

南洋小學

NANYANG PRIMARY SCHOOL

PRIMARY SIX SCIENCE

CONTINUAL ASSESSMENT 1

2008

**BOOKLETA**

Date : 26 FEB 2008

Duration : 1 h 45 min

Name : \_\_\_\_\_ ( )

Class: Primary \_\_\_\_\_ ( )

Marks Scored:

Booklet A:		60
Booklet B :		40
Total :		100

Parent's signature: .....

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

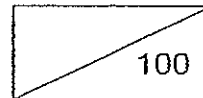
Booklet A consists of 16 printed pages including this cover page.  
Booklet B consists of 15 printed pages.

NANYANG PRIMARY SCHOOL  
PRIMARY 6 SCIENCE  
FIRST CONTINUAL ASSESSMENT 2008

Name : \_\_\_\_\_ ( ) Date : \_\_\_\_\_

Class : Primary 6 ( ) Duration : 1 h 45 min

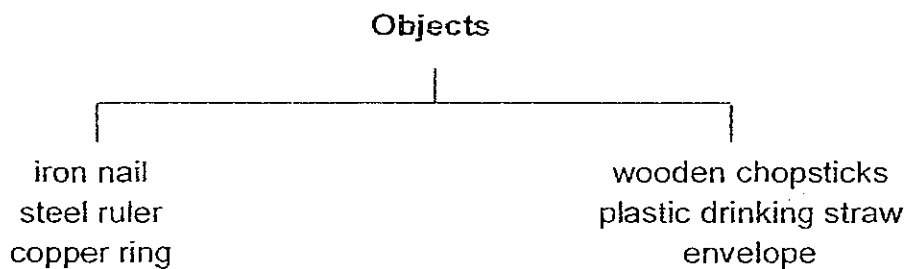
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**Section A (30 x 2 marks = 60 marks)**

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 provided.**

1. Study the classification chart below.



Which of the following properties can be used to classify the objects in the two groups shown above?

- A flexibility of materials
- B metals or non-metals
- C magnetic or non-magnetic
- D conductors of electricity or non-conductors of electricity

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

2 Study the animals below.



frog



snake



goldfish



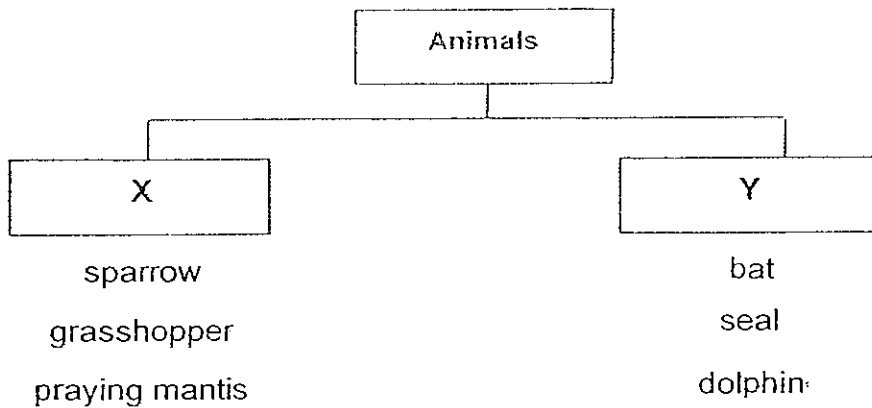
pigeon

Which of the following heading(s) will classify the animals above into exactly 3 groups?

- A Body Covering
- B Types of Animals
- C Breathing Methods
- D Stages in their life cycle

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

3. Study the classification chart below.

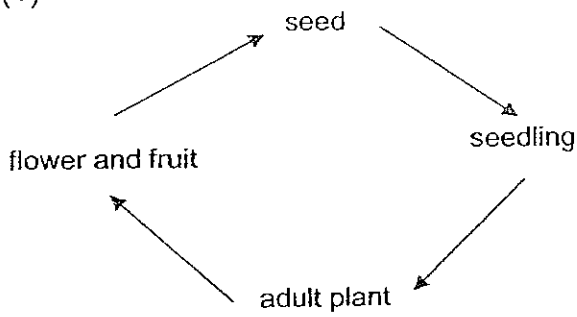


For the above classification, which headings best fit X and Y respectively ?

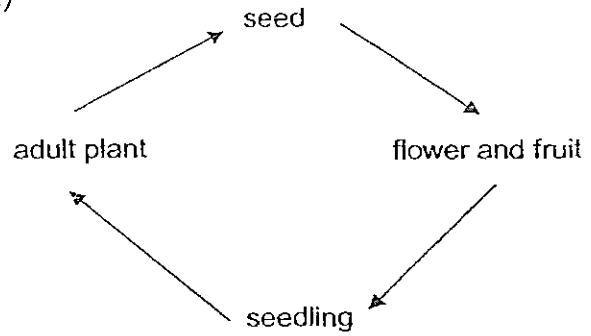
	X	Y
(1)	Insects	Mammals
(2)	Lay eggs	Give birth to young
(3)	Live on land	Live in water and on land
(4)	Have a three-stage life cycle	Have a four-stage life cycle

4. Which of the following correctly shows the life cycle of a plant?

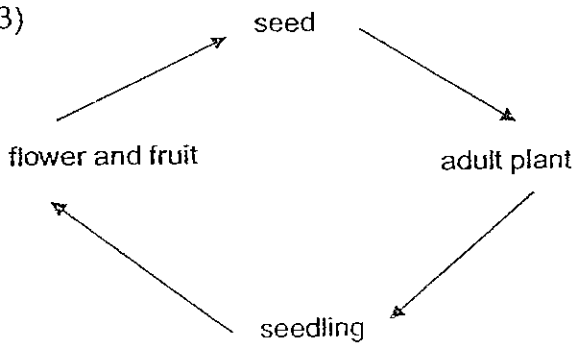
(1)



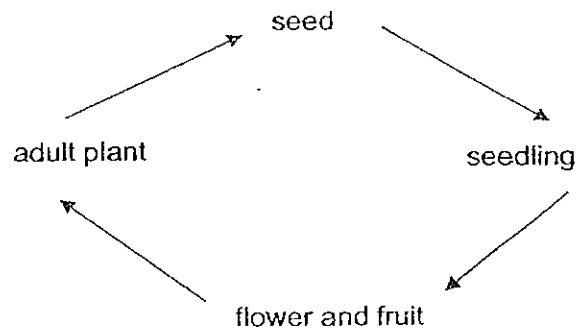
(2)



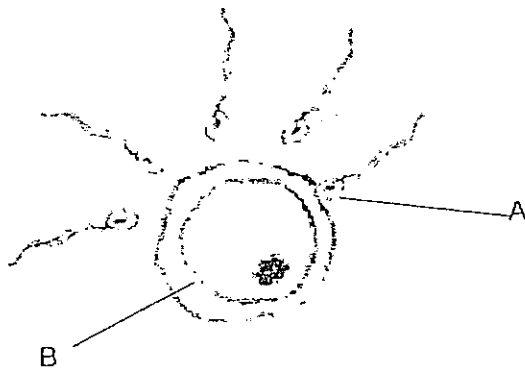
(3)



(4)



