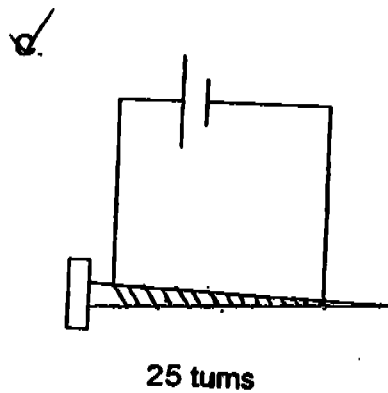
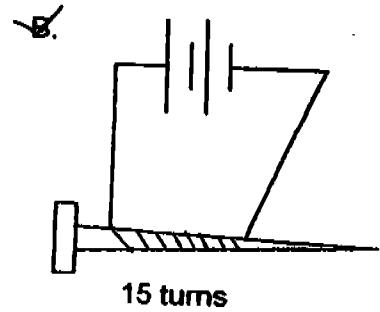
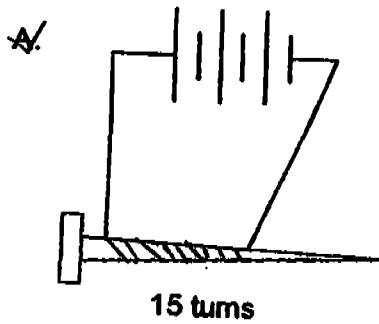
Which characteristics did Leela and Ruyi use to group the planets ?

	Leela	Ruyi
(1)	Time taken for one rotation	Number of moons
(2)	Number of moons	Surface temperature
(3)	Distance from Sun	Time taken for one rotation
(4)	Surface temperature	Distance from Sun

18. An iron bar becomes a magnet when it is coiled with wire that is joined to batteries.

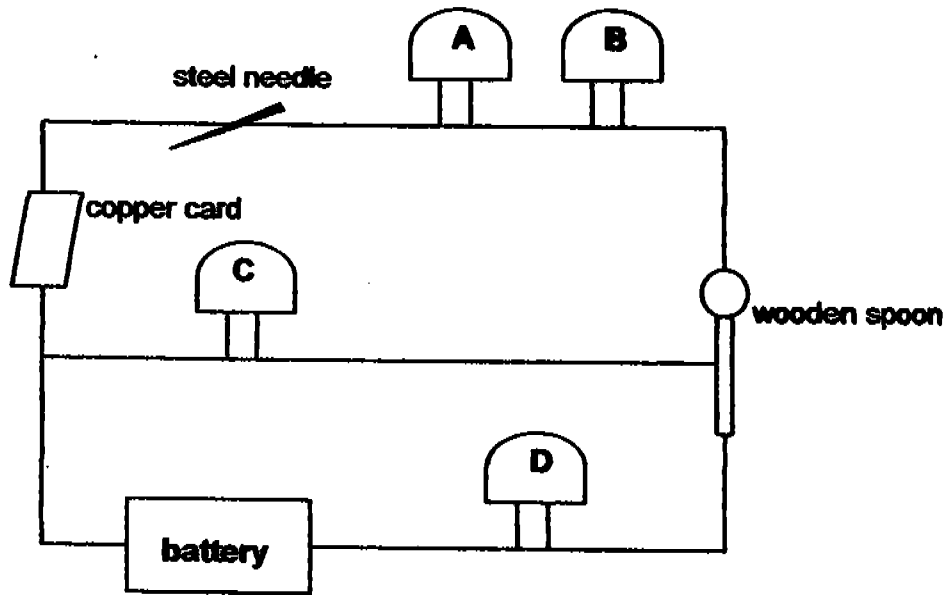
Nadia wants to find out whether the number of turns of the wire affects the strength of the magnet. She sets up two arrangements. For each arrangement, she tests the strength of the magnet by counting the number of metal paper clips it can pick up.

Which two arrangements below should she set up to conduct a fair test ?



