

**SINGAPORE CHINESE GIRLS' SCHOOL
FIRST SEMESTRAL ASSESSMENT 2008
PRIMARY 6 SCIENCE**

Name: _____ () Date: _____

Class: Primary 6 (SY) / C / G / SE / P

**SCIENCE
BOOKLET A**

30 questions

60 marks

Total Time For Booklets A & B : 1 h 45 min

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

Part I (60 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. The following are the descriptions of Animal X.
- Lays eggs in water
- Has 3 stages in its life cycle

Which of the following statements about Animal X is/are definitely true?

- A: Animal X is not a mosquito.
B: The adult of Animal X lives on land.
C: The young of Animal X lives in water.
D: The young of Animal X look like its adult.

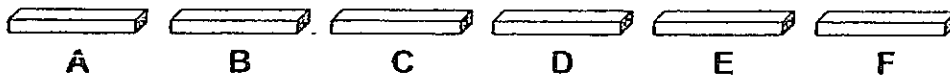
- 1) A only
2) A and C only
3) A, C and D only
4) B, C and D only

2. What causes the cycle of day and night?

- A: Rotation of the Sun.
B: Rotation of the Earth
C: Revolution of the Earth round the Sun.
D: Revolution of the Moon round the Earth.

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

3. Ali conducted an experiment to test the hardness of Materials A, B, C, D, E and F. He recorded his observations as follows.



- B can be scratched by A.
C can be scratched by E.
A can be scratched by D.
F cannot be scratched by B.
A cannot be scratched by F.
C cannot be scratched by D.

Which material can be scratched by C but cannot be scratched by A?

- 1) B
2) D
3) E
4) F

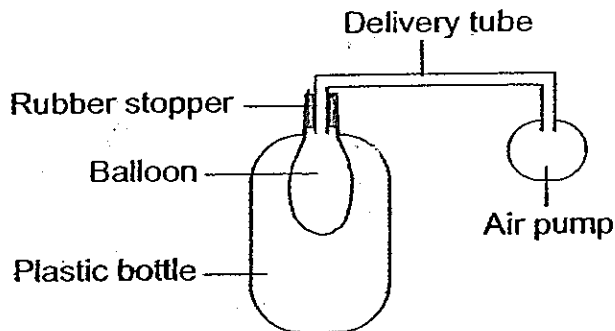
4. The plants below are grouped according to their characteristics.

Group A	Group B	Group C	Group D
Papaya Mango P	Coconut Mangrove Q	Lallang Vernonia R	Rubber Balsam S

Which of the following ^{plants} animals are represented by P, Q, R and S respectively?

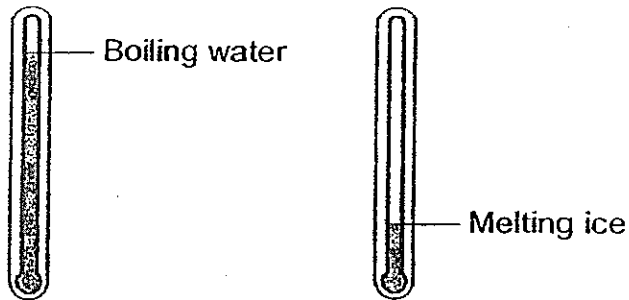
	P	Q	R	S
1)	Mimosa	Nipah	Saga	Casuarina
2)	Long bean	Yellow flame	Angsana	Cucumber
3)	Love grass	African tulip	Cupid's shaving brush	Flame of the forest
4)	Rambutan	Pong Pong	Shorea	Lady's finger

5. Lynn tried to pump air into the balloon as shown in the diagram below. After 2 pumps, she found that she could not pump any more air into the balloon. In order to pump more air into the balloon, which of the following methods should she use?



- 1) Use a longer delivery tube.
- 2) Use a more powerful pump.
- 3) Make a hole in the plastic bottle.
- 4) Immerse the plastic bottle into hot water.

6. The diagrams below show the levels of the mercury in the thermometer when it is placed in boiling water and when it is placed in a beaker of melting ice.



Which of the following best shows the levels of the mercury in the thermometer when it is placed in water at 70°C and in a beaker of ice with salt added to it respectively?

1)

Water at 70°C	Beaker of ice with salt added to it

3)

Water at 70°C	Beaker of ice with salt added to it

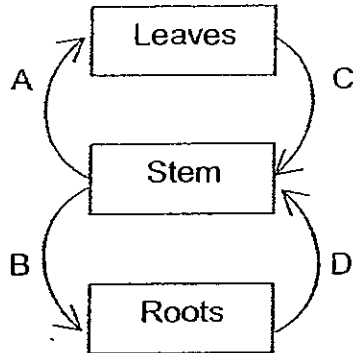
2)

Water at 70°C	Beaker of ice with salt added to it

4)

Water at 70°C	Beaker of ice with salt added to it

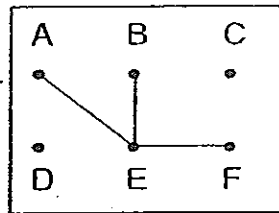
7. Which 2 arrows represent the transportation of food made by the plant?



- 1) A and B
- 2) A and D

- 3) B and C
- 4) C and D

8. Osman use a circuit tester below to test on the different points of the circuit card below.



Which one of the following correctly shows the results of Osman's test?

1)

Points	Does the bulb light up?
AB	No
BC	No
CD	No
DE	No
EF	Yes
AF	Yes
BD	No

3)

Points	Does the bulb light up?
AB	Yes
BC	No
CD	No
DE	No
EF	No
AF	Yes
BD	Yes

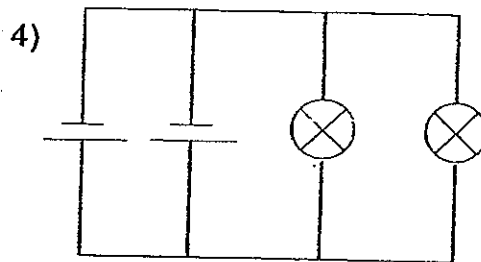
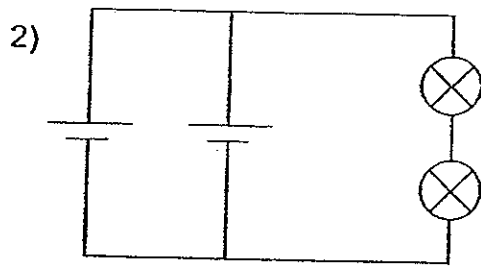
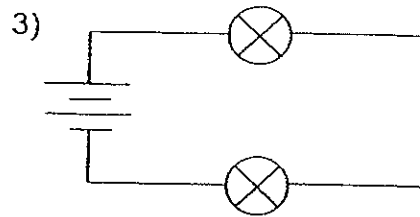
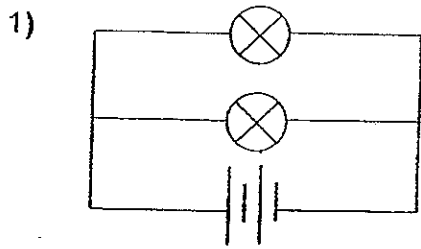
2)