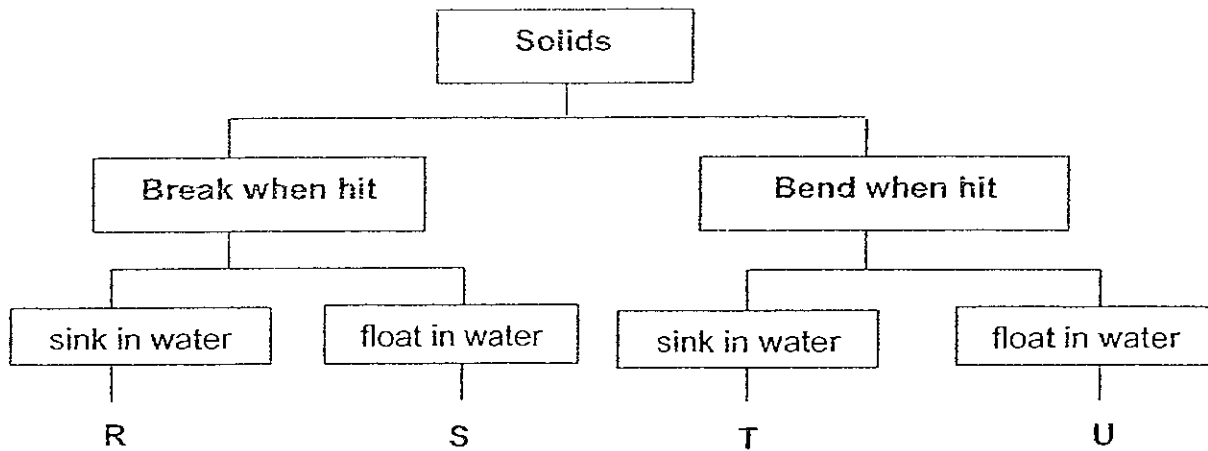
5. Study the diagram below.



Which one of the following correctly identifies A and B, and where they are produced in the human reproductive system?

	A	Where A is produced	B	Where B is produced
(1)	sperm.	penis	sperm	testes
(2)	egg	ovaries	egg	womb
(3)	sperm	testes	egg	ovaries
(4)	egg	womb	sperm.	testes

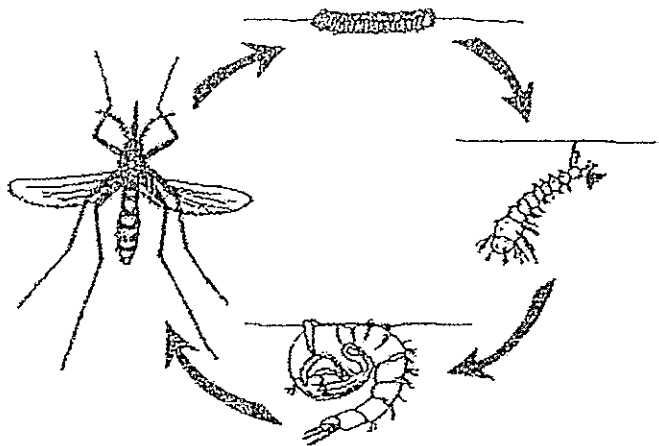
6. Study the classification chart given below.



Based on the properties stated in the chart above, where should aluminium foil, iron nail, stone and ice block be placed in the classification chart?

	aluminium foil	iron nail	stone	ice block
(1)	R	T	U	S
(2)	T	U	S	R
(3)	U	S	R	T
(4)	U	T	R	S

7. The diagram below shows the life cycle of a mosquito.



Which one of the following groups of animals has a similar life cycle as the mosquito?

- ~~(1)~~ spider, housefly, termites
- ~~(2)~~ cotton weevil, beetle, dragonfly
- ~~(3)~~ grasshopper, goldfish, butterfly
- ~~(4)~~ mealworm beetle, moth, fruit fly

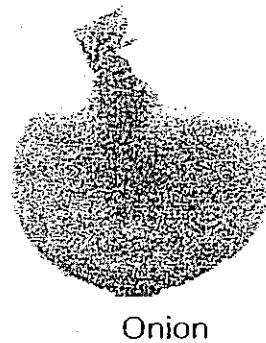
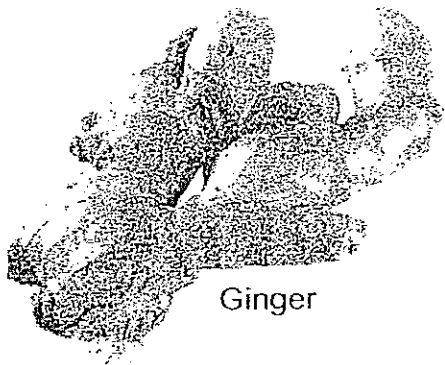
8. The table below shows the eye colours that the offsprings of Animal A inherit from their parents with various eye colours.

Eye Colour				
Parents	Female – yellow Male – yellow	Female – yellow Male – blue	Female – green Male – blue	Female – blue Male – blue
Offsprings	Female – blue or green	Female – blue or green	Female – blue or green	Female – all blue
	Male – all yellow	Male – all yellow	Male – all green	Male – all blue

Based only on the above information, which one of the following statements about the inheritance of eye colour of Animal A is true?

- ~~(1)~~ Male offsprings inherit their eye colour from their mother.  
~~(2)~~ Eye colour of male offsprings is determined by the male parent.  
~~(3)~~ Green-eyed female Animal A can only have green-eyed offsprings.  
~~(4)~~ Parents with the same colour eyes can only have offsprings of the same eye colour.

9. Study the pictures below carefully.



Based on your observations, how are the plant parts alike?

- A Both are underground stems  
 B Both have plant parts which store food  
 C Both are used to reproduce new plants

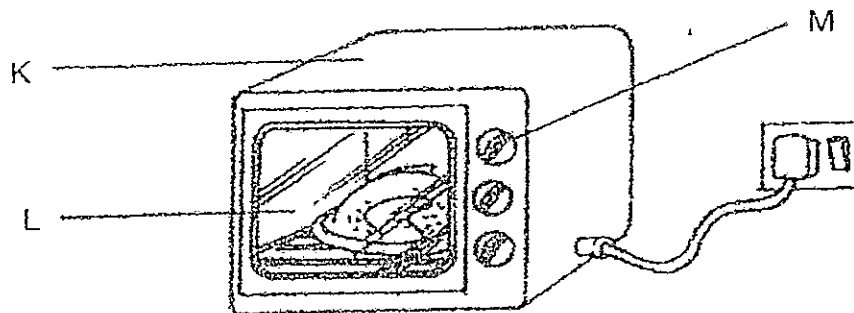
- ~~(1)~~ A only  
~~(2)~~ A and B only  
~~(3)~~ B and C only  
~~(4)~~ A, B and C

10. Yi Hui caught sight of her reflection on the freezer door and quickly wiped away the chocolate stains round her mouth. Which of the following assumptions about the situation is correct?

- A There is some light in the kitchen.
- B The freezer door must be a light colour.
- C The surface of the freezer can reflect light.
- D The freezer door has a very smooth surface.

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

11. The picture below shows an electric oven.



Which one of the following correctly shows the materials the parts labelled K, L and M can be made of?

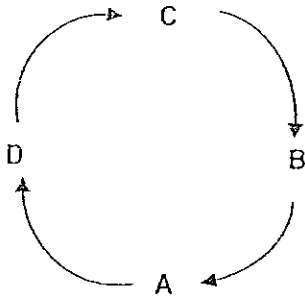
	K	L	M
(1)	plastic	glass	plastic
(2)	metal	glass	plastic
(3)	metal	plastic	plastic
(4)	plastic	plastic	metal

12. A, B, C and D are processes occurring in the life cycle of a plant.

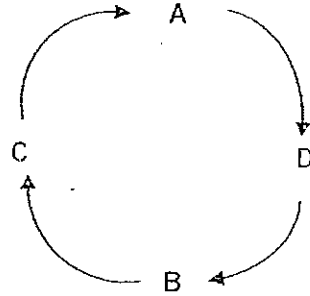
- A dispersal
- B fertilisation
- C pollination
- D seed germination

Which of the following shows the correct order of the processes?