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

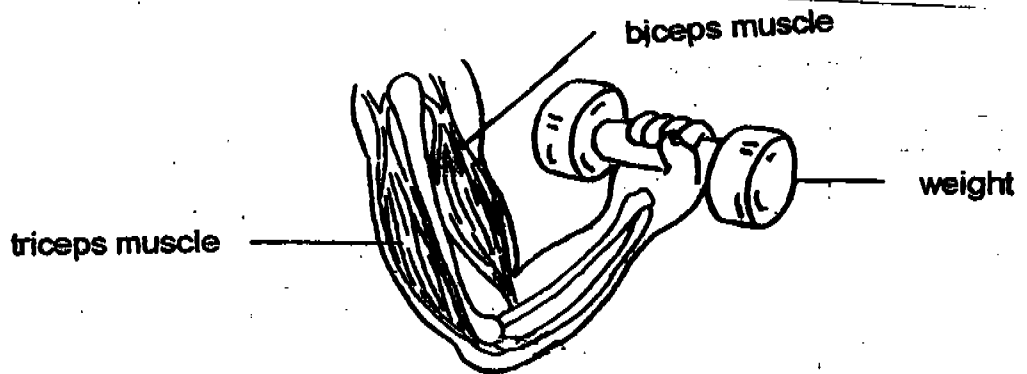
19. In the diagram below, there are 4 bells A, B, C and D in a circuit.



Which of these bells will ring ?

- (1) A and B only
- (2) C and D only
- (3) All of the bells
- (4) None of the bells

20. The picture shows a human arm and a weight. The arm is an example of a lever.

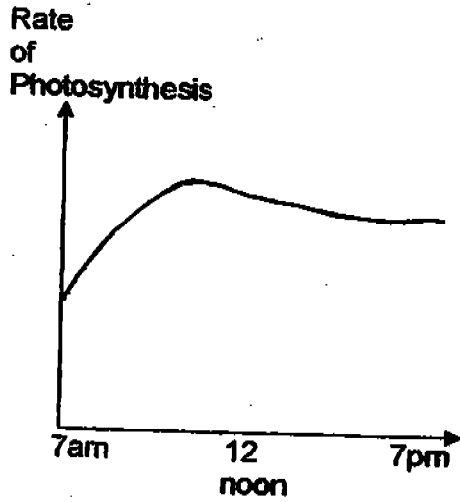


When the weight is lifted, the \_\_\_\_\_

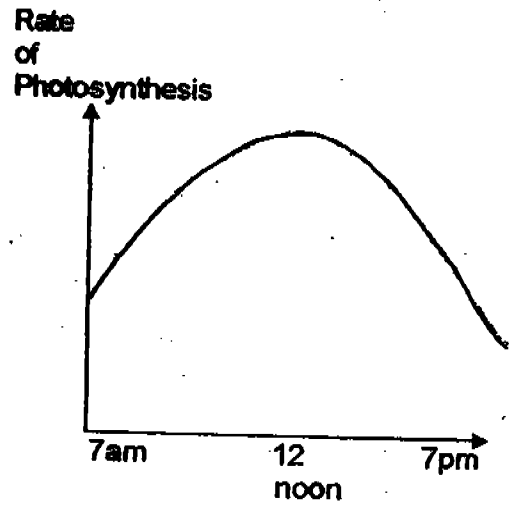
- (1) biceps contracts.
- (2) triceps contracts.
- (3) arm exerts less effort than the weight.
- (4) arm produces a large movement of the effort.

21. Which of the following graphs correctly shows the rate of photosynthesis at different times of the day ?

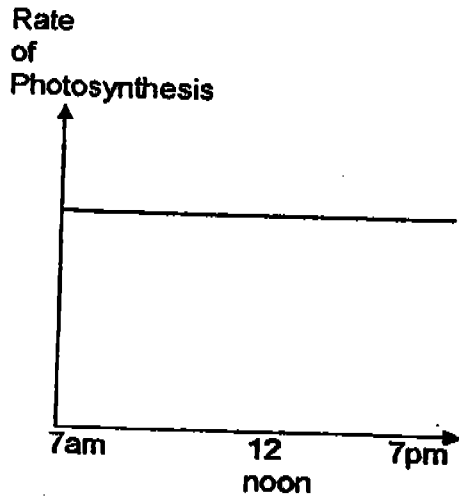
(1)