Points	Does the bulb light up?
AB	Yes
BC	No
CD	No
DE	Yes
EF	No
AF	Yes
BD	No

4)

Points	Does the bulb light up?
AB	Yes
BC	No
CD	No
DE	No
EF	Yes
AF	Yes
BD	No

9. Which one of the following set-ups are the batteries connected in parallel while the bulbs are connected in series?



10. Which of the following groups of animals form a population?

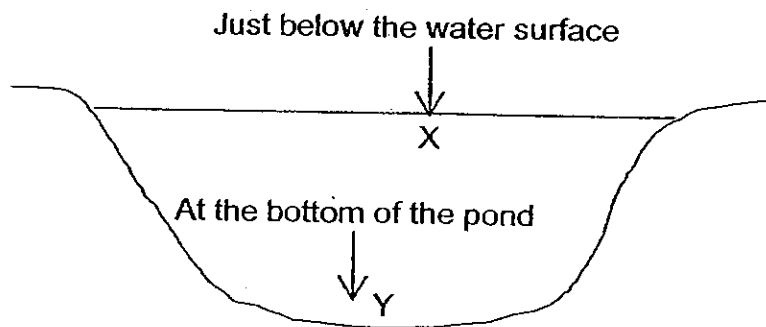
- A: millipede, centipede, earthworm
 B: caterpillar, butterfly, butterfly pupa

- C: toad, tadpole, frog
 D: guppy, swordfish, angelfish

- 1) A only
 2) A and C only

- 3) B and D only
 4) A, B, C and D

11. Below is a cross-section of a pond. Mr Lim indicated the location of which Organisms X and Y are found at the same spot over 48 hours.

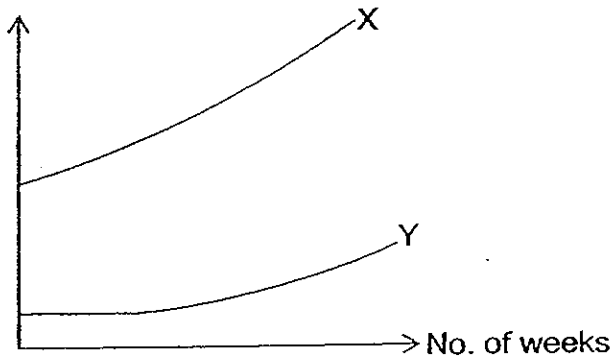


Which of the following best represents how Organism X and Y are adapted to breathe in the water?

	X	Y
1)	Carry an air bubble	Skin
2)	Breathing tube	Carry an air bubble
3)	Gills	Breathing tube
4)	Breathing tube	Gills

12. Linda put Organism X and Organism Y into an aquarium. Organism X is the prey of Organism Y. She took note of the number of organisms left in the aquarium at the end of each week.

No. of fish



Based on the graph above, which of the following statements are true?

- A: Organism X started to reproduce before Organism Y.
 B: Organism X reproduced faster than Organism Y could eat them.
 C: There are more Organism Y than Organism X at the end of the experiment.
 D: There are more Organism X than Organism Y at the start of the experiment.

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

13. Sue wanted to find out if the amount of soil would affect the growth of plants. She set up the experiment as shown below.

Variables	Pot X	Pot Y	Pot Z
Type of plant	Green bean	Green bean	Green bean
Number of plants	15	15	15
Height of plant	5cm	10cm	15cm
Amount of soil	500cm ³	500cm ³	500cm ³
Type of soil	Garden	Sandy	Clayey

What must Sue do to improve on her experiment?

- A: Use plants of same height.
 B: Use the same type of soil for each pot.
 C: Use different amount of soil for each pot.
 D: Use different number of plants for each pot.

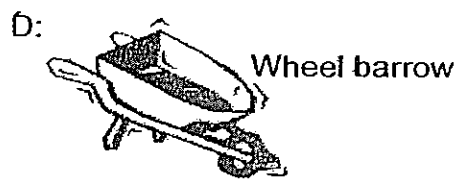
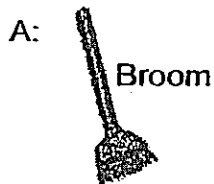
- 1) A and B only
 2) C and D only
 3) A, B and C only
 4) A, B, C and D

14. Which of the following are structural adaptations of animals?

- A: Bears hibernate during winter.
- B: Penguins huddle together to keep warm.
- C: The stripes on tigers make it difficult for prey to detect them.
- D: The non-poisonous king snakes have similar bands on their bodies as the poisonous coral snakes

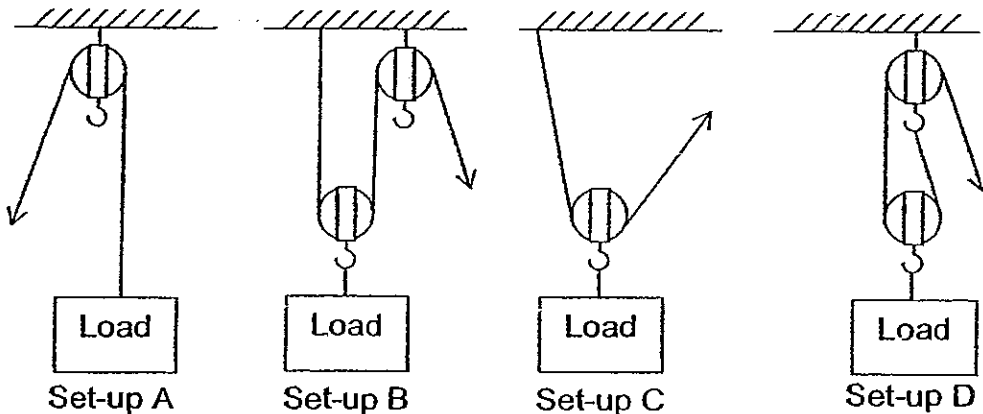
- 1) A and B only
- 2) C and D only
- 3) A, B and C only
- 4) A, B, C and D

15. Which of the following levers do **not** enable us to use a smaller effort to overcome a greater load?



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

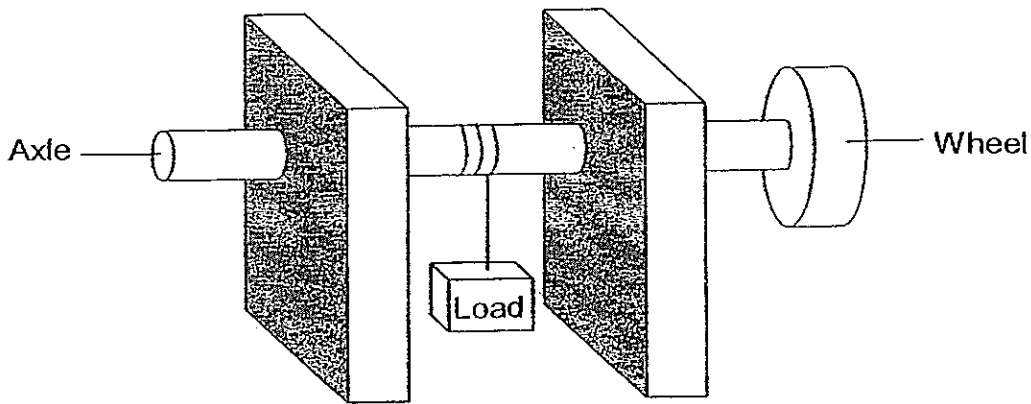
16. In each of the set-ups below, the loads have the same mass.