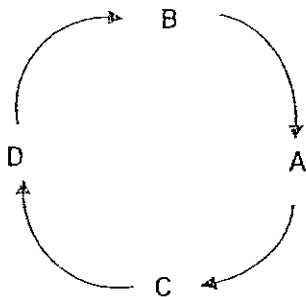
(1)



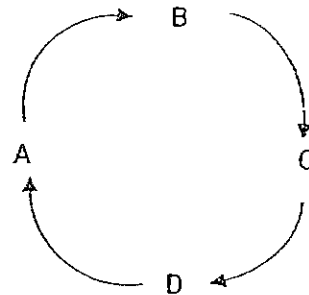
(2)



(3)



(4)

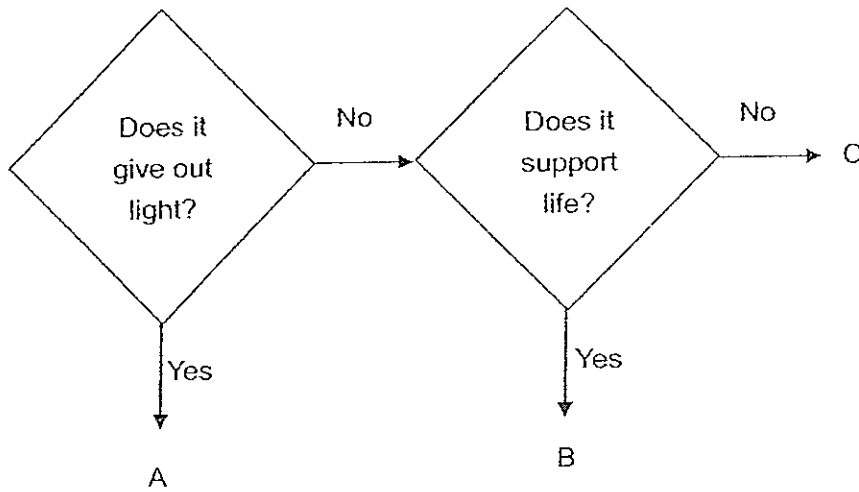


13. Which one of the following represents the parts that are present in the potato leaf cell but not in the human cheek cell?

- ~~(1)~~ cell wall, nucleus and cell sap
- (2) cell wall, chloroplast and cell sap
- ~~(3)~~ chloroplast, cell membrane and nucleus
- ~~(4)~~ chloroplast, cell membrane and cell wall



14. Study the flowchart below. A, B and C are objects in space.



What can objects A, B and C represent?

	A	B	C
(1)	Moon	Earth	Star
(2)	Earth	Star	Sun
(3)	Sun	Earth	Moon
(4)	Moon	Sun	Star

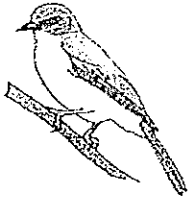
15. Mr Lee classified the following objects as shown in the table below.

A	B	C	D
Wine glass	Socks	Chopsticks	Nail cutter
Test tube	Sweater	Toothpicks	Chopper
Windscreen	Scarf	Clogs	Scissors

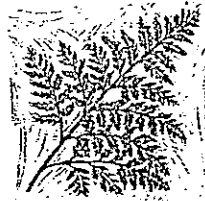
How did Mr Lee classify the objects?

- (1) According to their usefulness to Man
- (2) According to their ability to absorb water
- (3) According to the material they are made of
- (4) According to the degree of transparency to light

16. Four pupils were arguing among themselves while making comparisons on the following organisms.



Organism A



Organism B



Organism C

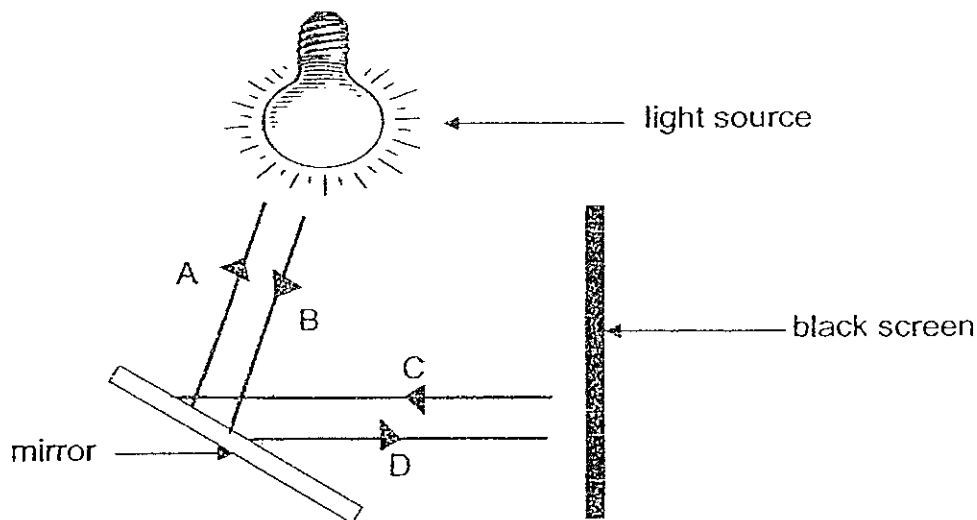
Each pupil then made the following statements.

- Xue Qi : A and B can move on its own but not C.  
 Jesse : All the above organisms need food to grow.  
 Ryan : Only A and B are living things while C is not.  
 Andrea: B and C contain chlorophyll while A does not.

Which of the above pupil(s) had made the correct statement(s)?

- ~~(1)~~ Jesse only  
~~(2)~~ Ryan and Xue Qi only  
~~(3)~~ Ryan, Jesse and Xue Qi only  
~~(4)~~ Andrea, Ryan and Jesse only

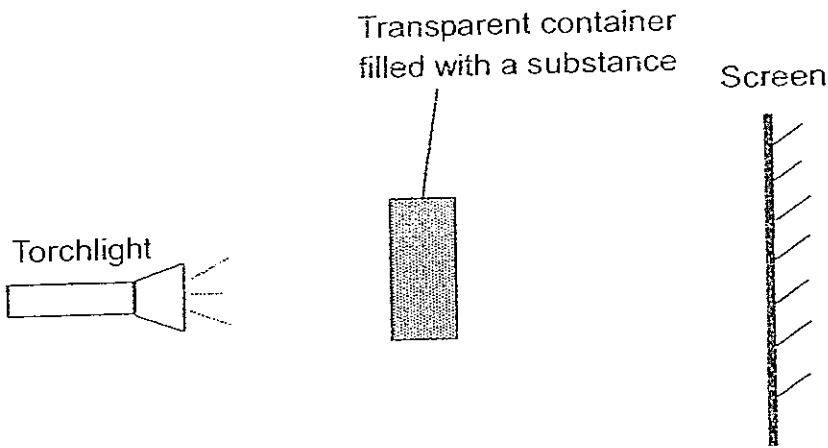
17. Study the setup below carefully.



Which pairs of arrows show the correct reflection of light by the mirror?

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

18. Keith wanted to create a shadow on a white screen using the set-up below.



To form a shadow on the screen, which of the following conditions are required ?.

