

METHODIST GIRLS' SCHOOL (PRIMARY)

PRIMARY 5

END-OF-YEAR EXAMINATION 2007

SCIENCE

BOOKLET A

NAME : _____ ()

CLASS : Pri. 5. _____

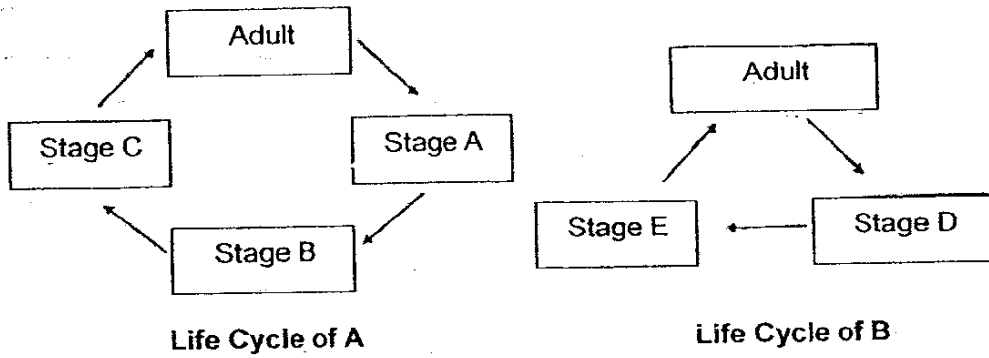
Total Time for Booklets A and B : 1h 45 min

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

SECTION A

For questions 1 to 25, 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.

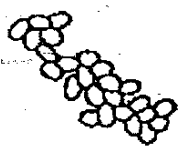
1. The diagram below shows the life cycles of two animals A and B.



Which option correctly identifies the animals A and B?

	A	B
<input checked="" type="radio"/>	Snake	Chicken
<input checked="" type="radio"/>	Dragonfly	Silkworm
<input checked="" type="radio"/>	Housefly	Platypus
<input checked="" type="radio"/>	Moth	Guppy

2. Which of the following single-celled organism has the ability to make its own food in the presence of sunlight?



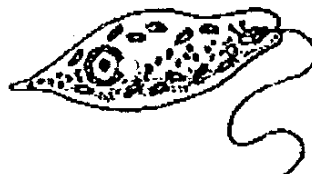
(1) Yeast



(2) Paramecium



(3) Amoeba

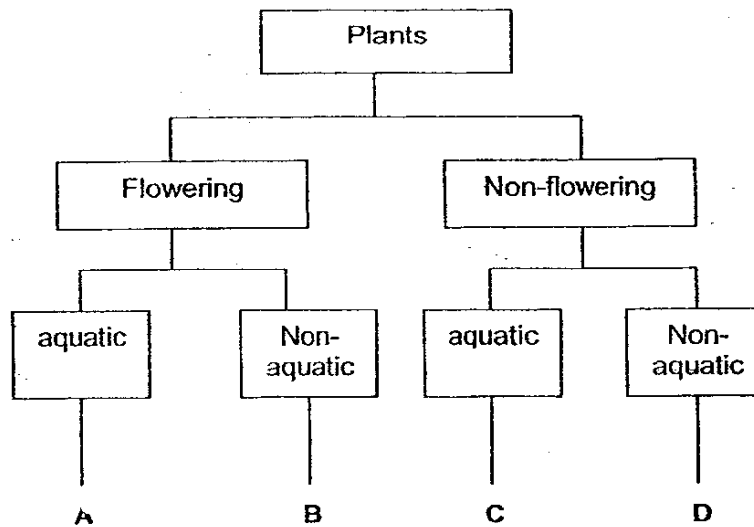


(4) Euglena

3. The following table gives information on four plants W, X, Y and Z based on two characteristics. A tick shows that the plant has the characteristic.

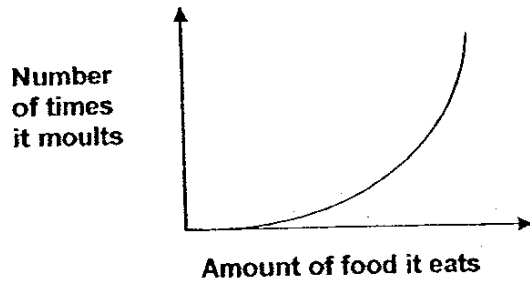
Characteristic	W	X	Y	Z
Bears fruit		√		√
Grows on land	√			√

From the information, where do plants W, X, Y and Z belong in the following classification table?



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

4. The graph below compares the number of times a larva moults with the amount of food it eats.



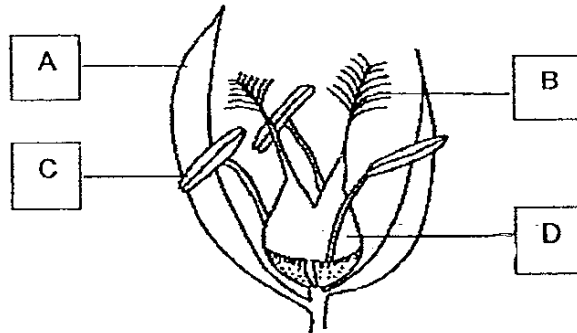
Which one of the following explains the shape of the graph?

- (1) The more the larva eats, the more often it moults.
- (2) The more the larva eats, the less often it moults.
- (3) The less the larva eats, the more often it moults.
- (4) The amount of food eaten by the larva has nothing to do with the number of times it moults.

5. Which of the following animals produce young that do not look like them?

	List of Animals
(1)	Giraffe, Butterfly, Moth, Shark
(2)	Mosquito, Frog, Mealworm beetle, Bee
(3)	Cockroach, Grasshopper, Duck, Horse
(4)	Guppy, Crocodile, Platypus, Ant

6. The following diagram shows parts of a wind-pollinated flower.



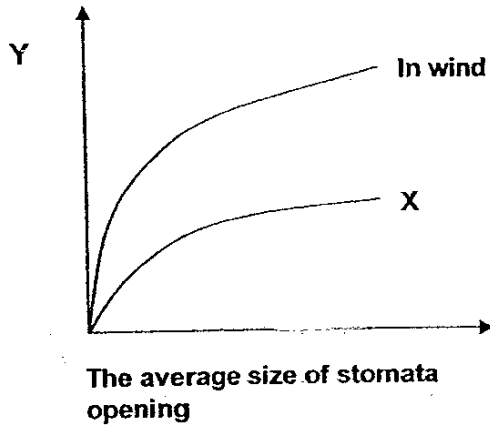
Which of the following statements incorrectly state the function of each part?

- A – Is colourful and produces nectar to attract insects for pollination.
- B – Small and sticky to receive pollen grains.
- C – Large amount of small, dry and smooth pollen grains are produced here.
- D – Develops into a fruit.

- A and B
- B and C
- A and C
- C and D

7. The average size of stomata will change during different times of a day according to the conditions of the environment.

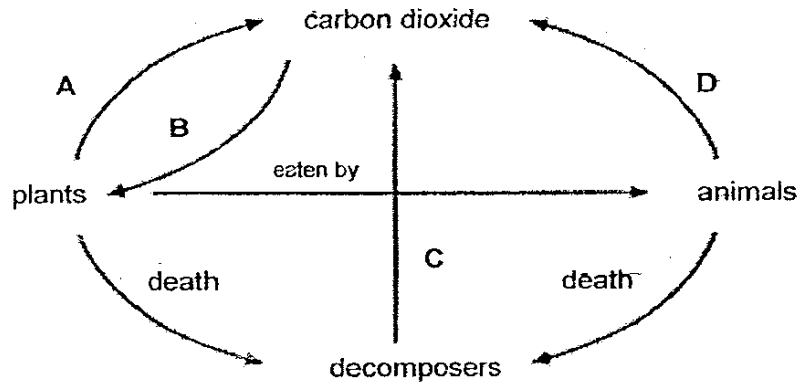
The relationship between the size of stomata opening in a plant and the rate of transpiration is shown in the graph below.