Which of the following statements about the set-ups above is true?

- 1) Effort used is reduced in Set-up B and Set-up C only.
- 2) Direction of force is changed in Set-ups A, B and C only.
- 3) Effort used in Set-up A is more than the effort used in Set-up C
- 4) Distance moved by the effort and load is the same for Set-up A and Set-up D.

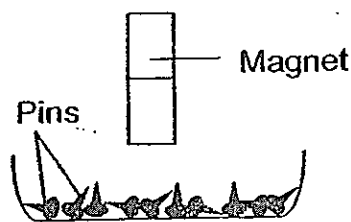
17. The diagram below shows a wheel and axle set-up to lift a load.



Wheel	Effort needed
A	600g
B	1050g
C	450g
D	900g

Which reading is taken when the largest wheel was used?

18. Xiao Ming conducted an experiment using different magnets.



He recorded the results of his experiment in the table below.

Magnet	Number of pins attracted		
	1 st try	2 nd try	3 rd try
A	4	3	4
B	3	3	3
C	2	1	3
D	5	4	4

Based on the results of Xiao Ming experiment, which is the strongest magnet?

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

19. Which of the following statements about forces are correct?

- A: A force can be felt.
- B: A force cannot be seen
- C: A force always causes things to move.
- D: Only some forces can act at a distance.

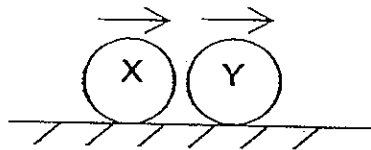
- 1) A and B only
- 2) C and D only
- 3) A, B and C only
- 4) A, B and D only

20. Which of the following forces can exert both a push or a pull on other objects at a distance?

- A: Magnetic force
- B: Frictional force
- C: Gravitational force

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

21. 2 balls moving at the same speed in opposite directions collided with each other and moved in the direction as shown below.



Which of the following statements is/are true?

- A: Y has a larger mass than X.
- B: Y was moving in a different direction before the collision.
- C: X was moving in the same direction before and after the collision.

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

22. Which of the following statements about photosynthesis is/are true?

- A: Water is produced during photosynthesis.
- B: Energy is released during photosynthesis.
- C: Photosynthesis can take place in the stem of some plants.
- D: During photosynthesis, carbon dioxide is removed from the air.

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

23. Which of the following correctly shows the difference between inhaled air and exhaled air?

	Inhaled air	Exhaled air
1)	More dust	Less dust
2)	More water vapour	Less water vapour
3)	Higher temperature	Lower temperature
4)	More carbon dioxide	Less carbon dioxide

24. Which of the following are renewable sources of energy?

A: Sun
B: Wind

C: Coal
D: Moving water

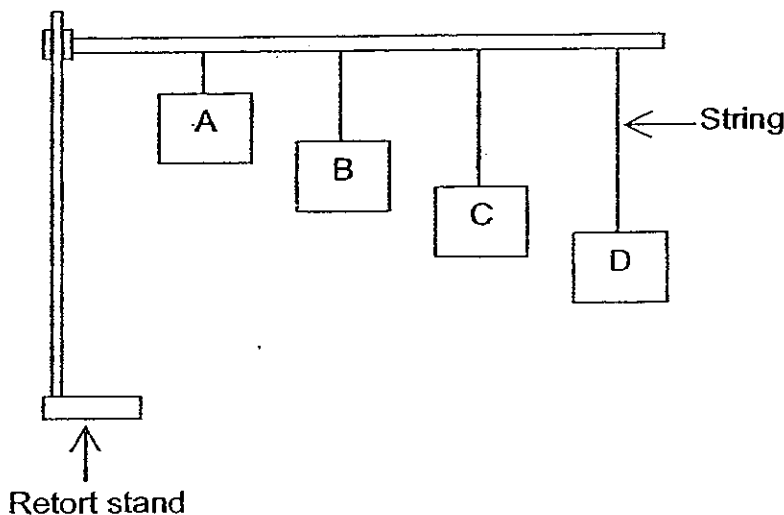
1) A and B only
2) C and D only

3) A, B and D only
4) B, C and D only

25. Which one of the following shows the correct energy changes that will take place when we hit a nail with a hammer?

- 1) potential energy \longrightarrow heat energy + sound energy
 2) kinetic energy \longrightarrow potential energy \longrightarrow heat + sound energy
 3) potential energy \longrightarrow electrical energy \longrightarrow heat + light energy
 4) potential energy \longrightarrow kinetic energy \longrightarrow kinetic + heat + sound energy

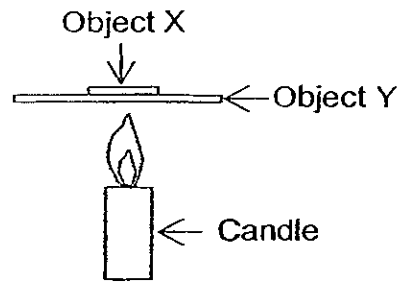
26. Sam hung boxes of the same mass at different heights on a retort stand. Which of the following boxes will have the most kinetic energy after each string is cut?



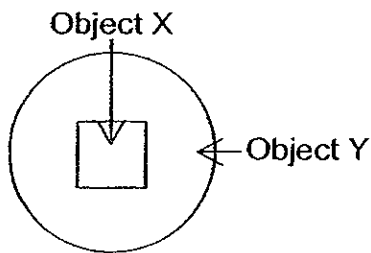
1) A
2) B

3) C
4) D

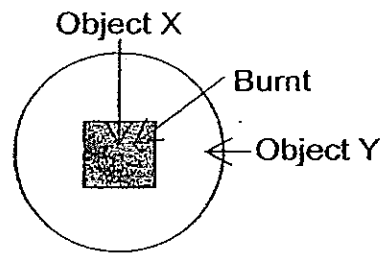
27. Kim placed Object X on top of Object Y and heated them over a candle flame.



The diagrams below show the appearance of Object X and Object Y before and after heating



Top view of object X and Object Y before heating



Top view of object X and Object Y after heating

Which one of the following correctly shows the properties of Object X and Object Y.