- A A light source must be present.
- B The container must be placed upright.
- C The substance in the container must be a solid.
- D The substance must <sup>not</sup> allow all light to pass through it.

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

19. Which of the following statements are true?

- A All flowers have male and female parts.
- B Only flowering plants reproduce from seeds.
- C The ovary is present in the female part of the flower.
- D Pollen grains are produced by the male part of the flower.

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

20. Which of the following statement(s) about fuel is/are not true?

- A They are sources of potential energy.
- B They can be in solid, liquid or gaseous state.
- C They only come from organisms that are once alive.
- D They are the only source of energy for generating electricity.

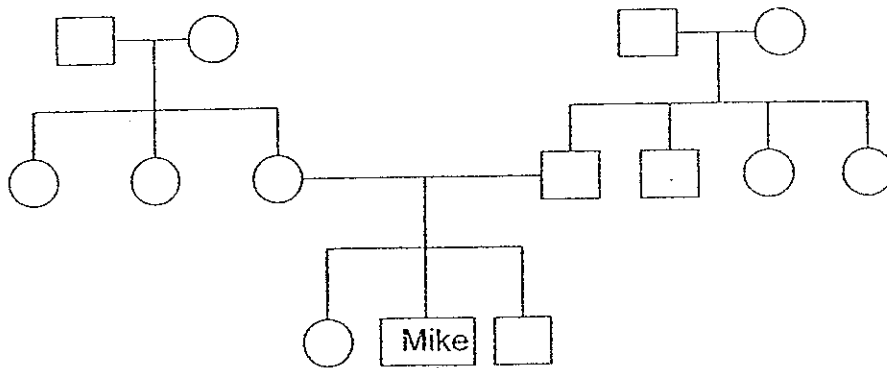
~~(1)~~ B and C only  
~~(3)~~ A, B and C only

~~(2)~~ C and D only  
~~(4)~~ B, C and D only

21. Which one of the following statements is correct?

- ~~(1)~~ All energy on earth is created by the Sun.
- ~~(2)~~ Potential energy in fossil fuel originates from the Sun.
- ~~(3)~~ Solar energy only refers to light energy from the Sun.
- ~~(4)~~ All life depends directly or indirectly on the Sun's light energy only.

22. Study Mike's family tree.



Which one of the following statements about Mike's family is true?

- ~~(1)~~ Mike has 2 aunts.
- ~~(2)~~ Mike has 2 brothers.
- ~~(3)~~ Mike has only 1 uncle.
- ~~(4)~~ Mike's mother has a brother.

23. Emily classified the energy that the following underlined objects possess into 3 groups, A, B and C. There are 2 objects in each group.

Rolling ball  
 Bowl of rice  
Water in a river  
 Bottle of kerosene  
 Compressed spring  
 Stretched rubber band

Which one of the following correctly represents the heading for groups A, B and C?

	A	B	C
(1)	Kinetic Energy	Sound Energy	Potential Energy
(2)	Gravitational Potential Energy	Chemical Potential Energy	Elastic Potential Energy
(3)	Kinetic Energy	Chemical Potential Energy	Elastic Potential Energy
(4)	Sound Energy	Heat Energy	Kinetic Energy

24. Which forms of energy are involved when a digital camera is used to take a photograph?

- A Light Energy
- B Sound Energy
- C Kinetic Energy
- D Electrical Energy
- E Potential Energy

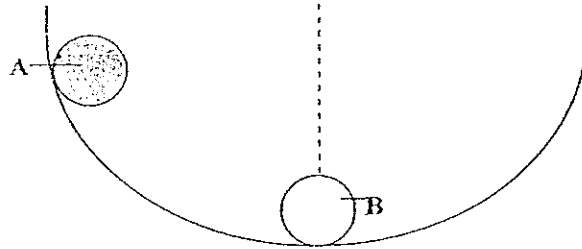
~~(1)~~ A, B and C only

~~(3)~~ A, B, D and E only

~~(2)~~ B, C and D only

~~(4)~~ A, B, C, D and E

25. The diagram below shows marble A on the rim of a bowl and marble B at the bottom of the bowl.



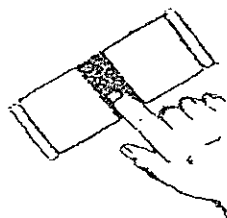
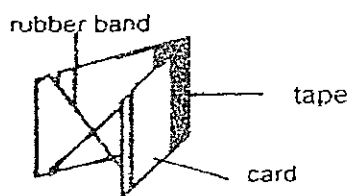
When marble A was released, it rolled down the bowl and hit marble B. Marble B then moved up the other side of the bowl.

Which one of the following statements is true about marble A and B from the instance marble A was released till marble B moved up the side of the bowl?

- ~~(1)~~ Marble A will have more energy when it hits marble B.
  - ~~(2)~~ Marble B possesses potential energy when it is at bottom of the bowl.
  - ~~(3)~~ Marble A loses kinetic energy when it moves towards marble B.
  - ~~(4)~~ Marble A's kinetic energy will be converted to heat energy, sound energy and transferred to marble B when it hit marble B.
26. Which one of the following has the same energy change as a portable VCD player when it is used to play a movie?
- ~~(1)~~ Oven
  - ~~(2)~~ Blender
  - ~~(3)~~ Cuckoo Clock
  - ~~(4)~~ Siren of police car
27. Which one of the following correctly states the energy involved when an electric shaver is being used?

	Useful energy	Energy which is not useful
<del>(1)</del>	Electrical Energy, Sound Energy	Kinetic Energy
<del>(2)</del>	Kinetic Energy, Heat Energy	Sound Energy
<del>(3)</del>	Electrical Energy, Kinetic Energy	Sound Energy
<del>(4)</del>	Kinetic Energy, Sound Energy	Heat Energy

28. Bala made a toy with 2 cards, a rubber band and sticky tapes as shown below.



He spread the toy and pressed it down on the floor. Then he let go of his finger to release the toy. The toy jumped with a snap.

Bala made the following comments A, B and C.

- A Source of energy is the rubber band.
- B When the toy is released, it possesses kinetic energy, sound energy and potential energy.
- C The height the toy jumps can be increased by adding one more rubber band to the toy.

Which of the following comments that Bala made are correct?

- (1) A and B only
- (3) B and C only

- (2) A and C only
- (4) A, B and C

29. An experiment was carried out to find the relationship between the number of the times the key of a toy was turned and distance it travelled. The results are recorded in a table below.

Number of turns of keys	2	4	6	8
Distance travelled / cm	10	21	29	42

Based on the results in the table above, which one of the following conclusions can be drawn from this experiment?

- (1) The greater the number of turns of key, the greater the potential energy it has.
  - (2) The greater the number of turns of key, the lesser the potential energy it has.
  - (3) The greater the distance travelled by the toy car, the greater the number of turns of key.
  - (4) The greater the distance travelled by the toy car, the lesser the number of turns of key.
30. The diagram below shows how tide water is used to generate electricity.

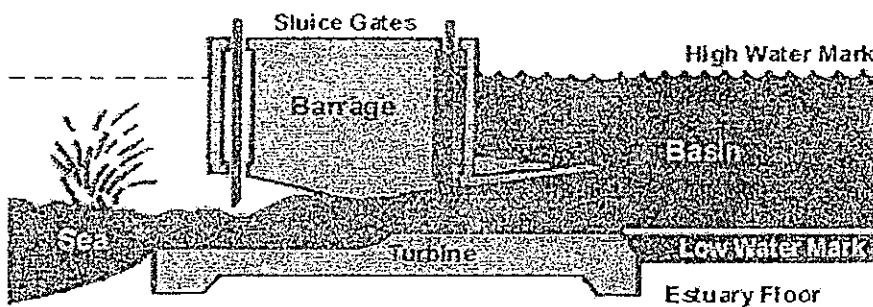


Figure1 Ebb generating system with a bulb turbine  
(Adapted from Energy Authority of NSW Tidal Power Fact Sheet)

Which form(s) of energy does tide water possess in order to generate electricity?