The graph however is not complete because of missing information X and Y.
What could X and Y represent?

- Y – The rate of transpiration; X – In still air
- Y – The rate of transpiration ; X – In the rain
- Y – The number of stomata found in the leaves; X – In still air
- Y – The number of stomata found in the leaves; X – In the rain

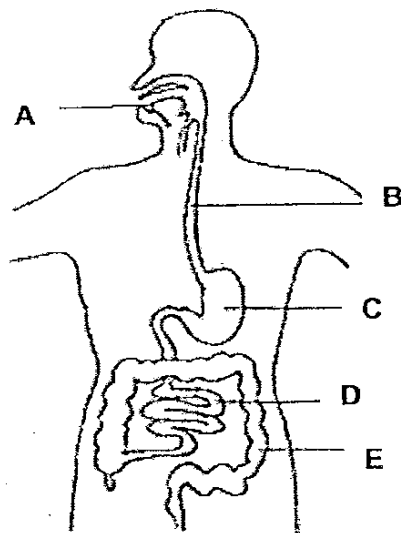
8. Study the diagram below.



The process of photosynthesis and respiration can be represented by _____.

	Photosynthesis	Respiration
(1)	A	B
(2)	A	B, D
(3)	B	A
(4)	B	A, D

9. The diagram below shows the human digestive system.

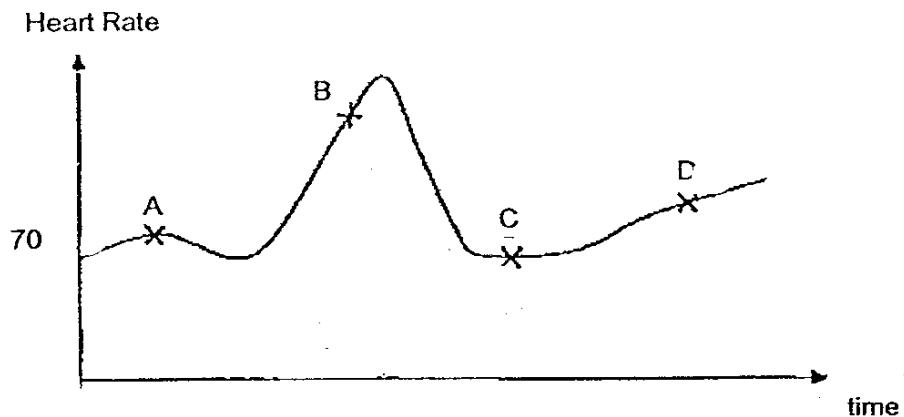


No digestion takes place in parts _____.

- ① B and E
- ② D and E
- ③ A, C and D
- ④ C, D and E

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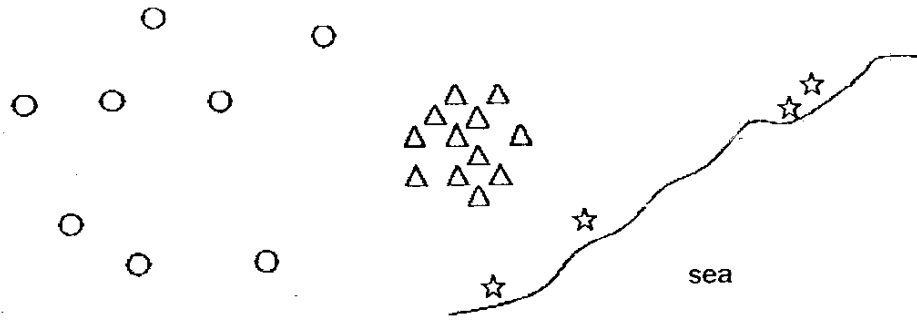
10. The heart rate of a person who is resting is about 70 beats in one minute. The following graph shows Pamela's heart rate over a few hours.



Which one of the following shows correctly Pamela's activity and her heart rate?

	A	B	C	D
(X)	sleeping	skipping	walking	sitting
(2)	sitting	skipping	sleeping	walking
(3)	sleeping	walking	running	sitting
(4)	walking	sitting	running	sleeping

11. The following picture shows how different species of plants are dispersed.

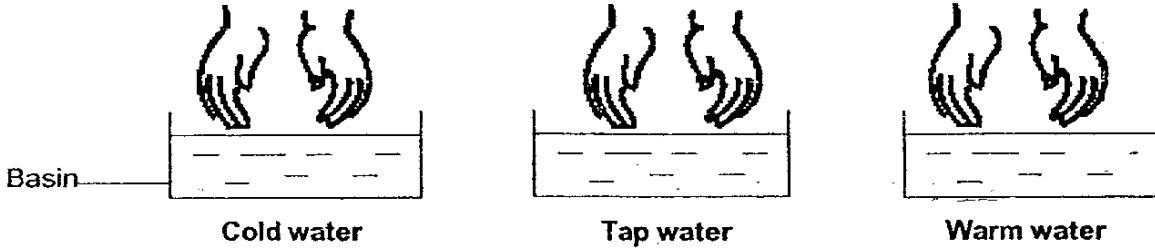


Which of the following represents Δ ?

- African Tulip
- Coconut
- Flame of the Forest
- Lotus

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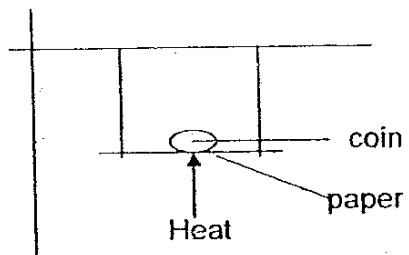
12. There are 3 basins of water of different temperatures. Gladys conducted an experiment by placing her hands in the different basins to find out how her skin would feel.



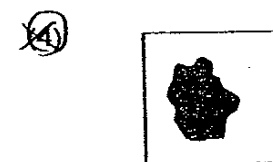
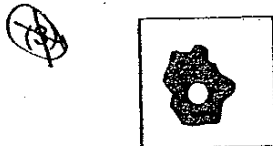
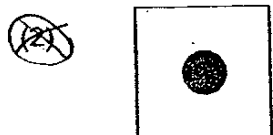
Which one of the following correctly shows the steps Gladys should take in order for the skin on her hands to feel warm at first, cool and then warm again?

Procedure	Step 1	Step 2	Step 3
<input checked="" type="radio"/>	Place hands into warm water	Place hands into cold water	Place hands into tap water
<input type="radio"/>	Place hands into cold water	Place hands into warm water	Place hands into tap water
<input type="radio"/>	Place hands into tap water	Place hands into warm water	Place hands into cold water
<input type="radio"/>	Place hands into tap water	Place hands into cold water	Place hands into warm water

13. Dennis placed a coin on a piece of paper and heated it.



Which one of the following diagrams most closely shows the effect of heating on the paper after one minute?



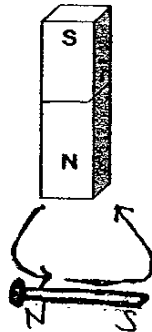
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14. The table below shows the state of four substances, A, B, C and D, at different temperatures.