	Object X	Object Y
1)	Good conductor of heat	Poor conductor of heat
2)	Good conductor of heat	Good conductor of heat
3)	Poor conductor of heat	Poor conductor of heat
4)	Poor conductor of heat	Good conductor of heat

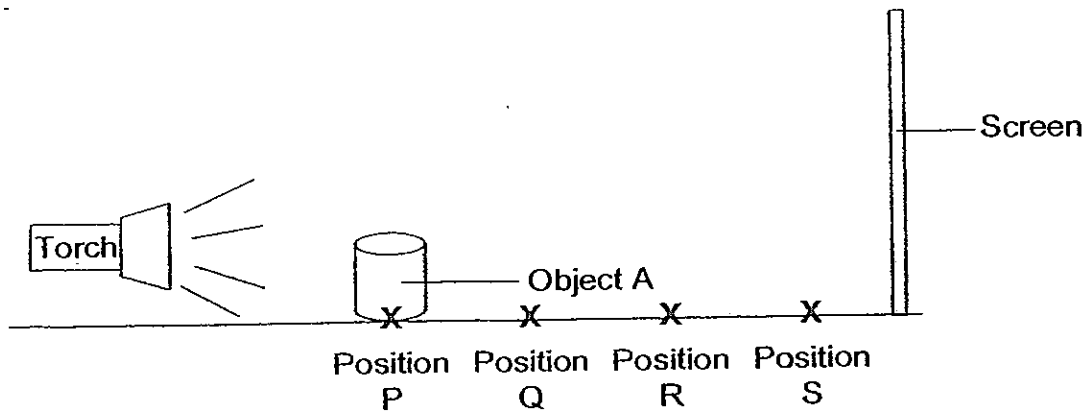
28. Minah wanted to find out if colour or material has a greater impact on the amount of heat an object can absorb. If she can only use 3 cups to conduct her experiment, which of the following cups should she use?

Cups	Colour	Material
A	White	Iron
B	Black	Steel
C	Black	Iron
D	White	Copper
E	Black	Copper
F	White	Steel

- 1) A, D and E
- 2) A, D and F

- 3) B, C and D
- 4) B, C and E

29. Object A is placed in front of a torch to cast a shadow on the screen as shown below.

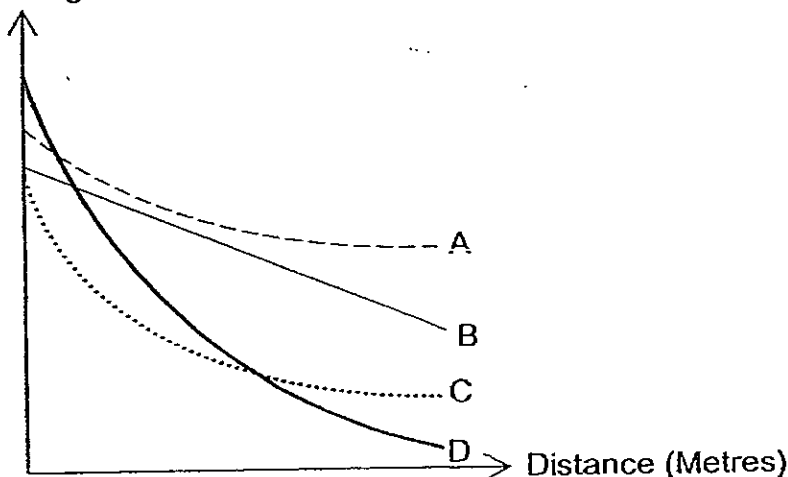


When Object A is at Position P, the size of the shadow cast on the screen is 15cm. Which one of the following correctly shows the size of the shadow cast on the screen when Object A is placed at Position Q, Position R and Position S?

	Size of shadow		
	Position Q	Position R	Position S
1)	11 cm	13cm	15cm
2)	17cm	15cm	13cm
3)	13cm	11cm	9cm
4)	17cm	19cm	21cm

30. A factory wants to make reflective strips to be pasted on bicycles so that it will be safer for cyclists to travel at night. The factory conducted a test to find out which is the most suitable material to make the reflective strips. A graph of the results of the experiment is as shown below.

Amount of light reflected



Which material should the factory choose for making the reflective strip?

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

**SINGAPORE CHINESE GIRLS' SCHOOL
FIRST SEMESTRAL ASSESSMENT 2008
PRIMARY 6 SCIENCE**

Name: _____ () Date: _____

Class: Primary 6(S) / C / G / SE / P

Components	Marks Obtained	Total Marks
Booklet A		60
Booklet B		40
Total		100

Parent's Signature

**SCIENCE
BOOKLET B**

16 questions

40 marks

Total Time For Booklets A & B : 1 h 45 min

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

FOLLOW ALL INSTRUCTIONS CAREFULLY

Name: _____ ()

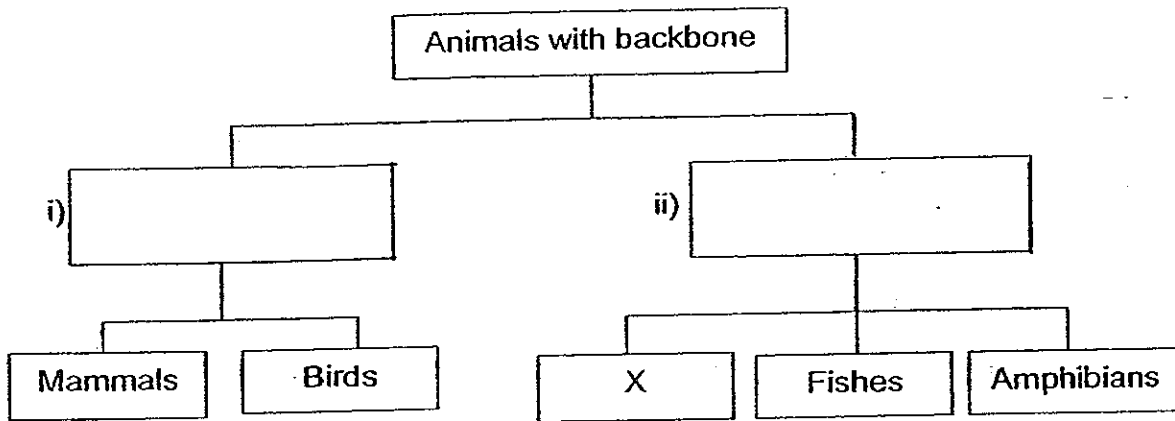
Date: _____

Class: Primary 6 SY / C / G / SE / P

Part II (40 marks)

Answer all the following questions.

31. Study the classification chart below.



- a) Fill in suitable headings in the boxes labelled (i) and (ii) in the classification chart above. (1m)
- b) What is the group of animals represented by 'X'? (1m)
- c) Give a reason why the earthworm cannot be placed in the classification chart above. (1m)

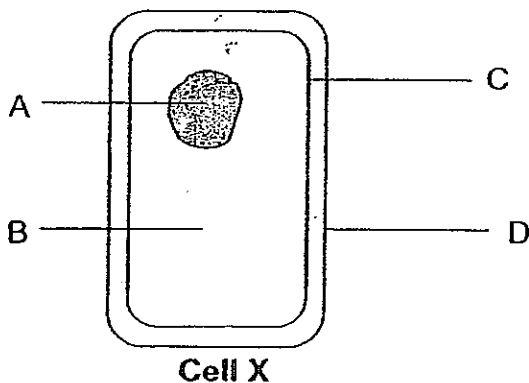
32. Study the table below.