- A Potential Energy
- B Kinetic Energy
- C Sound Energy
- D Heat Energy

- ~~(1)~~ A only  
~~(3)~~ B and D only

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



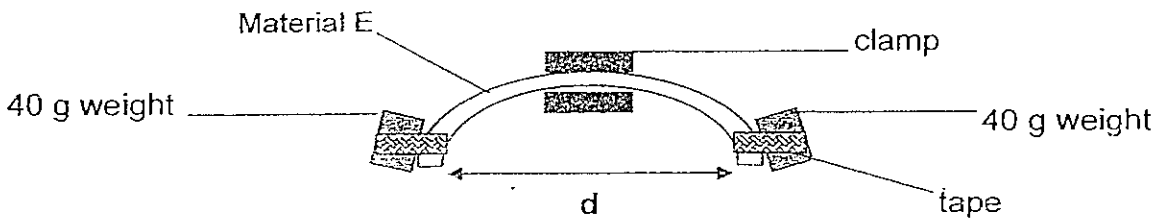
Name : \_\_\_\_\_ ( Date : \_\_\_\_\_ )

Class : Primary 6 ( )

**Section B (40 marks)**

Write your answers to questions 31 to 46 in the spaces provided.

31. Ali conducted an investigation as shown below.



He clamped a strip of material E in the middle before taping a 40 g weight to each end of the strip. He measured distance  $d$ . Using the same set-up, he repeated his investigation with material F, G and H and recorded his result in the table below. For all the 4 materials, the length of the strip did not increase during the investigation.

Material	Distance $d$ /cm
E	3
F	12
G	7
H	9

(a) What property of the material was Ali investigating ? [1]

\_\_\_\_\_

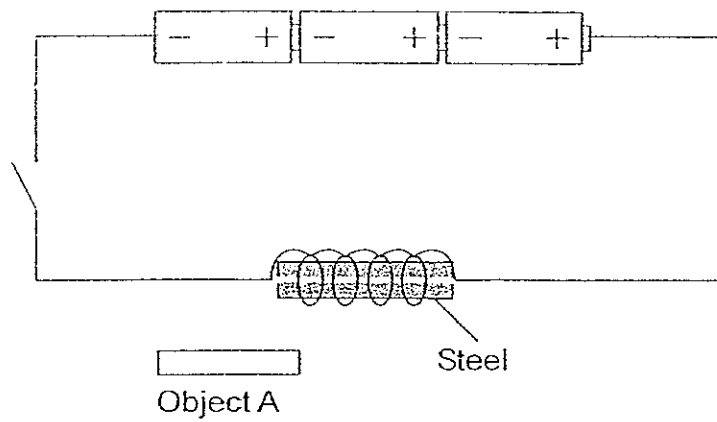
(b) What other variable should be kept constant for a fair comparison ? [1]

\_\_\_\_\_

(c) Based only on the data Ali had collected, which material ( E, F, G or H ) is most suitable for making a belt ? [1]

\_\_\_\_\_

32. An experiment was set up as shown in the diagram below.



(a) When the circuit above is switched on, what property of object A can be tested? [1]

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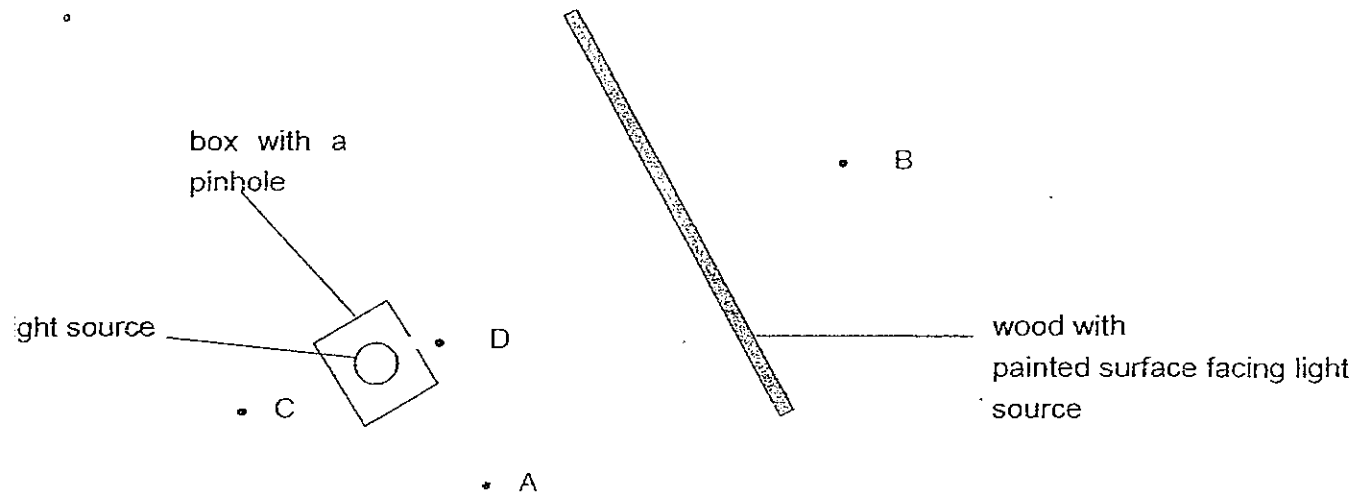
(b) Describe another way of testing the same property of object A instead of using the above circuit. [2]

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33. Peter wanted to find out which type of paint J, K, L and M reflects the most light. He painted 4 similar pieces of wood with the same colour but of different type of paints. The diagram below shows the set-up that he used for his investigation but light sensor that he used is not shown.



(a) In the above diagram, which position A, B, C or D should Peter place the light sensor to measure the light reflected by the paint ? [1]

\_\_\_\_\_

(b) Explain why Peter need to perform his investigation in a dark room. [2]

\_\_\_\_\_  
 \_\_\_\_\_

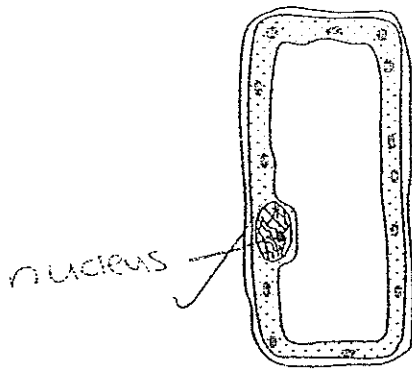
The table below shows the data that Peter had collected after he had repeated his investigation with 4 paints.