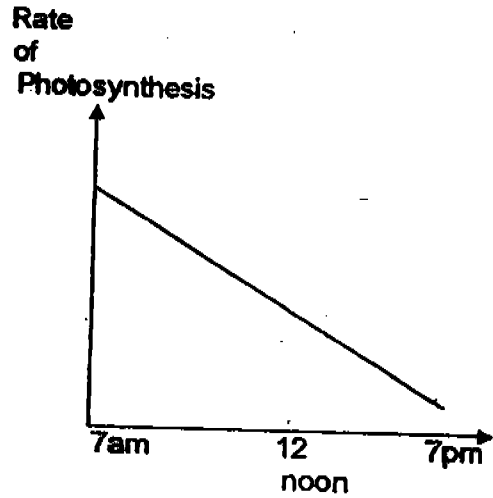
(2)



(3)

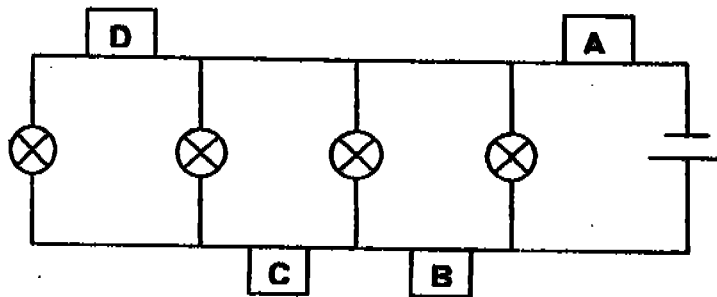


(4)



For questions 22 and 23, please refer to the diagram below.

There are four bulbs on the circuit as shown in the diagram.



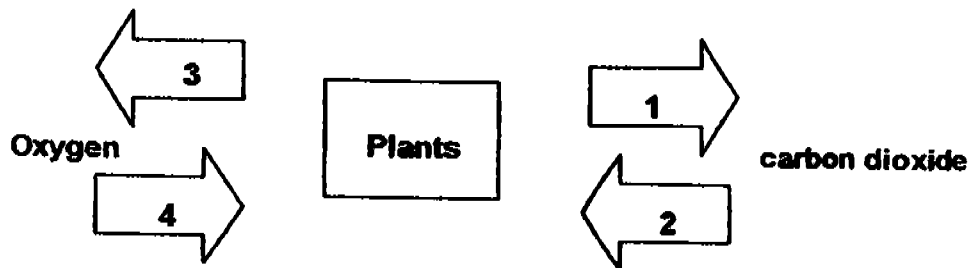
22. Where would you put a switch that would turn all the lights off ?

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

23. Where would you put a switch that would turn one light off and leave three lights on ?

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

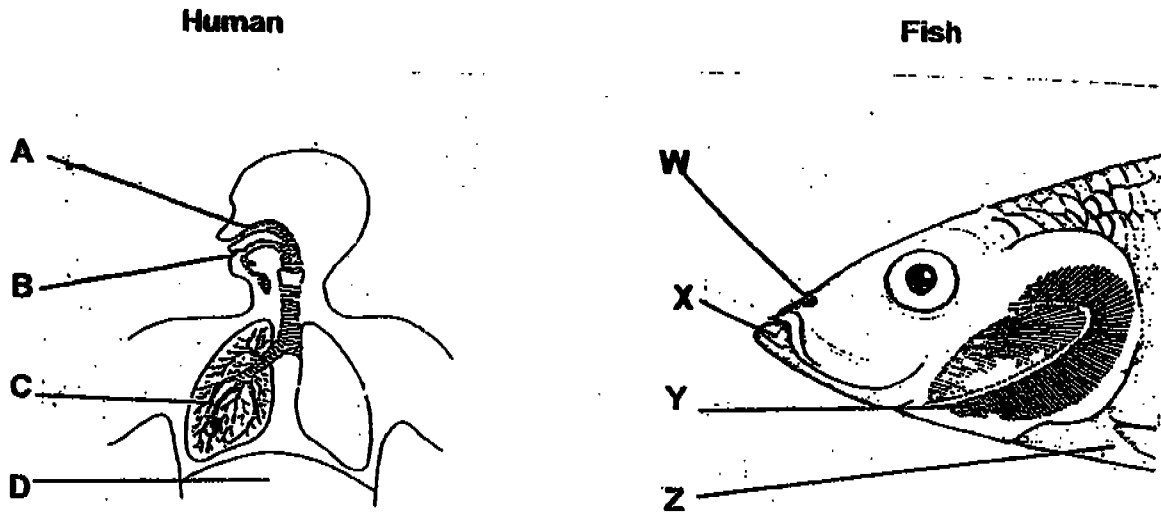
24. Which two arrows show correctly the exchange of gases during photosynthesis ?



