NANYANG PRIMARY SCHOOL

PRIMARY 6 SCIENCE

FIRST CONTINUAL ASSESSMENT 2006

Name : _____( ) Date : _____

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

Parent's signature: _____ Score : 100

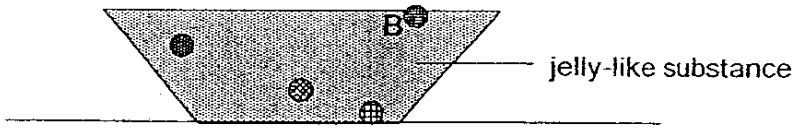
Section A (30 x 2 marks = 60 marks)

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. In which one of the following groups are all the objects obtained from things that were once alive?

   (1) needle, twig, hair, glass rod
   (2) leather bag, book, tyre, silk handkerchief
   (3) silk tie, rubber boots, drinking straw, nichrome wire
   (4) woollen scarf, soil, wooden chopsticks, cotton shirt

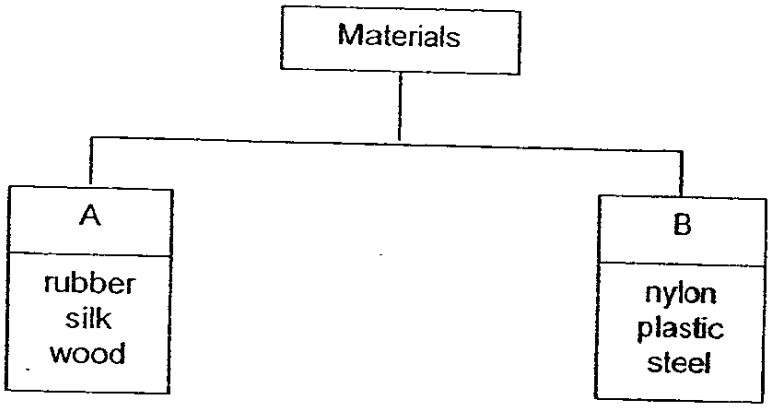
2. The diagram below shows what happened when Sumin dropped 4 solid balls of different materials from the same height into a trough of thick jelly-like substance.



   Which one of the following materials is Ball B most possibly made of?

   (1) iron
   (2) glass
   (3) plasticine
   (4) styrofoam

3. Study the classification table below.



Which of the following headings best fit A and B respectively?

	A	B
(1)	Waterproof	Not waterproof
(2)	Natural	Man-made
(3)	Non-metals	Metals
(4)	Flexible	Not flexible

4. Mrs Tay wants to buy a ball for two-year-old Qixin to play. Which one of these four balls is durable and elastic?

(1)

paper ball

(2)

plastic ball

(3)

metal ball

(4)

wooden ball

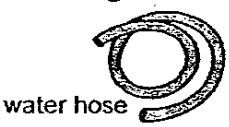
5. Qifa found two objects which have the following properties:

- They are flexible.
- They are poor conductors of heat.
- They can be transparent.

Which of the following objects have the properties mentioned above?

A.

paper clip

B

water hose

C

newspaper

D

porcelain plate

E

rubber band

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

6. In what way is a fern similar to a toadstool?

A. Both are food producers.
B. Both do not produce flowers.
C. Both cause decay to dead organisms.
D. Both depend on the wind for reproduction.

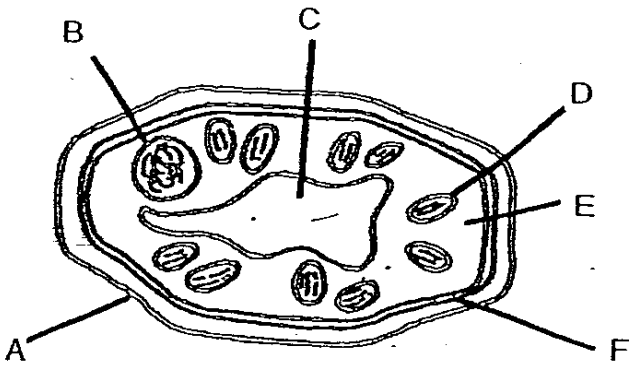
(1) A and B only
(2) A and D only
(3) B and C only
(4) B and D only