Properties Materials	Magnetic	Conductor of electricity	Waterproof	Good conductor of heat	Breakable
V	✓	✓	✓	✓	
W		✓	✓	✓	
X					✓
Y	✓	✓	✓	✓	
Z			✓		✓

Based on the information in the table above, put a tick (✓) in the appropriate column to indicate if each of the following statement is 'True', 'False' or 'Not possible to tell'. (2m)

Statements	True	False	Not possible to tell
a) Magnetic materials are also good conductors of electricity.			
b) Only non-conductors of electricity are breakable.			
c) Waterproof materials can float on water.			
d) Material X is waterproof and breakable.			

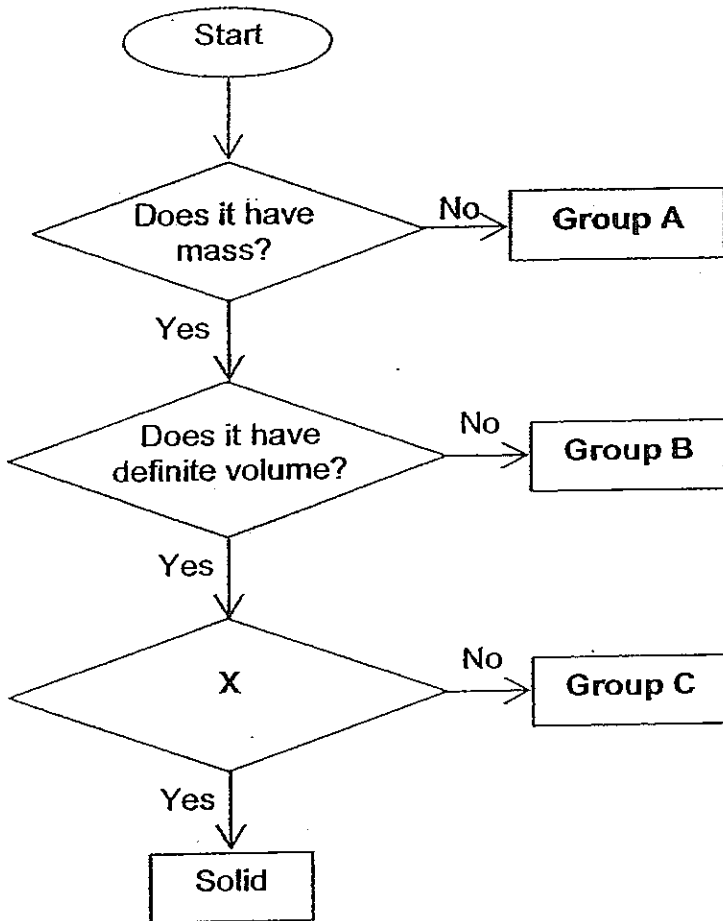
33. Study the diagram below.



a) Which part of Cell X tells you that it is a plant cell? Why? (1m)

b) Is Cell X able to make food? Give a reason for your answer. (1m)

34. Study the flowchart below and answer the questions based on the flowchart.

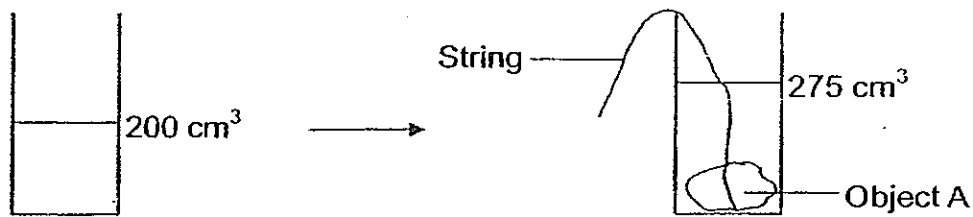


a) What should be the question that is to be placed in 'X'? (1m)

b) Which group, A, B or C should 'electricity' belong to? Give a reason for your answer. (1m)

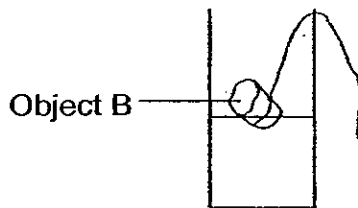
35. Siti was given the following items to conduct an experiment:
- Measuring cylinder
 - A ball of string
 - 500 cm^3 of water
 - Object A
 - Object B

She was supposed to measure the volume of Object A and Object B with the items given. She poured 200 cm^3 of water into the measuring cylinder. She then tied a string to Object A before lowering it into the measuring cylinder with 200 cm^3 of water.

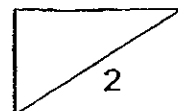


- a) What is the volume of object A (ignoring the string)? (1m)

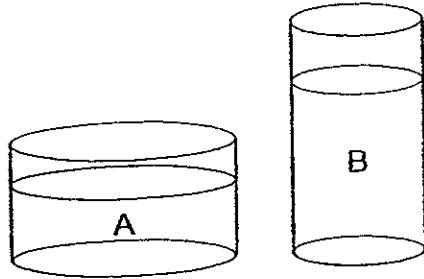
Siti took out Object A from the water and lowered Object B that has been tied with a string into the water. She observed that Object B did not sink in the water and therefore was unable to measure the volume of Object B accurately.



- b) Using only the given items, explain how Siti can find out the volume of Object B accurately. (1m)

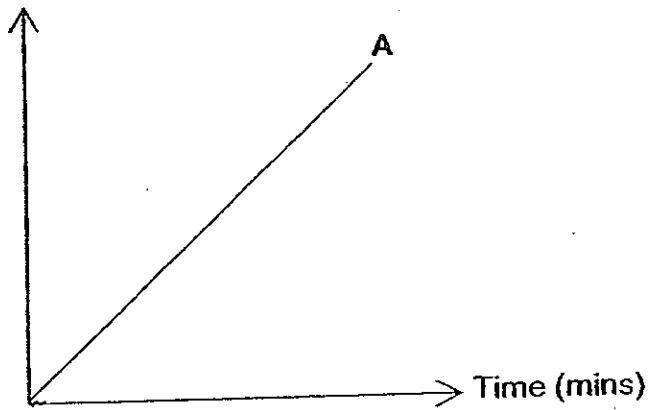


36. John filled Container A and Container B with the same amount of water. He placed both containers near a window and monitored the amount of water evaporated in each container over a period of time.