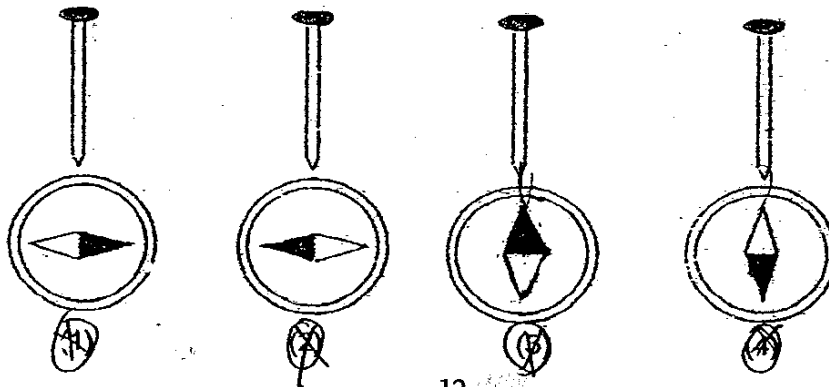
Substance	State of Substance at		
	20°C	40°C	60°C
A	Solid	Solid	Solid
B	Solid	Liquid	Liquid
C	Solid	Solid	Liquid
D	Liquid	Liquid	Liquid

Which of the following statements is correct?

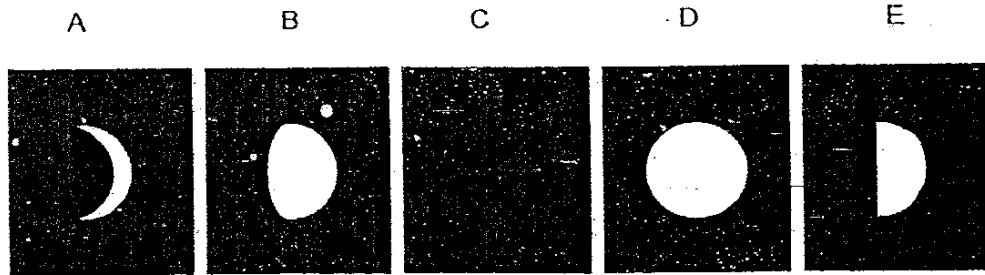
- Substance D has the lowest boiling point.
 Substance A has the highest melting point.
 The melting point of Substance B is above 40°C.
 The boiling point of Substance C is below 60°C.
15. An iron nail is made into a temporary magnet by stroking it with a bar magnet in the direction shown by the arrows below.



When a compass is brought near its tip, which one of the following shows the correct result?

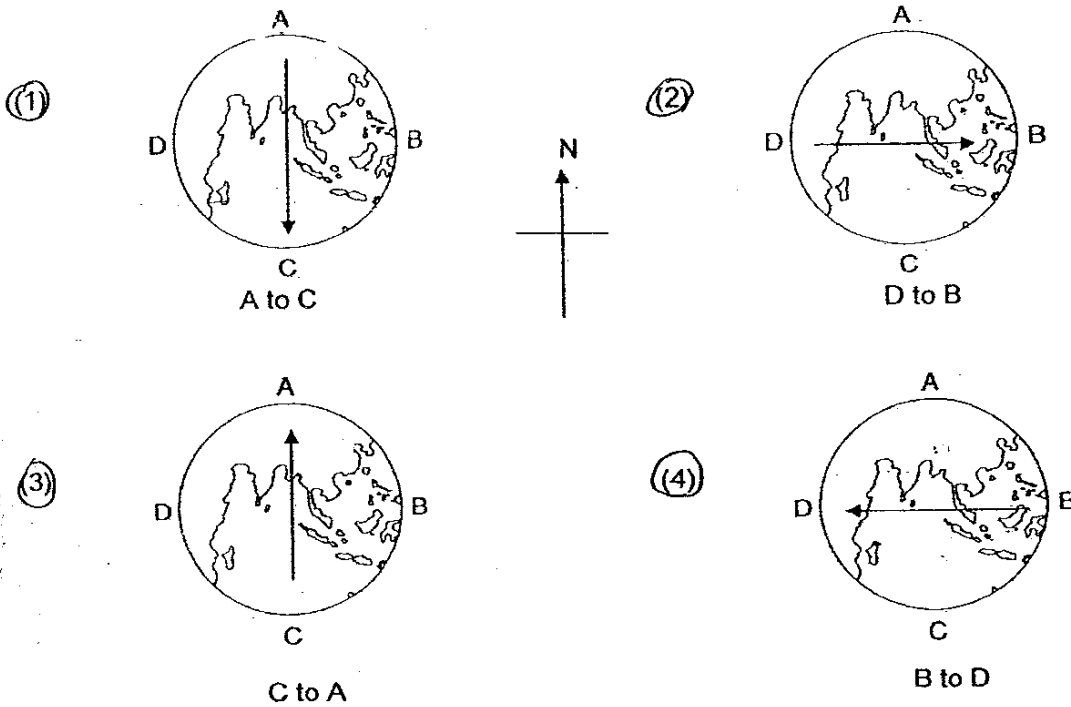


16. The diagrams below show the different phases of the Moon for a single month. Which of the following gives the correct sequence?



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

17. Which of the following arrows correctly indicates how the Earth spins? (North is indicated by the compass rose in the middle)



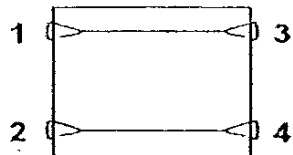
57

18. A circuit card is tested with a circuit tester. The results are recorded as follows:

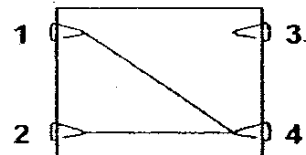
Clips Tested	Bulbs of circuit tester
1 and 3	Lights up
1 and 4	Does not light up
2 and 3	Lights up
2 and 4	Does not light up
3 and 4	Does not light up

Which diagram represents the circuit card that was tested?

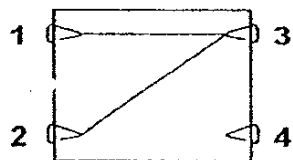
(1)



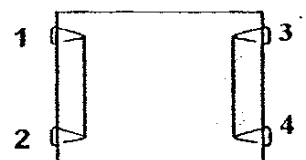
(2)



(3)

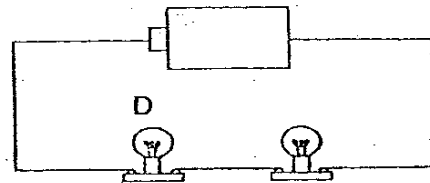
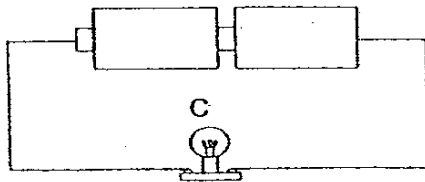
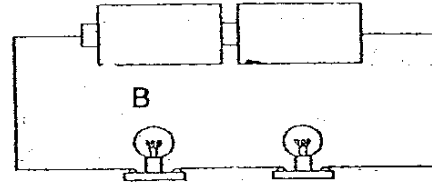
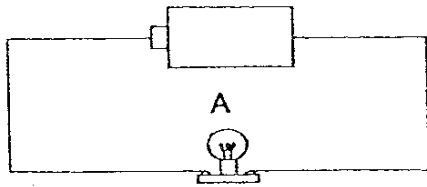


(4)



Handwritten mark resembling a stylized 'P' or 'R'.

19. The diagram below shows four circuits with different arrangements of identical batteries and identical bulbs. The bulbs in all four circuits light up.

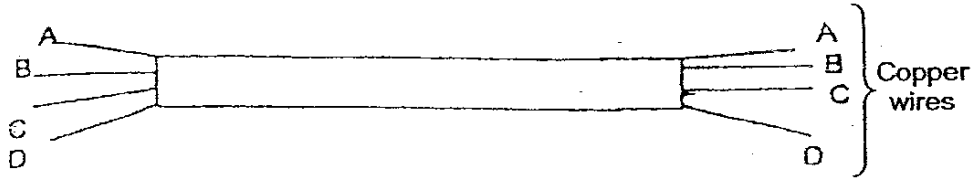


Which of the following shows the correct comparison of brightness among the bulbs?