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



25. The diagrams show the breathing systems of 2 organisms.



Which parts of both systems allow exchange of gases to take place ?

	Human	Fish
(1)	A	W
(2)	B	X
(3)	C	Y
(4)	D	Z

**METHODIST GIRLS' SCHOOL**

**PRIMARY 5**

**SEMESTRAL ASSESSMENT 2**

**2005**

**SCIENCE**

**27 October 2005**

**BOOKLET B**

**NAME :** \_\_\_\_\_ (      )

**CLASS :** Pr 5. \_\_\_\_\_

**Total Time For Booklets A and B : 1 hour 45 minutes**

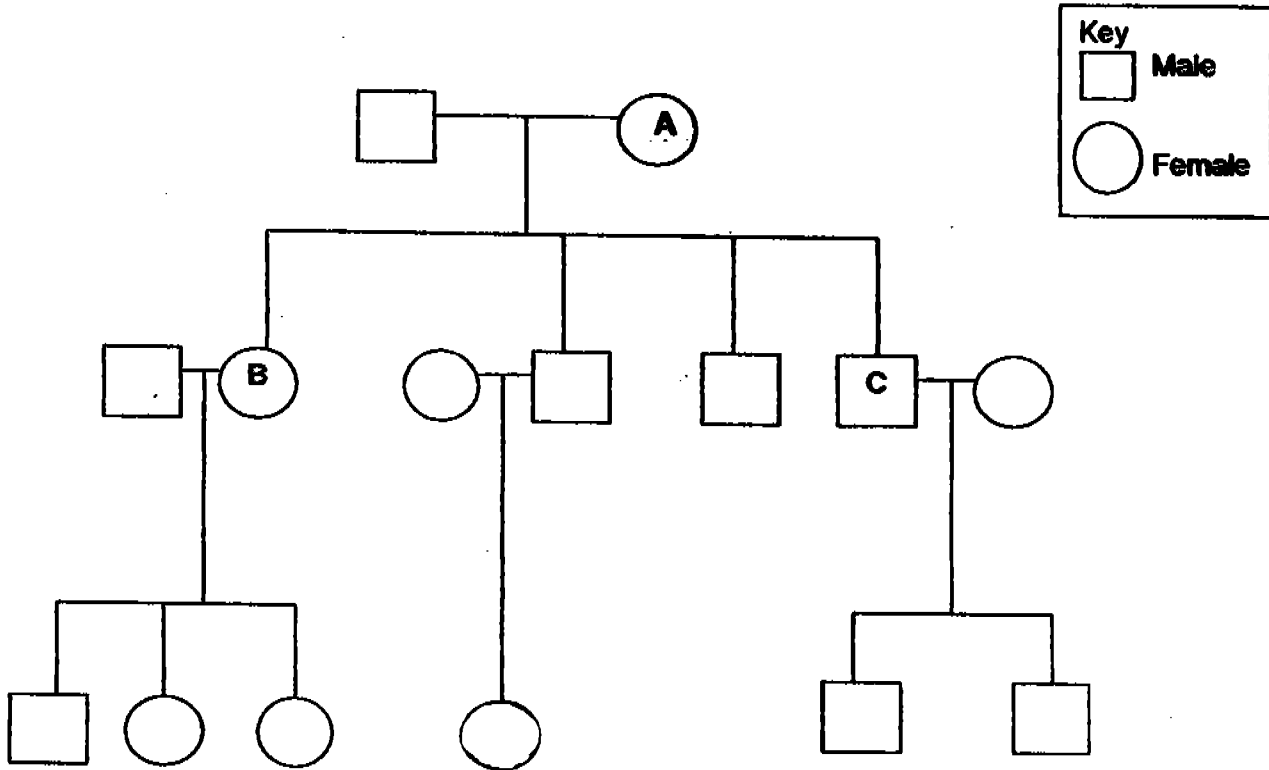
<b>Booklet A ( 50 marks )</b>	
<b>Booklet B ( 40 marks )</b>	
<b>Total ( 90 marks )</b>	

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

Section B ( 40 marks )

Write your answers to questions 26 to 40 in the spaces provided.