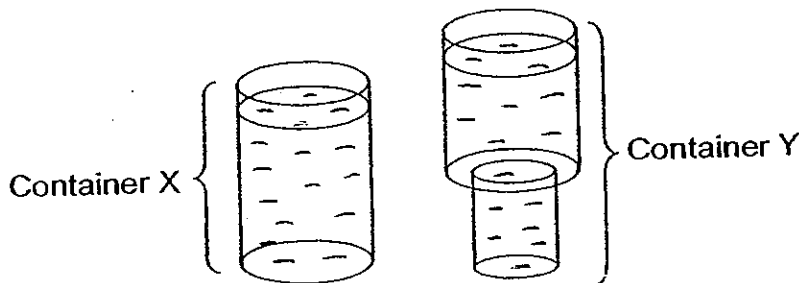
Line A in the graph below shows the relationship between the time and the amount of water evaporated from container A.

Amount of water evaporated (ml)



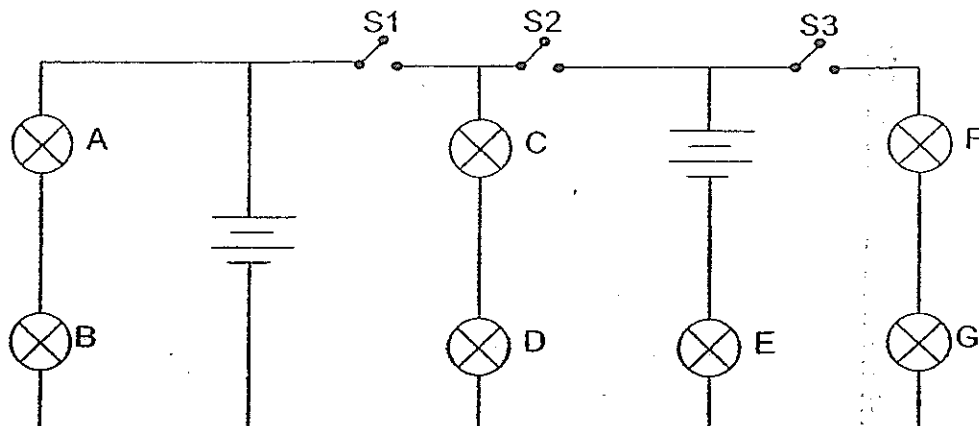
- a) In the graph above, draw and label Line B that shows the relationship between the time and the amount of water evaporated from container B. (1m)

John conducted another experiment by filling Container X and Container Y with the same amount of water and placed both containers under a fan.

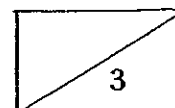


- b) John observed that the water in Container X evaporated completely before the water in Container Y. Give a reason for John's observation. (1m)

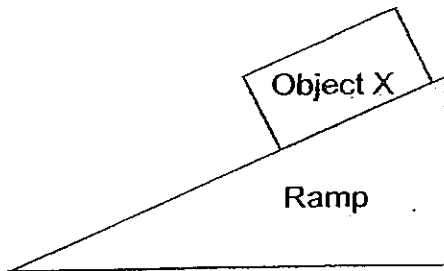
37. Study the circuit diagram below.



- a) If all the switches are closed and Bulb E is fused, how many bulbs will light up? (1m)
-
- b) If all the switches are open, which are the bulbs that will light up? (1m)
-
- c) Which bulb/s do/does Switch 3 control? (1m)
-

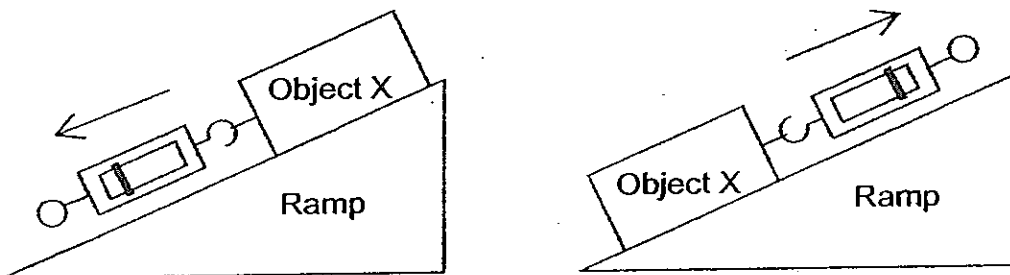


38. Meiling placed Object X at the top of a ramp as shown in the diagram below.



a) What is the force that stops Object X from moving down the slope? (1m)

Meiling pulled Object X that weighs 500g down the ramp with a spring balance. She then repeated the experiment by pulling Object X up the ramp using the spring balance.

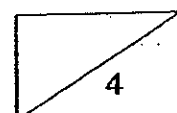


Meiling recorded the reading on the spring balance when she pulled Object X down the ramp in the table below.

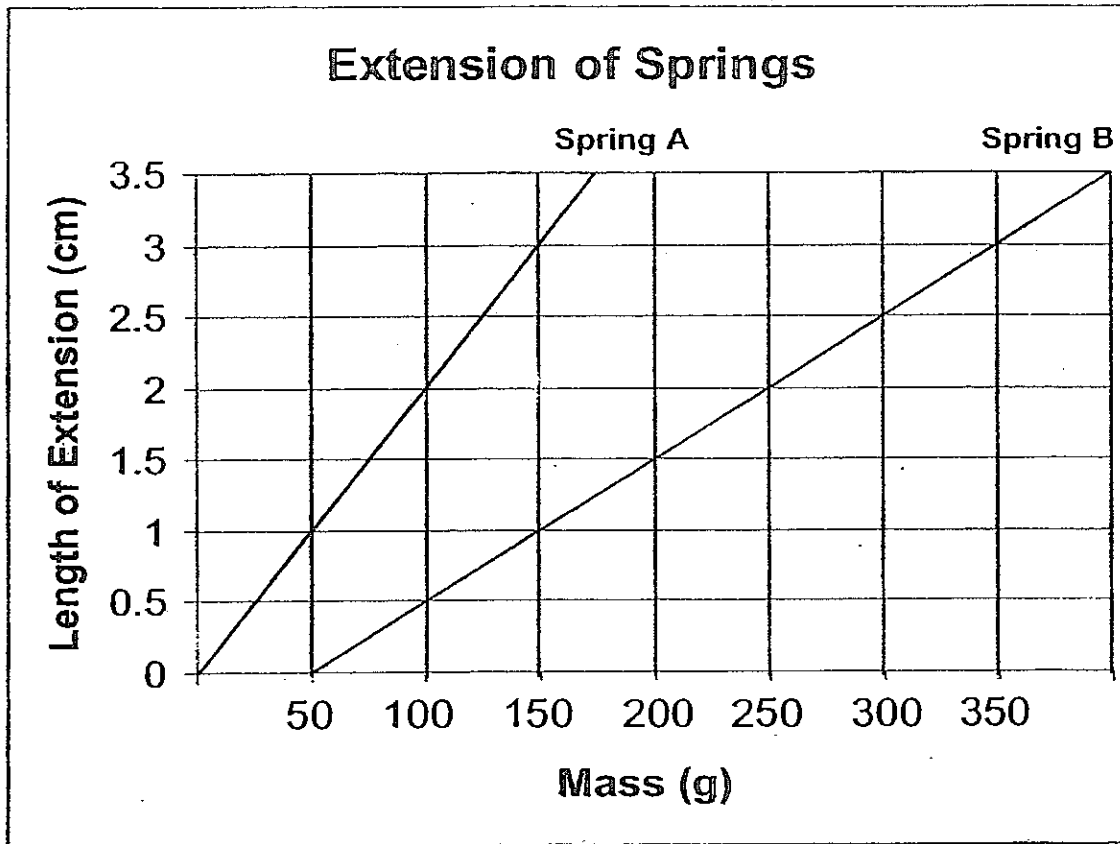
Direction of Object X	Reading on the spring balance
Down the ramp	300g
Up the ramp	?