Type of paint	Amount of light reflected/ lux
J	20
K	100
L	45
M	50

(c) Based on the above data, explain why paint J would be a bad choice for painting signboard to guide driver to drive safely in the night ? [1]

\_\_\_\_\_

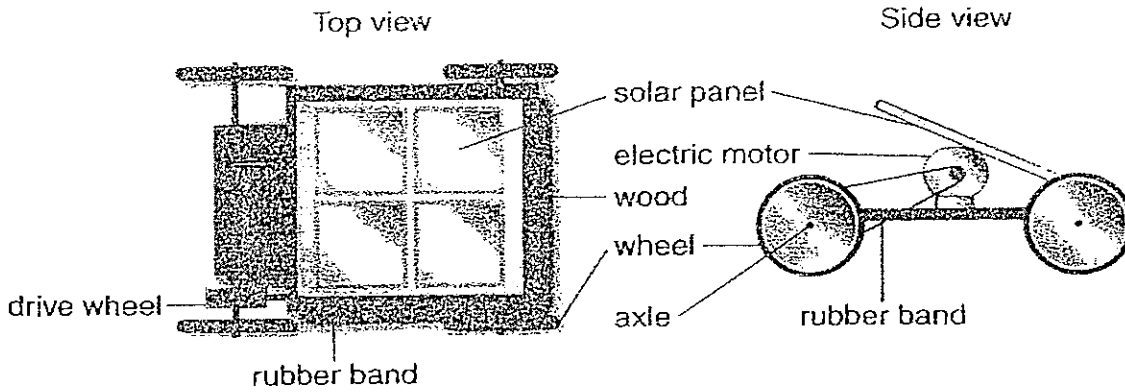
34. The diagram below shows a plant cell.



- (a) A scientist wanted to insert some genetic material that would enable the plant cell above to make a new substance T. In the above diagram label and name the part of the cell that he should insert the genetic material. [1]
- (b) It was found out that although the plant cell was able to produce the new substance T, the substance could not get out of the cell. Name the part of the cell that could have stopped T from getting out of the cell [1]

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35. The drawing below shows a solar-powered model car.



Picture taken from 2004 P3 New South Wales Paper

(a) Explain how the solar-powered car gets its energy to move. [1]

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The toy car was modified by increasing the size of the solar panel.

(i) Explain why the modified toy car could move faster than the original toy car [1]

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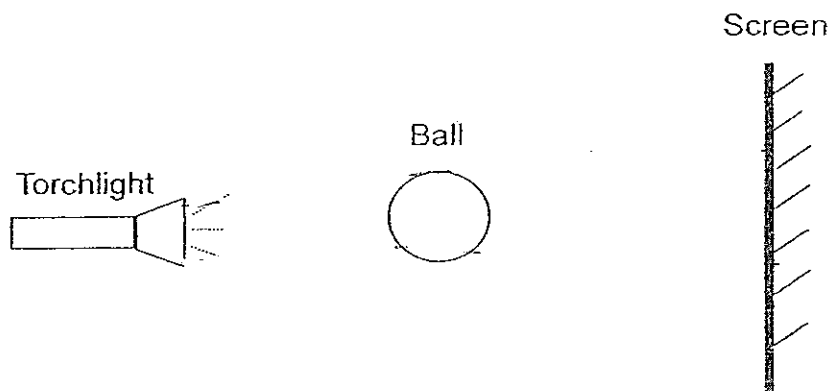
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(ii) To carry out an investigation to compare the speed between the original toy car and the modified toy car, state one variable that should be kept constant. [1]

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36. Jasper placed a ball between a torchlight and a screen and observed a shadow on the screen.



(a) He noticed that the shadow was very light. State one possible reason for this observation. [1]

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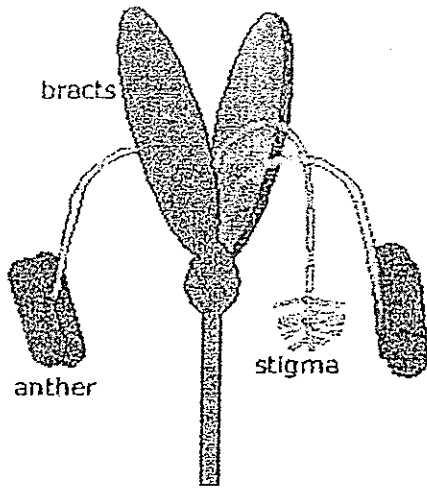
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(b) What can Jasper do to increase the size of the shadow? [1]

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37. The diagram below shows a flower of plant W .



(a) Based on the above diagram state the method of pollination for this flower. [1]

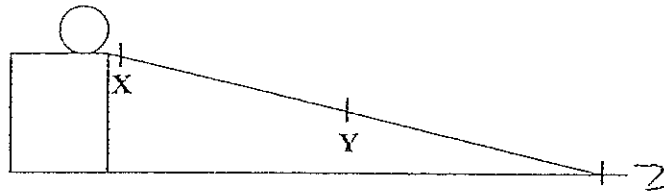
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(b) Explain your answer in (a) [1]

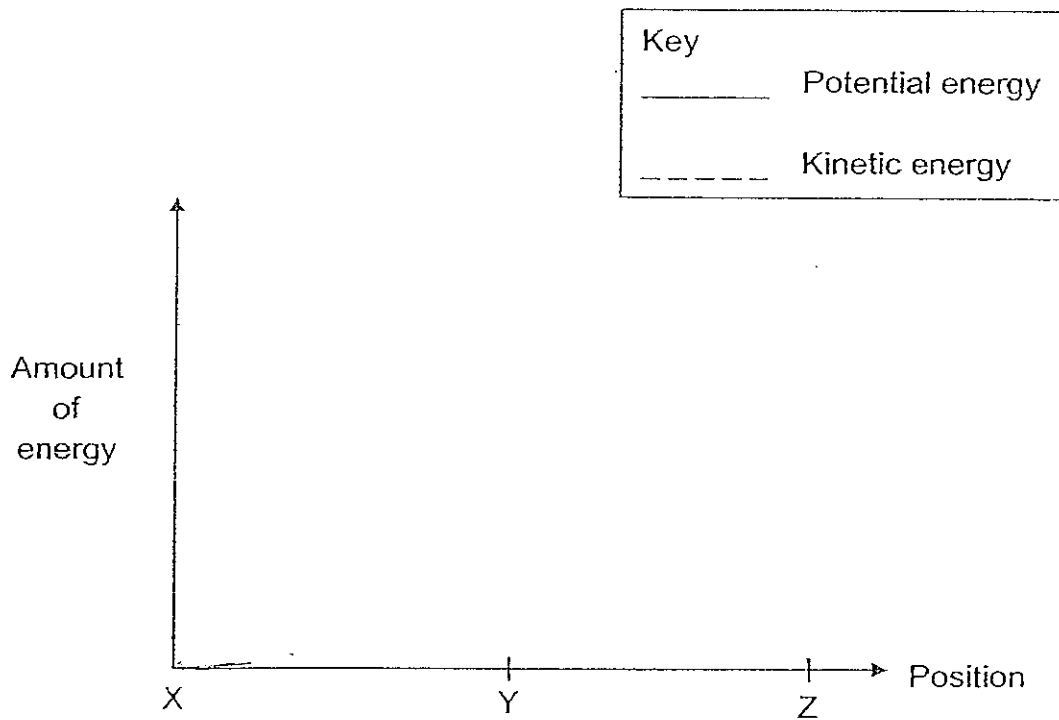
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38. Ming Yi positioned a marble on a ramp as shown below. He then gave the marble a push and it rolled down the ramp.