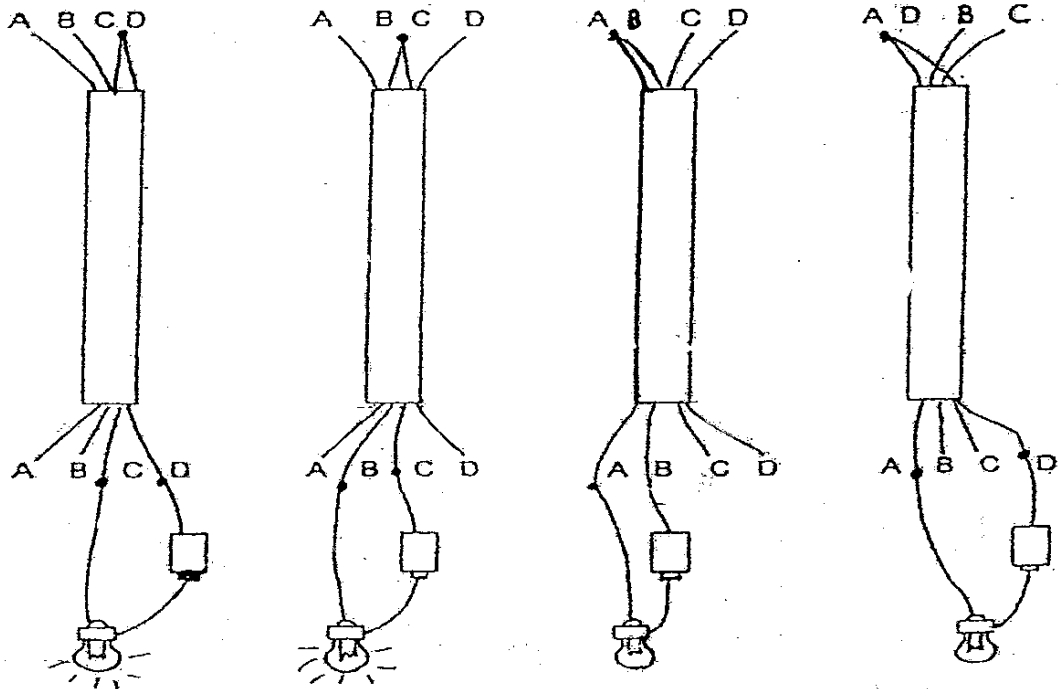
	Brightness of Bulb		
	Low	Medium	High
a)	D	A	B
b)	D	B ₂	C
c)	B	C	D
d)	B	A	C

20. Which of the following does not help to conserve electricity?
- ① Use fans instead of air-conditioners.
 - ② Use energy-saving lamps instead of normal light bulbs.
 - ③ Leave the lights on during the day to keep the room warm.
 - ④ Avoid using electrical appliances such as the television, computer and radio on stand-by mode.

21. Mrs Lee wanted to test which of the copper wires in a 2-metre insulated cable was broken.



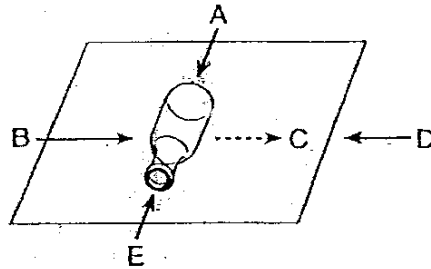
She used a simple circuit tester which was made up of a bulb connected to a battery to test the copper wires in the cable. She twisted the ends of the 2 different copper wires together and connected the corresponding ends to the simple circuit tester.



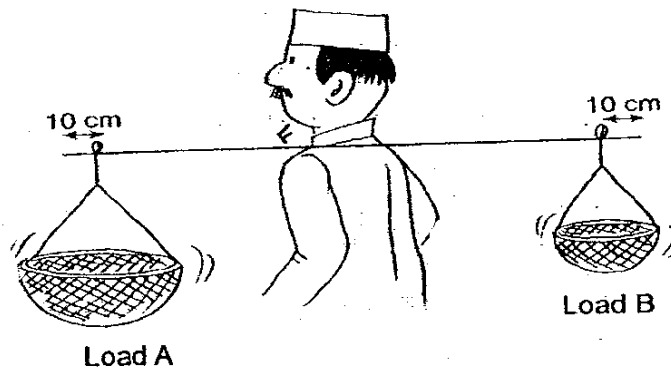
The diagrams above show the results when the circuit tester is connected to different wires. From the results shown above, which one of the copper wires in the cable was broken?

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

22. A bottle is rolling in the direction C. In order to make it move faster in the same direction, a force must be applied from _____.



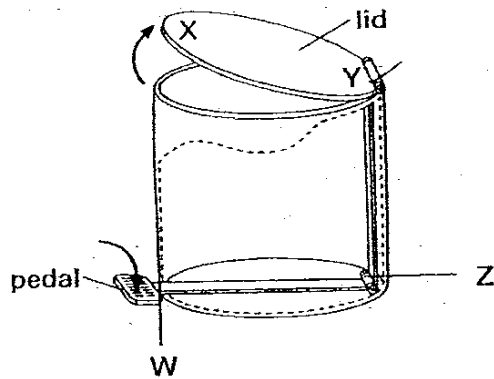
- (1) A
 (2) B
 (3) D
 (4) E
23. The diagram below shows Ahmad balancing two loads on his shoulder with a pole.



If load A is heavier than load B and the pole is supported in the middle by his shoulder, what should Ahmad do to balance the two loads?

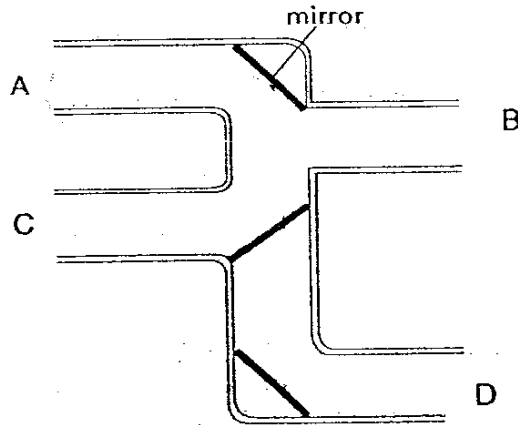
- (1) Move load A closer to his shoulder.
 (2) Move load B closer to his shoulder.
 (3) Move both loads the same distance, closer to his shoulder.
 (4) Move both loads the same distance, further from his shoulder.

24. The diagram below shows a waste bin which can be found in many households. When the pedal is pressed down, the lid of a waste bin is pushed upwards at point Y by an attached vertical rod. Which part of the bin, W, X, Y or Z is the fulcrum?



- (1) W
- (2) X
- (3) Y
- (4) Z

25. The diagram below shows a connection of pipes. Three mirrors are placed inside the pipes.



In order to see an object through the pipes, where should the eye and the object be placed respectively?