bi) Give a possible reading on the spring balance when she pulled Object X up the ramp. (1m)

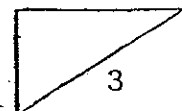
bii) Explain why the reading on the spring balance when she pulled Object X up the ramp is different from when she pulled Object X down the ramp. (2m)



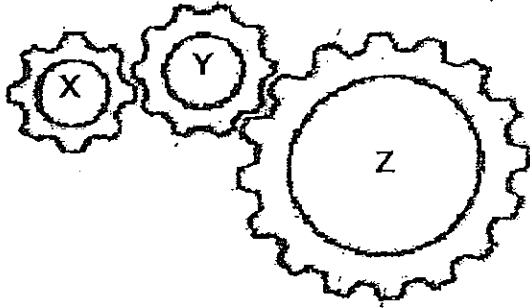
39. The graph below shows the extension of Spring A and Spring B when loads of different masses were hung on it.



- a) What is the mass that will cause an extension of 2cm on Spring A? (1m)
-
- b) What is the length of extension if a 25g load is hung on Spring B? (1m)
-
- c) Which spring requires more force for it to be stretched? Give a reason for your answer. (1m)
-



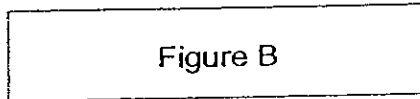
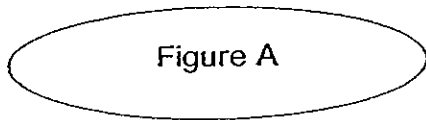
40. Study the gear system below.



a) If Gear X turns clockwise, in which direction will Gear Z turn? (1m)

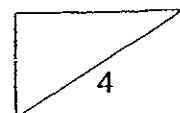
b) If Gear Z turns 5 rounds, how many rounds will Gear Y turn? (1m)

41. Study the diagrams below.



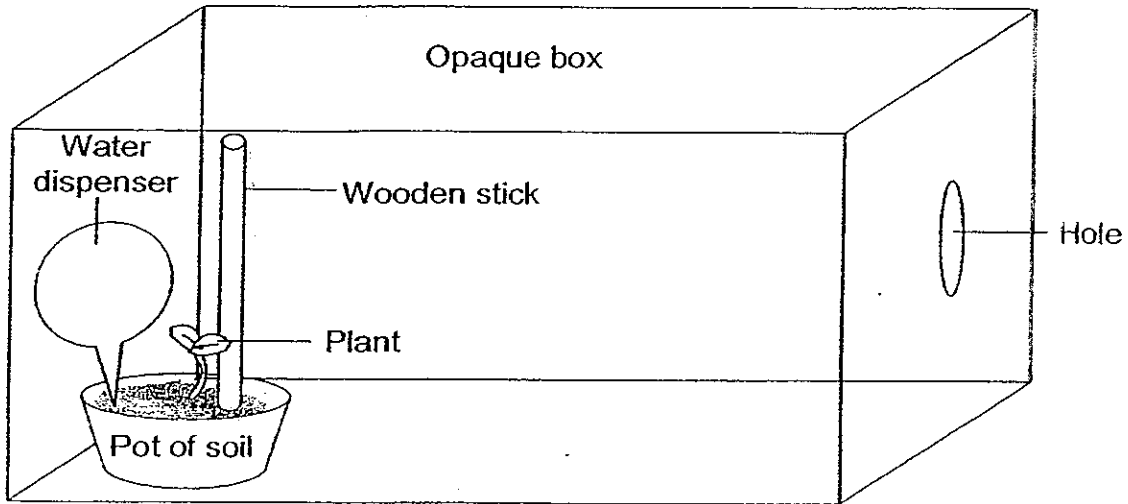
a) Explain why aeroplanes take the shape of Figure A instead of Figure B. (1m)

b) A man-made satellite moving in space which has no air does not take the shape of Figure A. Give a reason why the man-made satellite does not need take the shape of Figure A. (1m)



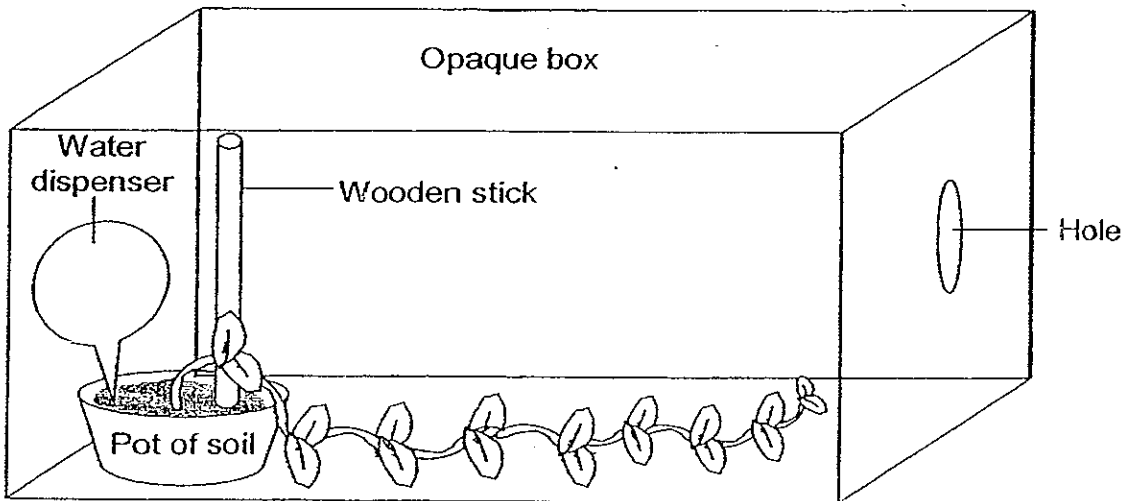
42. Ahmad set up an experiment as shown below. He placed a young plant with a twining stem in a pot of soil. He placed a water dispenser in the pot that will dispense water into the soil at regular intervals. He also added a wooden stick in the pot. He then placed the pot into an opaque box that has a hole at one side and left the box in the garden.