Using the key given, draw the change in the amount of kinetic energy and potential energy of the marble as it rolled down the ramp in the graph below. [2]





39. The table below contains information on some planets.

Planets	Distance from the Sun (million km)	Number of days taken for one revolution
Mercury	58	88
Venus	108	224
Earth	150	365
Mars	228	686
Jupiter	778	4 329
Saturn	1 425	10 753
Uranus	2 867	30 660
Neptune	4 497	60 152
Pluto	5 917	90 411

(a) What is the relationship between the distance of the planets from the Sun and the number of days taken for them to make one revolution? [1]

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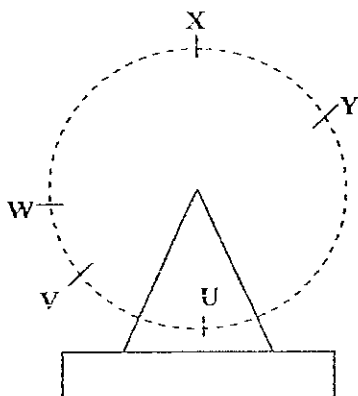
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(a) How does the atmosphere help to support life on Earth? [1]

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40. The drawing shows the circular track of a spin ride at a Theme Park. At position U, once the person is securely fastened, a huge force is imparted to the carriage. The ride will take the person for a spin and would not stop until a round is completed on the circular track.



(a) At which position will there be least kinetic energy? [1]

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(b) Make a comparison of the kinetic energy and potential energy at point V and Y. [2]

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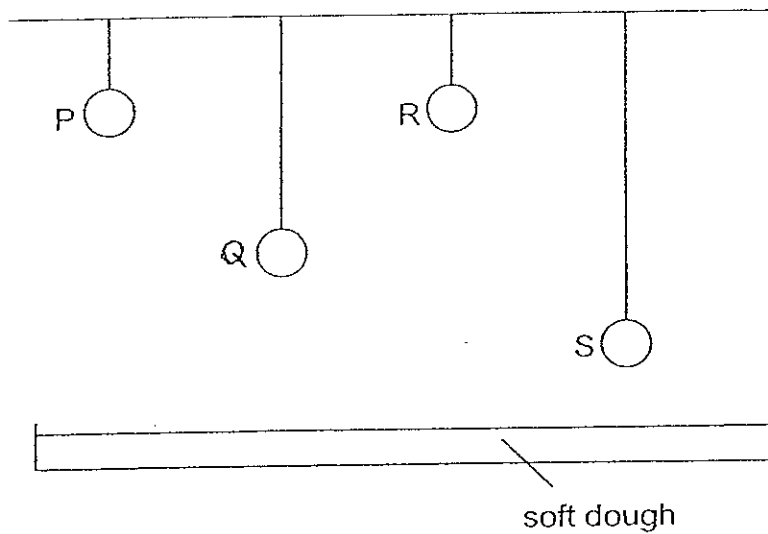


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41. Najib hung 4 balls of the same size, P, Q, R and S, using 4 similar strings of different length on a fixed pole above a tray of soft dough.



Then he cut the strings and measured the depth of the dent created by each ball on the soft dough. He repeated the experiment 3 times and recorded the results in the table below.

	1 <sup>st</sup> try	2 <sup>nd</sup> try	3 <sup>rd</sup> try
Ball	Dent (cm)	Dent (cm)	Dent (cm)
P	5.1	4.8	4.7
Q	3.0	3.3	2.9
S	0.8	1.3	1.2

- (a) What is the relationship between the height of the ball from soft dough and the depth of the dent made by the ball? [1]

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The table below shows the results of ball R.

1 <sup>st</sup> try	2 <sup>nd</sup> try	3 <sup>rd</sup> try
7.2cm	7.5cm	7.4cm

- (b) Ball P and ball R are hung at the same height above the soft dough. Explain the difference in results recorded for these 2 balls. [2]

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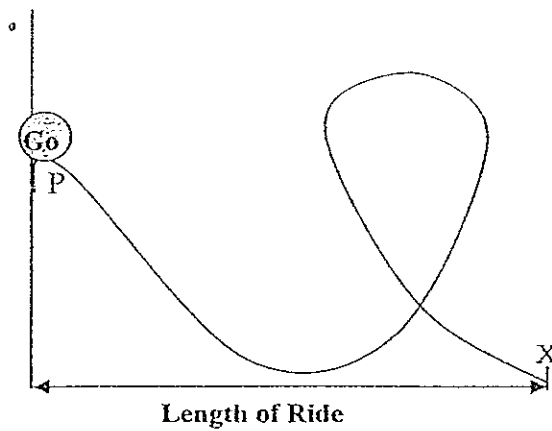


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- (c) Why was the experiment repeated for 3 times? [1]

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42. The drawing below shows a newly designed roller coaster track at a Theme Park.



(a) At position P, the engine of the car was switched off. At P, what form of energy must the roller coaster car have **before** it could move from P to X ?[1]

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(b) Why did the roller coaster car come to a stop eventually ? [1]

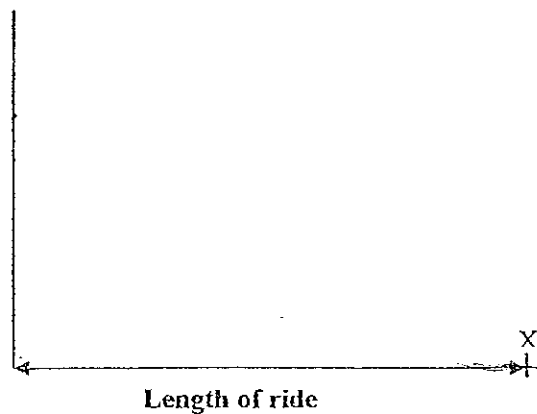
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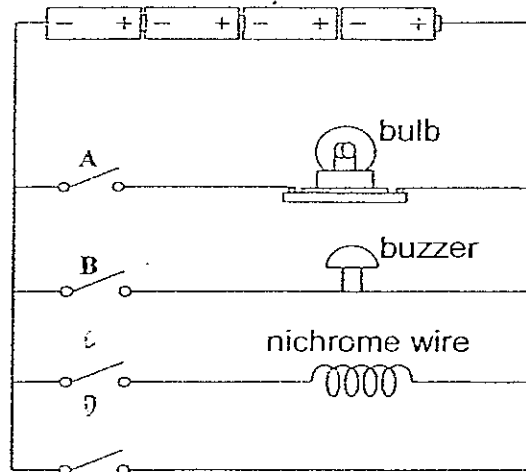
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(c) The manager of the Theme Park told the designer that there is a problem with the roller coaster track. The roller coaster car always stops before the designated position X. Without compromising on the track design, draw another track in the space below so that the roller coaster car will stop at the designated position X.

[1]



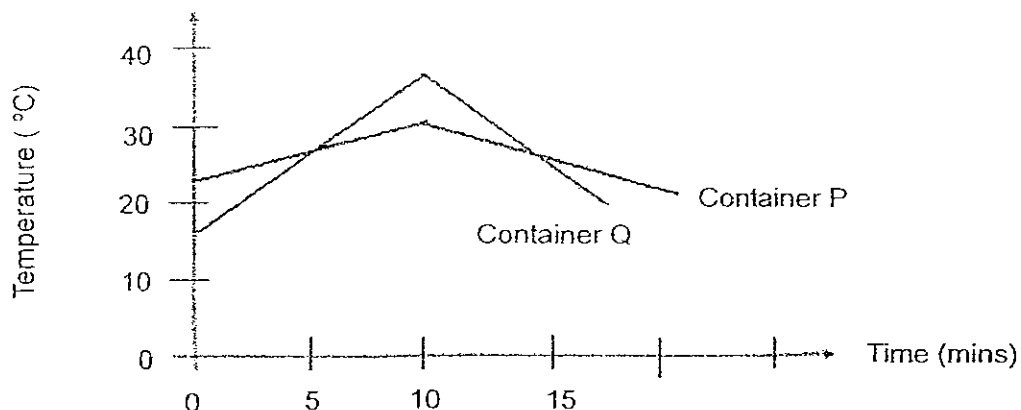
43. The diagram below shows an electric circuit.