26. Study Jean's family tree below and answer the questions that follow.



(a) Jean is the only child in her family.  
Shade the blank that represents Jean. ( 1 mark )

(b) How many brothers has Jean's father ? ( 1 mark )

\_\_\_\_\_

(c) How is ' A ' related to Jean ? ( 1 mark )

\_\_\_\_\_

(d) How many cousins has Jean ? ( 1 mark )

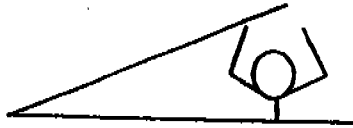
\_\_\_\_\_

(e) How is ' B ' related to ' C ' ? ( 1 mark )

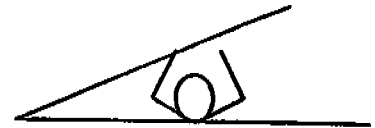
\_\_\_\_\_

27. The diagram below shows four men opening the same basement door.

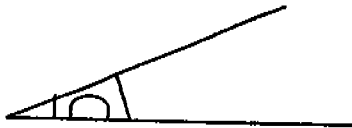
Man A



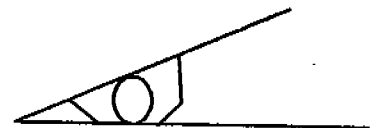
Man B



Man C



Man D



(a) Arrange in order, from the least to the greatest, the force each man applied to open the door. (1 mark)

→

Man	Man	Man	Man
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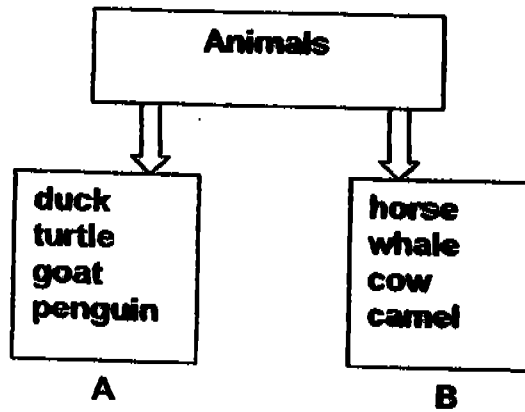
(b) From your answer in (a), what can you conclude about the position of the man and the effort needed to open the door. (1 mark)

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28. Study the classification table below.



(a) Which animal in the diagram has been classified wrongly ? ( 1mark )

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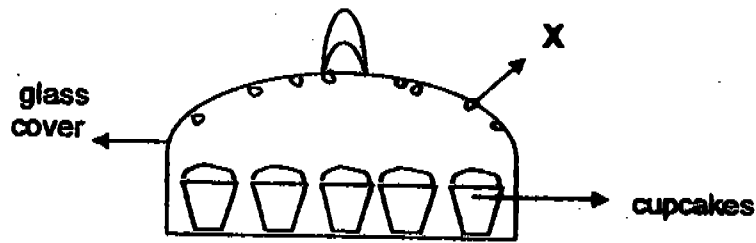
(b) In which group ( A or B ) should this animal be grouped ? ( 1mark )

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(c) How are the animals in the classification table grouped ? ( 1mark )

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29. Jill covered some hot cupcakes with a glass cover. After some time, the inside of the cover became misty.



- (a) How did the cover become misty? (1mark)

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- (b) What is 'X'? (1mark)

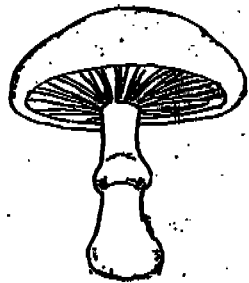
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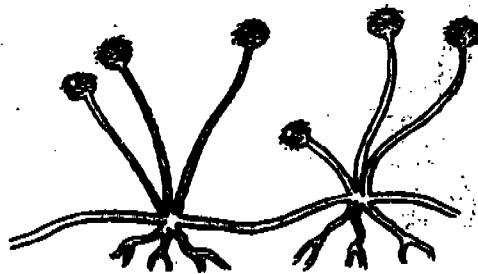
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- (c) The cupcakes \_\_\_\_\_ heat while the glass cover \_\_\_\_\_ heat. (1mark)

30.



mushroom



bread mould

- (a) How do the mushroom and the bread mould reproduce? (1mark)

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- (b) Where are the spores found in each of the organisms? (2marks)

mushroom : \_\_\_\_\_

bread mould : \_\_\_\_\_

31. Some pupils wanted to find out if the length of the wire in a circuit made a difference to the brightness of the bulb. The table below shows their results.