At the start at the experiment



- a) Why did Ahmad place a wooden stick in the pot? (1m)

At the end of 5 weeks

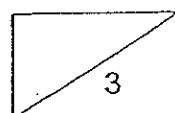


- b) After 5 weeks, Ahmad opened the box and found the plant in the position as shown in the diagram above. Give an explanation for Ahmad's observation at the end of the experiment. (1m)

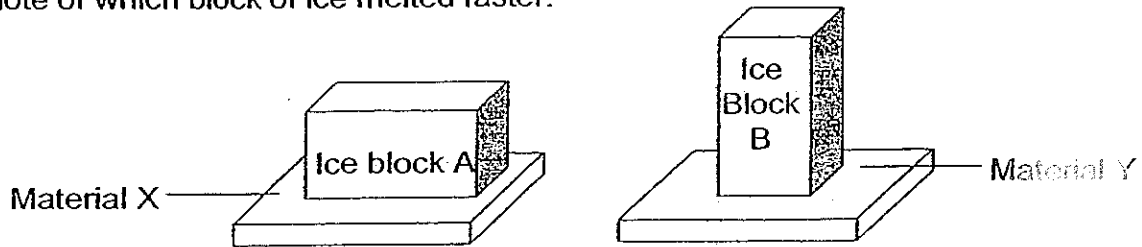
43. Mr Tan's yield of wheat has been greatly affected by the large number of grasshoppers in his wheat field. He conducted an experiment to find out which brand of pesticide is the most suitable in getting rid of the grasshoppers in his wheat field in order to increase the yield of wheat. All the plots are of the same size with the same amount and the same type of soil. Mr Tan also ensured that he used the same number of wheat plants and grasshoppers at the start of the experiment and all the plots are netted to contain the grasshoppers. Each plot was also given the same amount of water and exposed to the same amount of sunlight. He recorded his findings in the table as shown below.

Set up	Pesticide	At the start of the experiment		At the end of the experiment	
		No. of wheat plants	No. of grasshoppers	No. of surviving wheat plants	No. of surviving grasshoppers
Plot A	Brand P	100	50	55	30
Plot B	Brand Q	100	50	42	8
Plot C	Brand R	100	50	90	45
Plot D	Brand S	100	50	78	13

- a) State another variable that must be kept the same in order to ensure a fair test. (1m)
-
- b) At the end of the experiment, Mr Tan decided to use Brand S of the pesticide to control the number of grasshoppers in his wheat field. Give the reason for Mr Tan's choice. (2m)
-
-



44. Muthu wanted to find out if Material X or Material Y is a better conductor of heat. He took Material X and Material Y that are of the same size and placed them on a table. He placed ice blocks of the same size at 0°C on each material and took note of which block of ice melted faster.

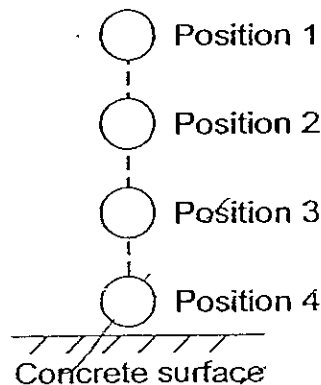


- a) Give a reason why Muthu's experiment is not a fair one. (1m)

- b) Put a tick (\checkmark) in the appropriate column below to indicate if the temperature of the objects in Muthu's experiment increases, decreases or remains the same. (1m)

	Increases	Decreases	Remains the same
i) Ice block A			
ii) Material X			

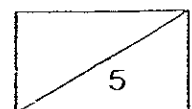
45. A rubber ball is released from Position 1. It moved through Position 2, 3 and 4 before hitting the concrete surface.



- a) At which position is the potential energy of the rubber ball the greatest? (1m)

- b) At which position is the kinetic energy of the rubber ball the greatest? (1m)

- c) In the diagram above, mark an 'X' to indicate the maximum height the rubber ball will reach after bouncing off the concrete surface. (1m)

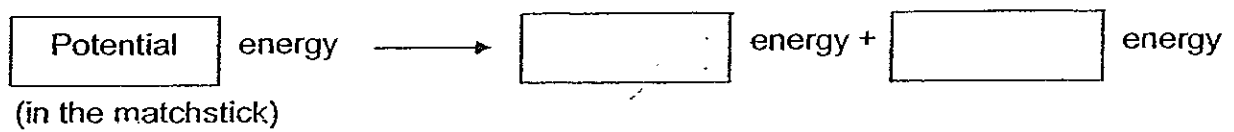


46. State the energy changes that take place in each of the following situations. (3m)

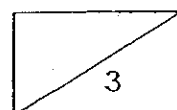
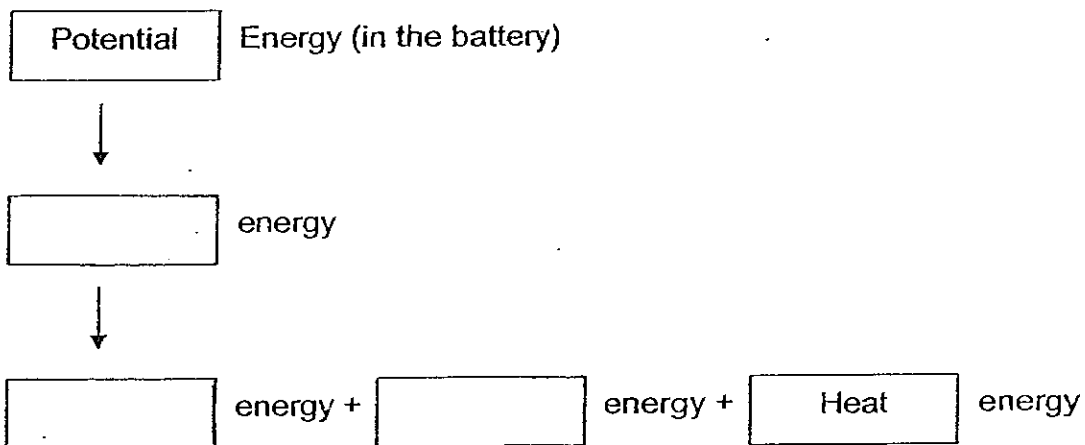
a) During photosynthesis:



b) A lighted matchstick:



c) A handphone in use:



- 38a. Frictional force
 38b(i). 400g
 (ii) Pulling up requires more force work against gravity but pulling down is helped by gravity.
- 39a. 100g
 39b. 0cm
 39c. Spring B. There was an extension of 3cm when a 150g load was hung on spring A while there was a 3cm extension when 1 350g load was hung on spring B.
- 40a. clockwise
 40b. 8 rounds
- 41a. Shape A has a streamline body shape and it helps to reduce air resistance.
 41b. No air in space therefore no need to overcome air resistance.
- 42a. Support the plant
 42b. The young plant needed sunlight to grow and there was a hole at the side of the box. The young plant grew towards the hole as it needed sunlight to grow.
- 43a. Amount of pesticide used.
 43b. It has the more number of surviving wheat plants left and few surviving grasshoppers.
- 44a. The area of exposed surface of ice block A and ice block B are not the same.
 44b(i). Remains the same.
- 45a. Position
 45b. Position 4
 45c. Position 3 X
- 46a. Chemical potential
 46b. Light energy + heat energy
 46c. Electrical energy



Light energy + Sound energy