In the table below, fill in the energy conversion when the different switches are closed [2]

Switches closed	Energy Conversion
A only	Potential energy → Electrical energy → Light energy
A and B only	Potential energy → Electrical energy → Light energy + Sound energy
i) A, B and C only	
ii) A, B, C and D	

44. Study the graph below.



Madam Lim set up the experiment above using similar containers. Identical thermometers were placed in each container before the containers were covered and left in the garden under the sun for a while before being brought into the kitchen. Its readings were taken every five minutes.

- (a) Based on the result shown in the graph, which container is a better conductor of heat? [1]

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- (b) Explain your answer. [1]

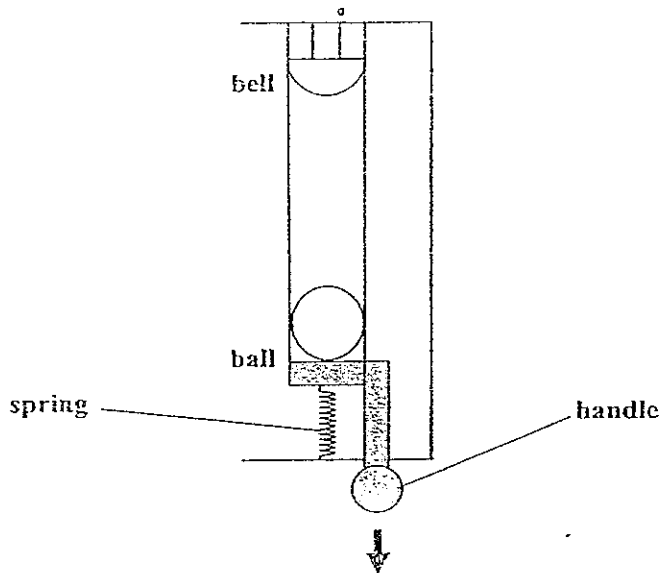
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- (c) If Madam Lim wants to keep her baby milk warm for a longer time, which container would you recommend to her? Why? [1]

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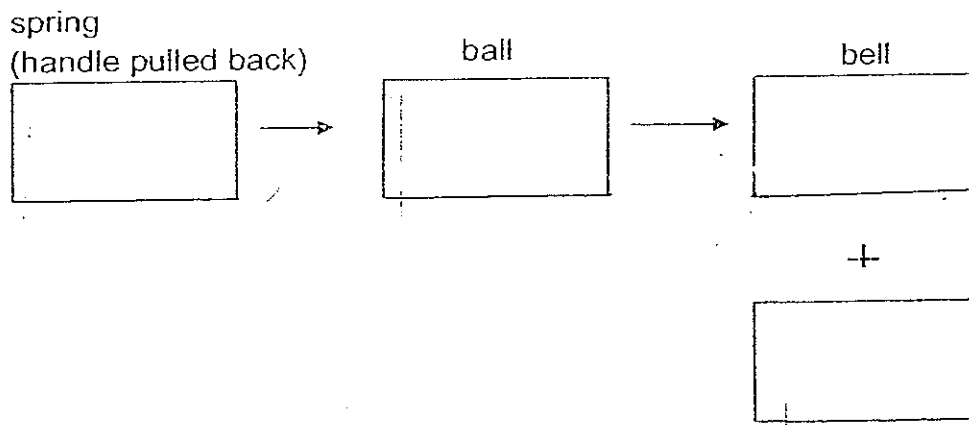
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45. Study the diagram below carefully.



(a) What will happen when the handle is pulled in the direction of the arrow and released? [1]

(b) Fill in the boxes below to show the energy change when the handle is pulled back and released in the above diagram. [1]



Nanyang Primary School  
Primary 6 Science CA1 Exams (2008)

**Answer Keys**

Qo.	Ans
1	2
2	2
3	2
4	1
5	3
6	4
7	4
8	1
9	4
10	3

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

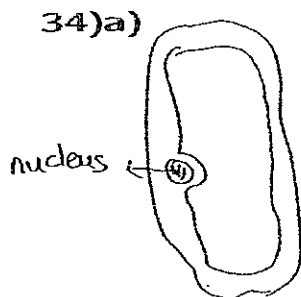
Qn no.	Ans
21	2
22	3
23	3
24	4
25	4
26	4
27	3
28	3
29	1
30	2

- 31a. Ali was investigating if the materials are flexible or not.  
 31b. Thickness length of material.  
 31c. Materials E is most suitable for making a belt.

- 32a. To test if object A is a magnetic material.  
 32b. Place object A near a magnet. If object A attracted by the magnet, it is a magnetic.

- 33a. A  
 33b. It will be a fair test as there will be no other light but just the light source. So that the sensor only measure light reflected from wood, as there are no other light sources.  
 33c. The amount of light reflected is the least and the driver will not be able to see signboard clearly at night as it is very dark.

34a



34b. Cell membrane

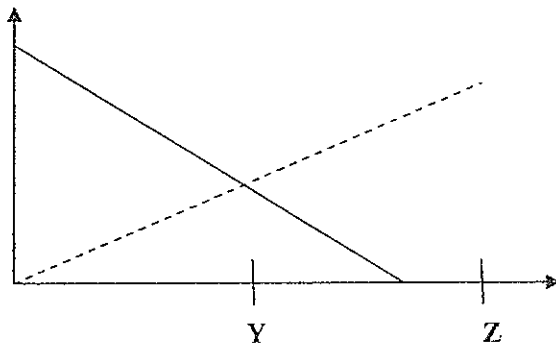
- 35a. The solar powered car gets its energy from the sun and converts it into electrical energy and kinetic energy, allowing the car to move.  
 35b(i). When the solar panel is bigger there will be more light energy to be converted to move kinetic energy.  
 (ii). The amount of light.



- 36a The ball was not opaque  
 36b Jasper should move the light source nearer to the ball.

- 37a wind  
 37b The anthers and stigma are sticking out of the flower and the stigma is feathery.

38

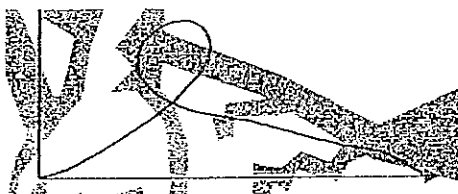


- 39a The further the distance away from the sun, the longer the number of days taken for one revolution.  
 39b There is oxygen for human and plant to respire and carbon dioxide for the plant to photosynthesize.

- 40a X  
 40b Kinetic energy at point V was greater than is point Y. But point V has a lesser potential energy than in point Y.

- 41a The further the distance between the ball and the soft dough, the greater the depth of dent made by the ball.  
 41b Ball R is heavier than Ball P so that R has more potential energy than P to make a deeper dent.  
 41c The result will be more reliable.

- 42a Gravitational potential energy.  
 42b Some of the kinetic energy has been converted to other forms of energy.  
 42c



- 43(i) Potential energy → Electrical energy → light energy + Sound energy + heat energy.  
 43(ii) Potential energy → Electrical energy.

- 44a Container Q  
44b Container Q increases temperature at a faster rate than container P.  
44c Container P loses heat at a slower rate than container P.
- 45a The ball hit the bell.  
45b Elastic potential energy  $\longrightarrow$  kinetic energy  $\longrightarrow$  kinetic energy + sound energy