Length of wire	Brightness of bulb
1 m	very bright light
4m	bright light
8m	dim light
16m	faint light
32m	very faint light

- (a) What can you learn from these results ? (1 mark)

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- (b) How did the pupils keep the test fair ? (2 marks)

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32. Some plants can be reproduced from stems even though they can be reproduced from seeds.

Give two advantages of growing new plants from plant parts.

- a. \_\_\_\_\_ (1 mark)

- b. \_\_\_\_\_ (1 mark)

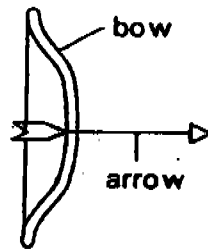
33. Classify the following materials into electrical conductors and insulators.

<del>aluminium foil</del>	<del>eraser</del>	<del>cardboard</del>
lime fruit	wool	<del>sea water</del>

Conductors	Insulators

( 3 marks )

34. The diagram shows a bow and an arrow.



- (a) What should an archer do if he wants to increase the force of his shots ?  
( 1 mark )
- 
- (b) Circle the correct object that works the same as the bow. ( 1 mark )

axe      catapult      funnel      steering wheel



35. The two diagrams show four similar ring magnets in two different positions.

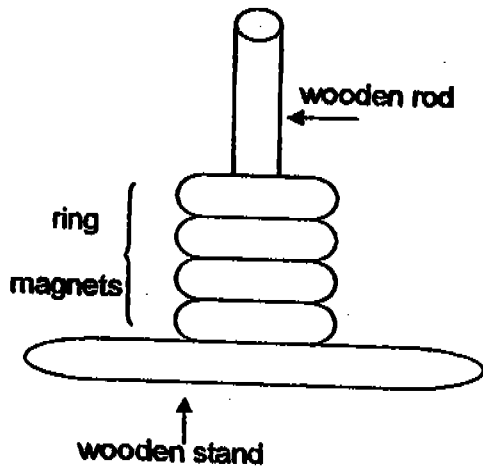


Diagram 1

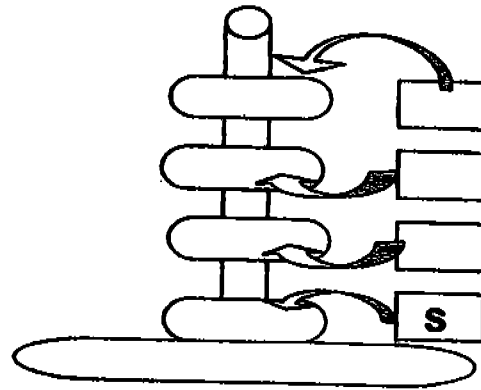


Diagram 2

(a) Why are the magnets piled up together in Diagram 1? (1 mark)

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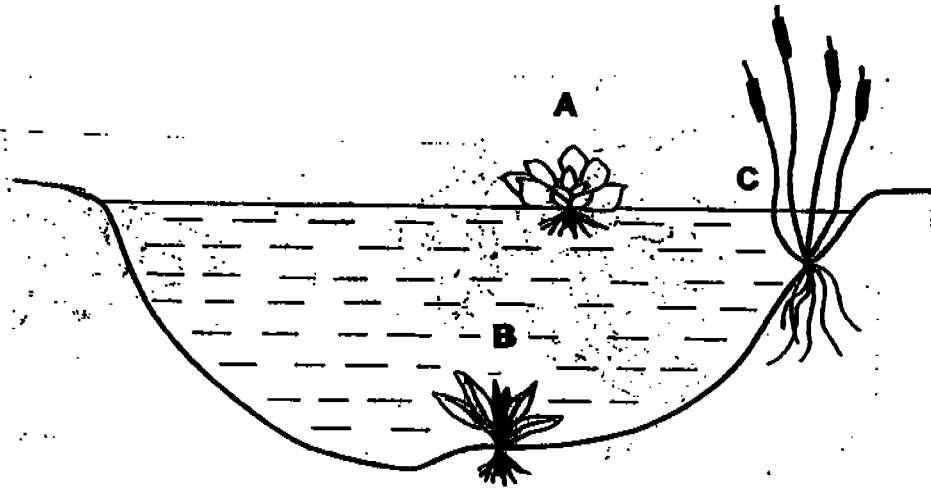
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(b) In Diagram 2, the magnets are re-arranged in such a way that one floats above the other. The pole of one magnet has been indicated. Write in the boxes the poles of the remaining magnets. (3 marks)