	Eye at position	Object at position
(1)	A	B
(2)	B	D
(3)	C	A
(4)	D	C

METHODIST GIRLS' SCHOOL (PRIMARY)

PRIMARY 5

END-OF-YEAR EXAMINATION 2007

SCIENCE

BOOKLET B1

Life Science

SECTION	MARKS
A (50 marks)	
B1 (19 marks)	
B2 (21 marks)	
TOTAL (90 marks)	

NAME : _____ ()

CLASS : Pri. 5. _____

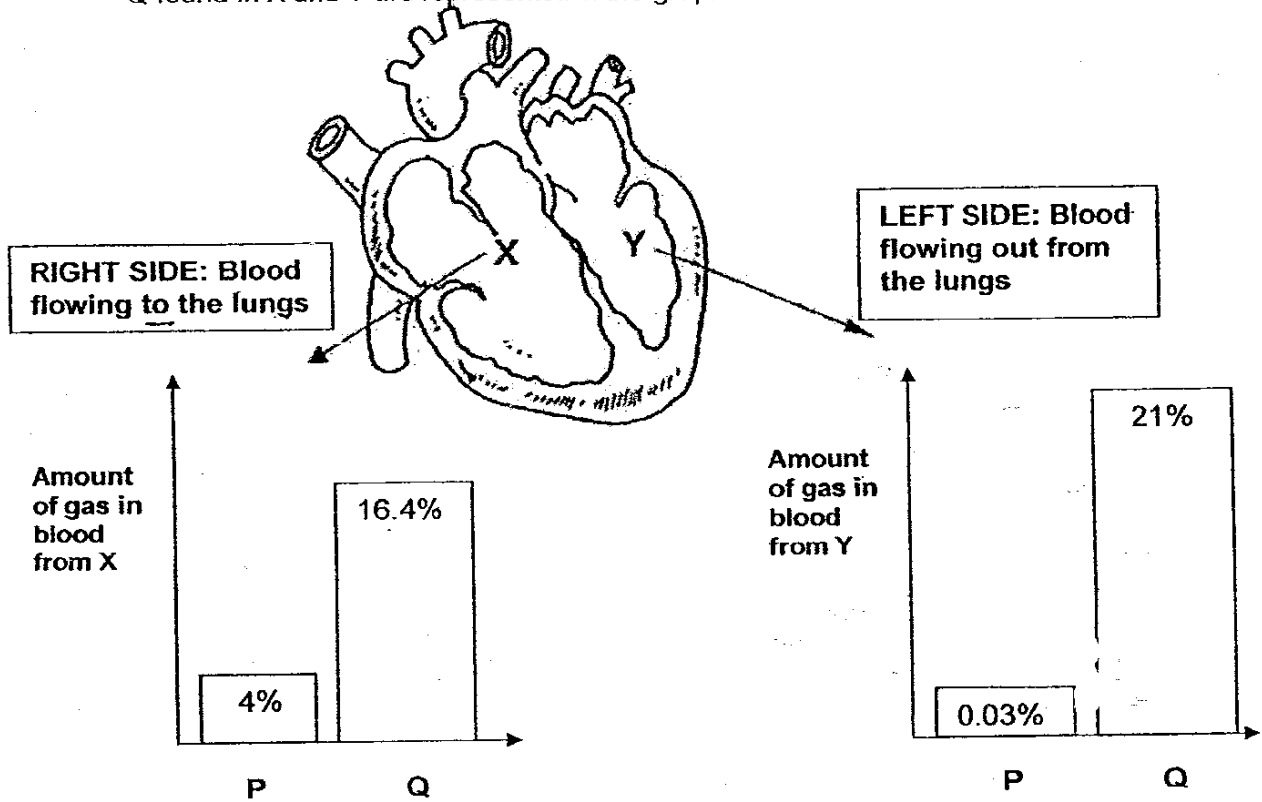
Total Time for Booklets A and B : 1h 45 min

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Section B1 (19 marks): For questions 26 to 32, write your answers in the spaces provided.

26. The diagram below shows a human heart and its four chambers. Two chambers are labelled X and Y. Gases P and Q are found in the chambers. The amount of P and Q found in X and Y are represented in the graphs below.



(a) Identify gas P and Q (2m)

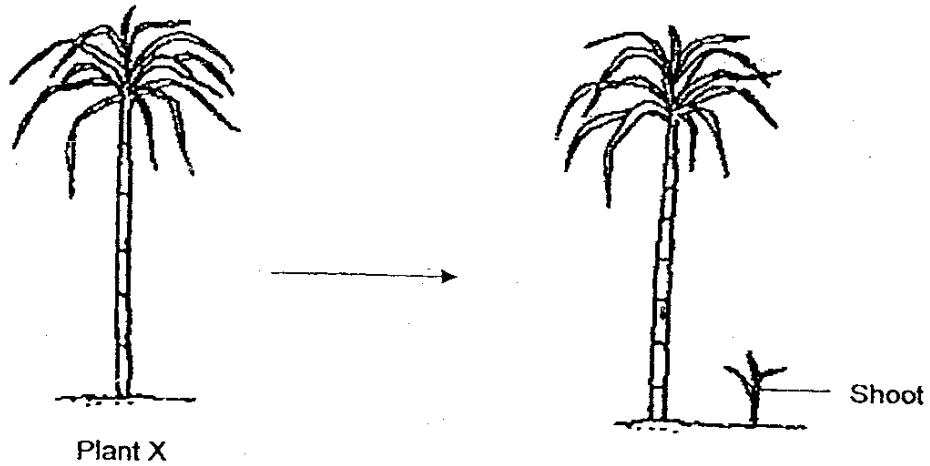
(i) P is _____

(ii) Q is _____

(b) Which system works together with the circulatory system to ensure these gases are circulated around the body? (1m)

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27. Study the diagram of Plant X.

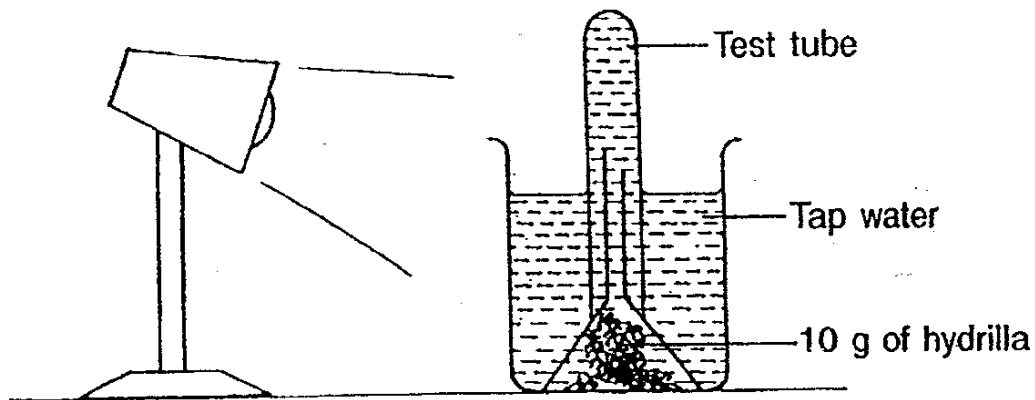


(a) It was noted that Plant X did not bear flowers or fruits and yet a shoot was seen growing near the plant. What can be concluded about the method of reproduction of Plant X? (1m)

(b) (i) What obvious disadvantage can arise from such a method of reproduction? (1m)

(ii) What are the undesirable effects of such a method of reproduction? (1m)

28. May Cheng set up an experiment in a dark room as shown in the diagram below to find out whether the intensity of light affects the rate of photosynthesis. After some time, she noticed bubbles were collected at the top of the test tube. At the end of two hours, she measured the amount of gas produced by the hydrilla. She did this by noting the height of the air column in the test tube. She repeated the above steps twice, each time using a different coloured light bulb.