'S' represents South Pole

'N' represents North Pole

36. The diagram shows three types of water plants, A, B and C, growing in a pond.



- (a) Which plant would not grow well if plant A <sup>multiplies</sup> multiplies rapidly? (1mark)

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- (b) Give a reason why the plant you mentioned in (a) would not grow well. (1mark)

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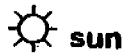


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37. During inhalation, the air that enters the lungs contains more \_\_\_\_\_  
 During exhalation, air leaving the \_\_\_\_\_ is warmer and  
 contains more moisture and \_\_\_\_\_.

(3 marks)

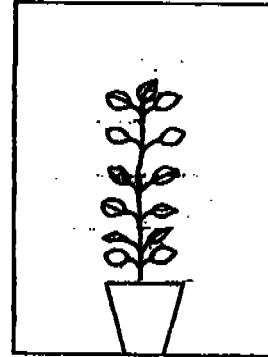
38. Some students carried out an experiment as shown below. They used two similar plants, same amount of soil in two similar pots. They watered the plants every day.



sun



wooden cupboard



They wanted to find out if \_\_\_\_\_ is needed when plants make food. ( 1mark )

39. (a) Sugar produced during \_\_\_\_\_ is needed to supply \_\_\_\_\_ for life processes like growth and reproduction to take place. ( 2marks )

(b) What gas is needed during the life processes mentioned in (a) ?  
\_\_\_\_\_  
( 1mark )

40. In the table, tick the waste products of respiration. ( 1mark )

Product	
water	
starch	
carbon dioxide	
oxygen	

————— END —————

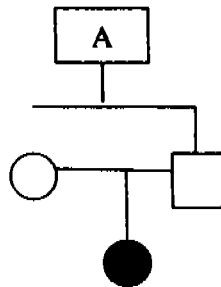
Methodist Girls Primary School  
Primary 5 Science SA2 (2005)

*Exam Solutions*

Answer Sheets

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

26a.



- 26b. Two brothers
- 26c. 'A' is Jean's grandmother
- 26d. She has give cousins.
- 26e. 'B' is 'C' sister.

- 27a. A, B, D, C
- 27b. When the man is nearer to the fulcrum of the door, more effort is needed to lift the door.

- 28a. The goat
- 28b. Group B
- 28c. In group A, animals lay eggs while in Group B animals give birth to young

29a. Hot water vapour from the hot cupcakes evaporated and condensed on the cool surface of the glass over.

- 29b. 'X' is water droplets.
- 29c. Lost/gained

- 30a They reproduce by spores.
- 30b. (i) In the gills  
(ii) In the spore bags
- 31a. The longer the length of the wire, the fainter the light would be. OR  
The shorter the length, the brighter the light of the bulb.
- 31b. Type of bulb/type of cells/battery/thickness of wire.
- 32a. They take a shorter time to grow.
- 32b. Fertilisation does not have to place.
- 33.
- |                |           |
|----------------|-----------|
| aluminium foil | eraser    |
| lime fruit     | cardboard |
| sea water      | wool      |
- 34a. He should pull/stretch the string further.
- 34b. catapult
- 35a. Unlike poles are facing each other so all the ring magnets are attracted to each other and therefore they are piled up together.
- 35b. N  
N  
S
- 36a. Plant B
- 36b. If plant A multiplies rapidly, it would prevent most of the sunlight from reaching Plant B. Plant B would not get enough sunlight to photosynthesize and would not grow well.
- 37a. Oxygen  
Lungs  
Carbon dioxide
38. Sunlight

39a.       Photosynthesis

energy

39b.       oxygen

40.

Water           ✓

Carbon dioxide   ✓