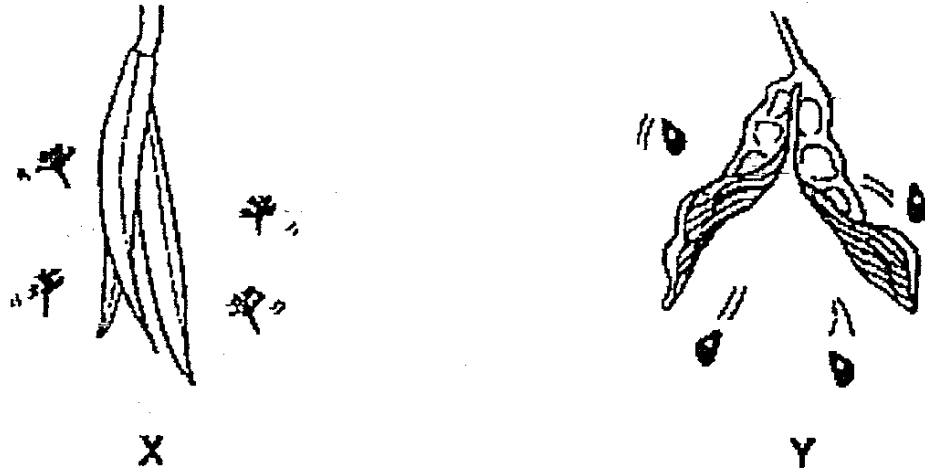
- (a) Name the gas collected at the top of the test tube. (1m)

- (b) Her teacher commented that the above set-up will not let her fulfill the objective of the experiment. What has to be changed in her set-up in order for her to fulfill her aim? (1m)

- (c) State the relationship between the intensity of light and the amount of gas collected in 2 hours. (1m)

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29. The diagram below shows two fruits, X and Y, dispersing their seeds when the fruit wall splits.

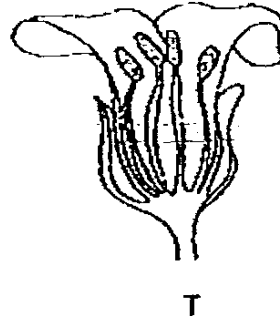
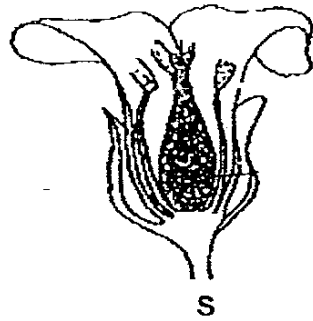


- (a) Based on your observations of the seeds, which seeds are dispersed further? (1m)

- (b) Explain your answer in (a). (1m)

30. The diagrams below show the cross-sections of two flowers.

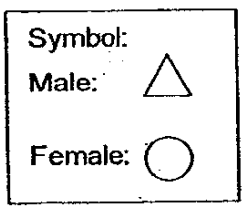
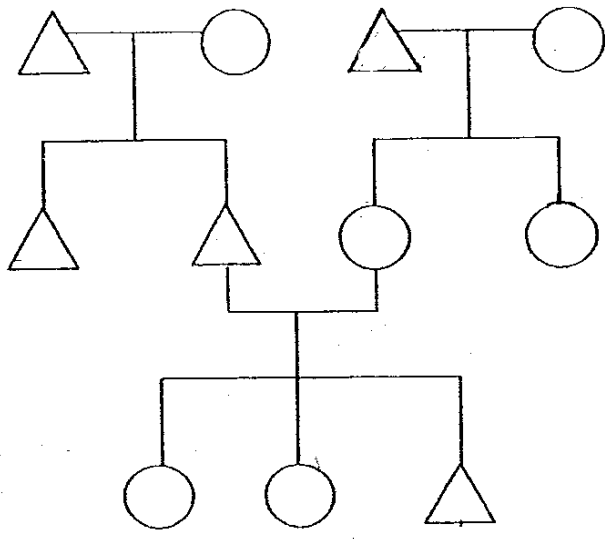
Self-pollination occurs within the same flower at the right conditions.



(a) Which flower can self-pollinate? Give a reason for your answer. (2m) ...

(b) On one of the flowers, draw a line and label to show the part that develops into a fruit after pollination. (1m)

31. Study the family tree below.

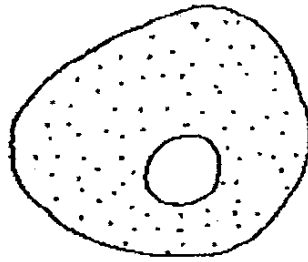


- (a) Peter has one son-in-law. Shade the shape that represents Peter. (1m)
- (b) How many grandchildren does Peter have? (1m)

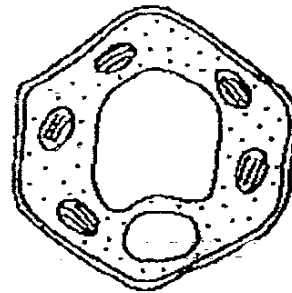
- (c) Peter's grandson recently got married. Add to the family tree to show the new addition. (1m)

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32. The diagram below shows two cells taken from two places.



Cell X



Cell Y

From the above information, one could tell that X is an animal cell while Y is a plant cell.

- (a) Some parts of the plant cell is not found in the animal cell. Name one part. (1m)

A leaf of a green plant was tested with iodine solution for the presence of starch.

- (b) What has to be removed in order for the test to be successful? (1m)

METHODIST GIRLS' SCHOOL (PRIMARY)

PRIMARY 5

END-OF-YEAR EXAMINATION 2007

SCIENCE

BOOKLET B2

Physical Science

SECTION	MARKS
B2 (21 marks)	

NAME : _____ ()

CLASS : Pri. 5. _____

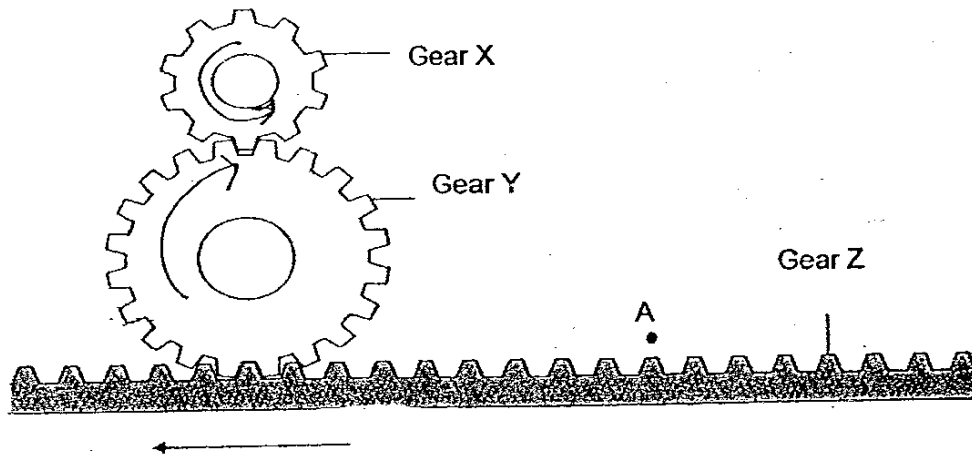
Total Time for Booklets A and B : 1h 45 min

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Section B2 – Physical Science (21 marks)

For questions 33 to 41 write your answers in the space provided.

33. The diagram below shows three gears X, Y and Z. X has 10 teeth while Y has 20 and Z has 200.
 (In the diagram below, only one section of Gear Z is shown)



Gear Z moves in the direction as shown in the arrow above. If 80 teeth in Gear Z pass point A, fill in the information in the table below. (2 m)

	Number of turns	Direction of rotation
Gear X		
Gear Y		

34. Ryan carried out an experiment to find out the effort needed to lift up some loads using two different types of pulleys. He recorded his results in the form of a table as shown below.

	Pulley A	Pulley B
Load Lifted (g)	Effort Needed (g)	Effort Needed (g)
200	250	150
400	450	250
600	650	350
800	850	450

- (a) With an effort of 300 g, how much load can be lifted by each type of pulley? (1 m)

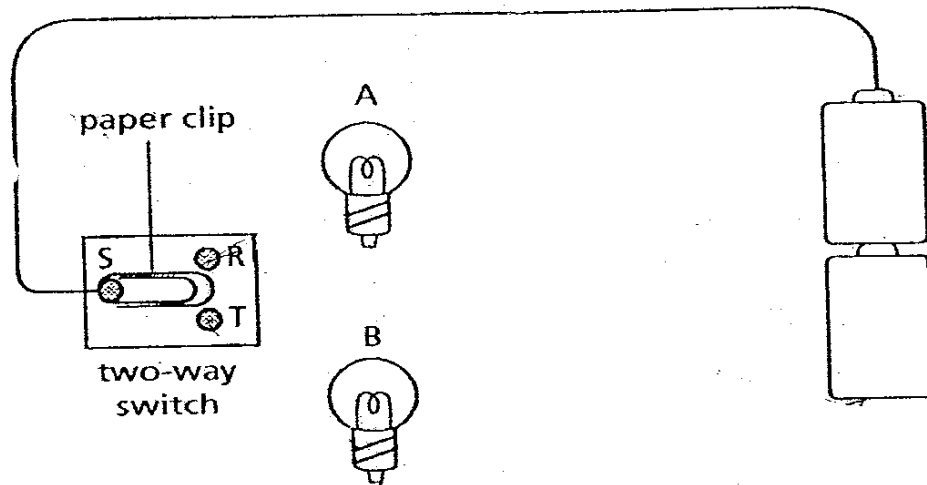
Pulley A : _____

Pulley B: _____

- (b) Which pulley would the distance moved by the effort be greater than the distance moved by the load? ($\frac{1}{2}$ m)

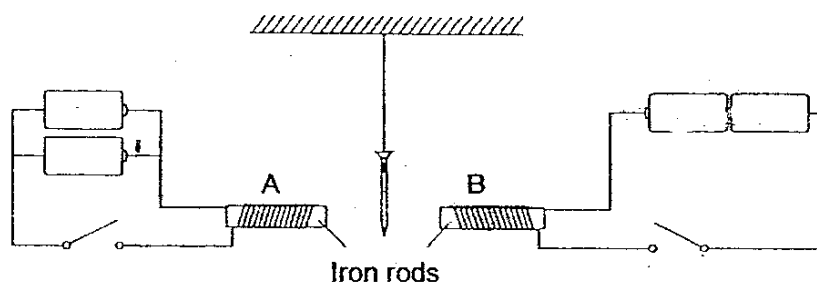
- (c) Which pulley, A or B, is found on a flag pole? ($\frac{1}{2}$ m)

35. Teri set up a circuit shown below. There is a two-way switch which is made up of three thumbtacks, R, S and T. They are fixed on a piece of styrofoam. A paper clip is fixed such that it is able to touch either R or T to close the circuit.



- (a) Draw wires on the diagram so that Teri can choose to light up either one of the bulbs by moving the paper clip between R and T. (1 m)
- (b) Based on your drawing above, should the bulbs be arranged in parallel or series? (1 m)

36. Lynn set up a circuit with an iron nail suspended between two identical iron rods, A and B, which had an equal number of coils of wire around each.

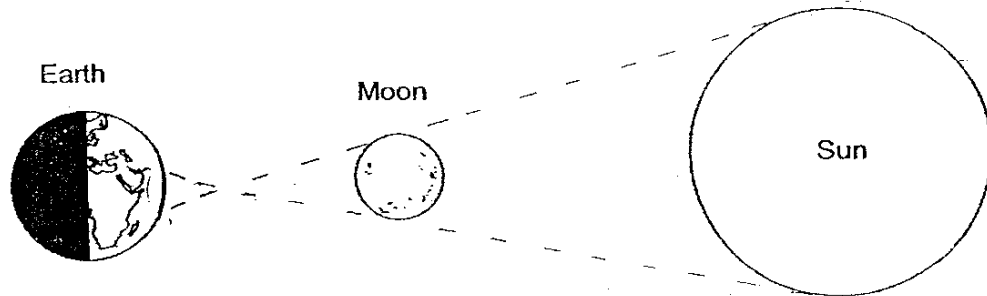


- (a) If both electric set-ups are closed at the same time, what will happen to the iron nail? (1 m)

- (b) Explain your answer to (a) (1 m)

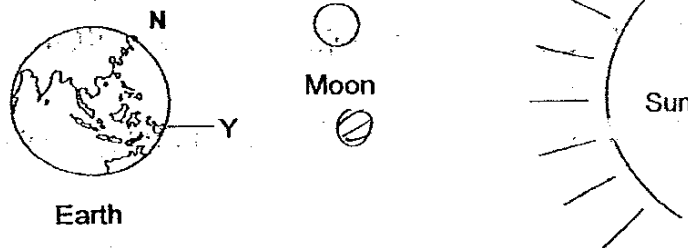
- (c) What can Lynn do if she wanted the nail to behave in the opposite direction without changing the number of batteries or the circuit arrangements? (1 m)

37. When the Earth, Moon and the Sun are in a straight line, as shown in the diagram below, the Sun will be completely blocked by the Moon and will not be visible in the sky.



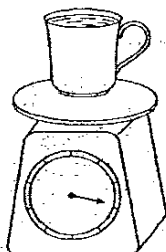
- (a) Is the blocking of the Sun by the Moon observed during the day or night? Explain your answer. (1 m)

- (b) On the diagram above, shade the specific area on Earth where the shadow of the Moon will be cast and label it X. (1 m)
- (c) In the diagram below, The moon, Earth and Sun form a straight line when viewed from the North Pole (represented by N)

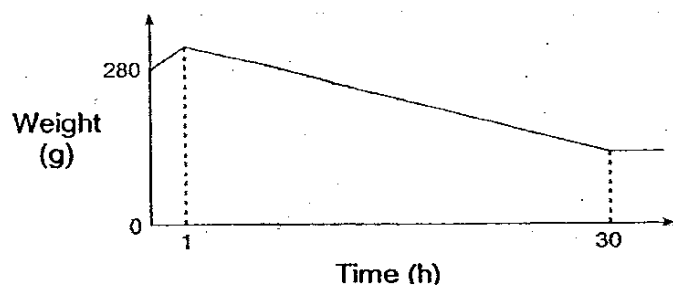


- What phase of the Moon will be observed by someone living in Country Y? (1 m)

38. Suresh poured 200 ml of ice-cold water into an 80 g cup and placed it on a weighing machine as shown below. He recorded the mass every hour.



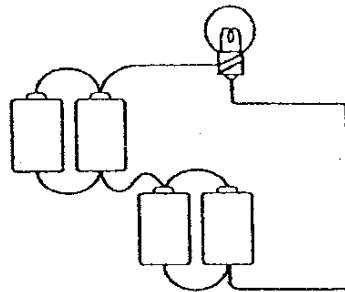
The result of his experiment is shown in the graph below.



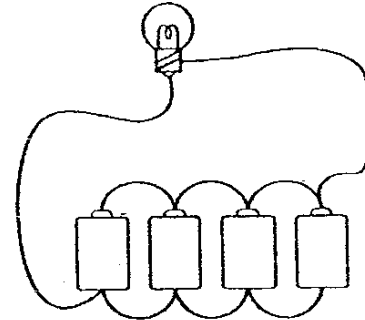
- (a) What caused the slight increase in mass during the first hour as shown in the graph above? (2 m)

- (b) What may have caused the mass to decrease after the first hour? (1 m)

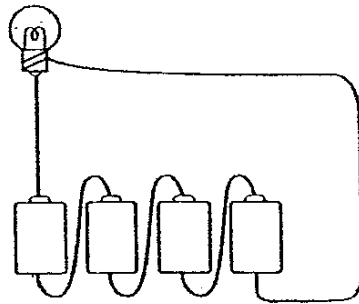
39. Alex, Brenda, Siti and Rani were each given four batteries, a bulb and some wires to make a closed circuit. The diagrams below show how each of them had arranged his/her batteries and bulbs.



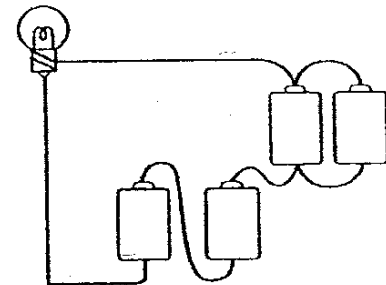
Alex



Brenda



Siti



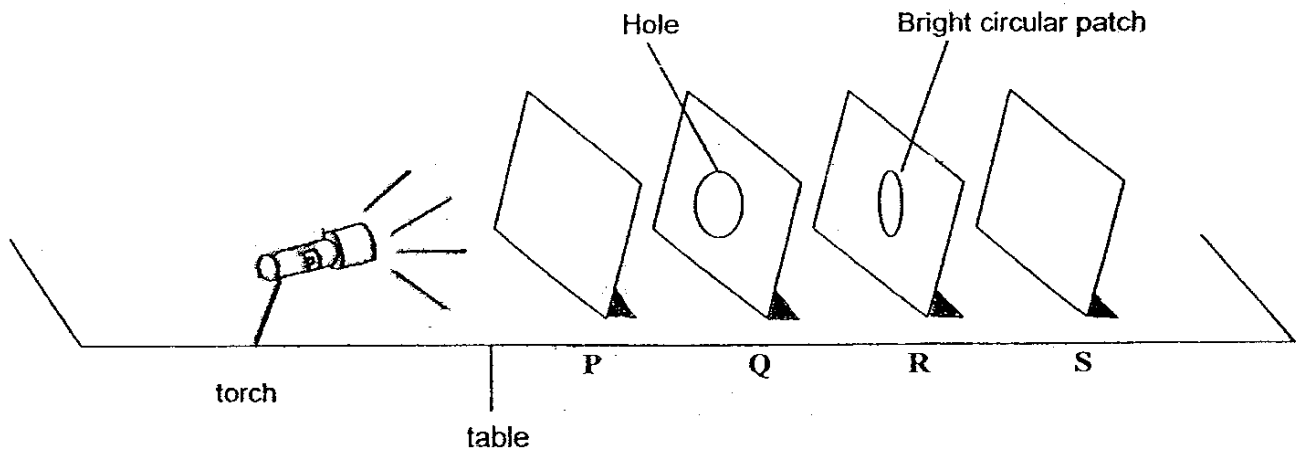
Rani

- (a) Whose arrangement would ensure the supply of light would last the longest? (1 m)

- (b) Arrange the bulbs from the brightest to the dimmest. Write the names of the pupils in the boxes below. (1 m)

Brightest	→	←	Dimmest

40. The following experiment was carried out in a dark room. Four sheets P, Q, R and S of different materials were arranged in a straight line on a table as shown below, equal distance between each. When the torch was switched on, a bright circular patch of light was seen clearly on sheet R only.



- a) Materials can be either transparent, translucent or opaque. Based on the experiment above, identify P, Q and R.

(1m)

P: _____

Q: _____

R: _____

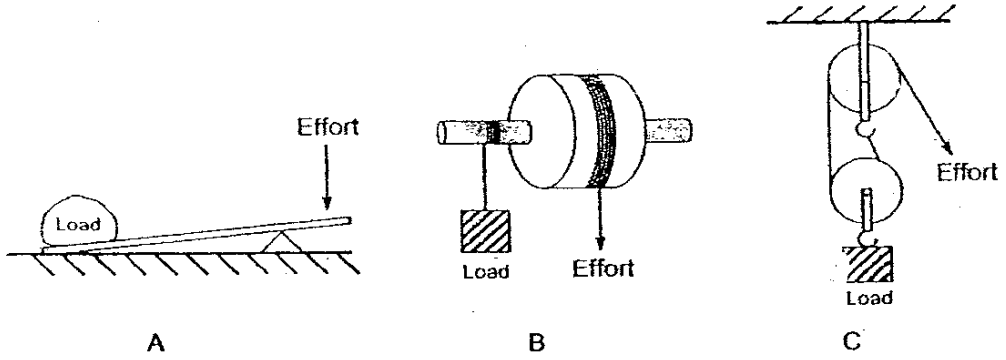
- b) What material could Sheet Q be made of?

($\frac{1}{2}$ m)

- c) What property of light is demonstrated in the above experiment?

($\frac{1}{2}$ m)

41. The diagram below shows three simple machines.



(a) Write down one similarity that Machines A, B and C has. (1 m)

(b) Name two ways Machine A is different from B and C. (1 m)

Difference 1 : _____

Difference 2 : _____

END OF PAPER

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MGS Primary School

Primary 5 Science SA2 Exams (2007)

Answer Keys

SECTION A : (60 MARKS)

Qn no.	Ans
1	3
2	4
3	4
4	1
5	2
6	1
7	1
8	4
9	1
10	2

Qn no.	Ans
11	3
12	1
13	3
14	2
15	3
16	4
17	2
18	3
19	2
20	3

Qn no.	Ans
21	1
22	2
23	1
24	3
25	3

SECTION B (40 MARKS)

26a.(i) Carbon dioxide
(ii) oxygen

26b. The respiratory system.

27a. By suckers

27b.(i) Overcrowding results when young plants grow from parent plants.

(ii) They compete for sunlight, water, nutrients and space.

28a. Oxygen.

28b. Coloured light bulb caused to while fluorescent light of different wattage evolved/longer.

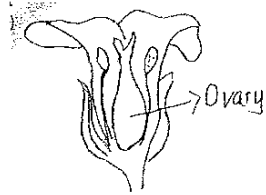
28c. Stronger the intensity of light the greater the amount of oxygen gas the height of the air column the test tube.

29a. Seed X

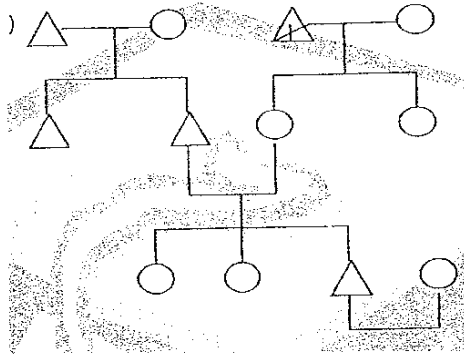
29b. As the seeds in X have a wing-like structure, the wind would carry them away and thus it will be dispersed even further.

30a. Flower S. As there are both male and female parts of a flower in the flower, the flower can self-pollinate.

30b.



31a.



31b. three

32a. The chloroplasts.

32b. The chlorophyll.

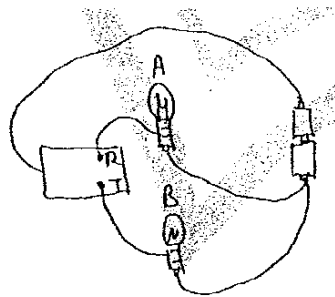
33. X : 8 Anti-clockwise
Y : 4 Clockwise

34a. A : 250g B : 500g

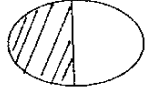
34b. Pulley B

34c. Pulley A

35a.



35b. In parallel.

- 36a. It would be attracted to B.
 36b. As the batteries in B are arranged in series, there will be more current flowing to B and thus it will be a strong electric magnet.
 36c. Lynn could increase the amount of coils around A.
- 37a. Daytime, since that side will be facing earth.
 37b. 
- 37c. The crescent.
- 38a. Water vapour from the surrounding condensed into water droplets on the cold cup and increased the mass.
 38b. The water evaporated and caused the mass to decrease.
- 39a. Brenda's
 39b. Siti, Rani, Alex, Brenda
- 40a. P : transparent
 Q : opaque
 R : opaque
 40b. Wood
 40c. Light travels in a straight line.
- 41a. They all change the direction of force.
 41b. (i) In A, effort moves a shorter distance than in B and C.
 (ii) Effort required in A is more than B and C.