7. Under what conditions can we find bread mould growing?

(1) Cold and dry
(2) Warm and dry
(3) Cold and damp
(4) Warm and damp

3

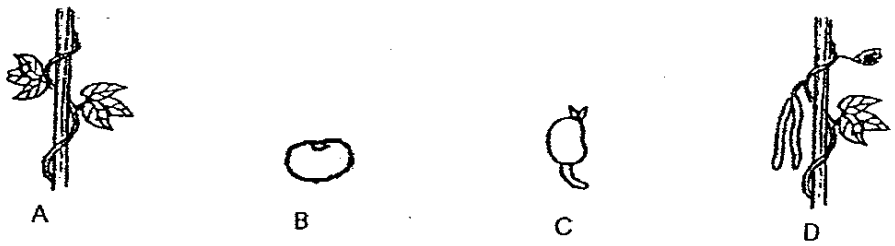
8. The diagram below shows a plant cell.



Which of these features, labelled A to F, differentiate a plant cell from an animal cell?

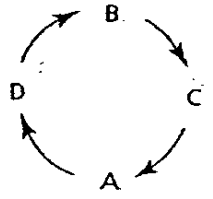
(1) A and D only
(2) D and F only
(3) A, C and D only
(4) B, E and F only

9. The diagrams below show the different stages of growth of a string bean plant.

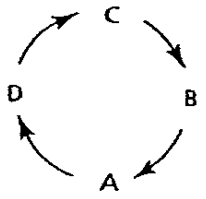


Which one of the following cycles show the correct sequence of the development of the plant?

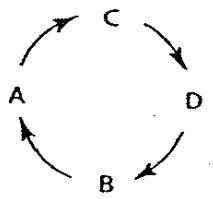
(1)



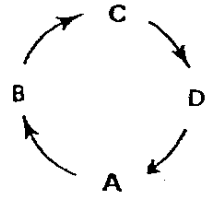
(2)



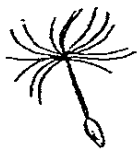
(3)



(4)



10. The diagram below shows a fruit of a plant Y.



Which one of the following fruits has the same method of fruit dispersal as the one shown above?

(1) Lallang
(2) Balsam
(3) Pong-pong
(4) Love grass

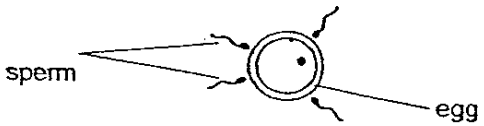
11. Samy wanted to find out how different fertilizers affect plant growth. He prepared 4 pots of seedlings as shown below.

A	B	C	D
30g fertilizer X 80 cm^3 water sandy soil	60g fertilizer X 80 cm^3 water garden soil	30g fertilizer Y 80 cm^3 water sandy soil	60g fertilizer Y 40 cm^3 water garden soil

Which 2 pots of plants should Samy use for the experiment?

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

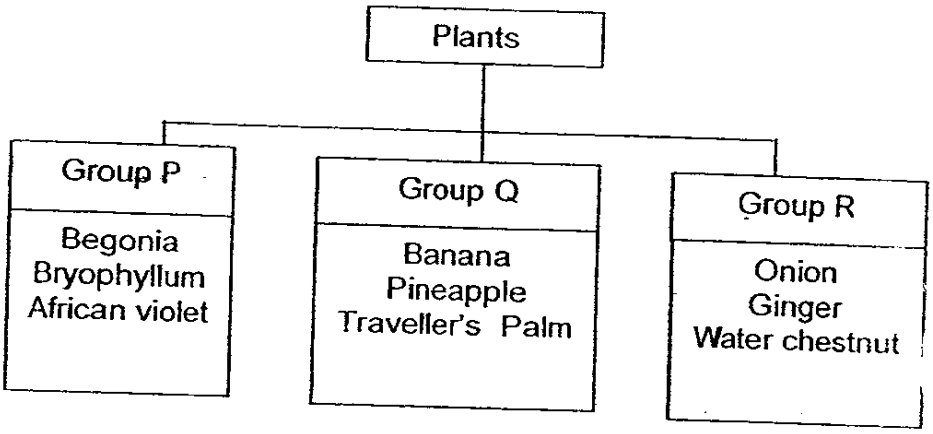
12. The diagram below shows human sperms and an egg.



What is the usual number of sperms needed to fertilize the egg?

(1) 1 only
(2) 2 only
(3) 3 only
(4) 4 only

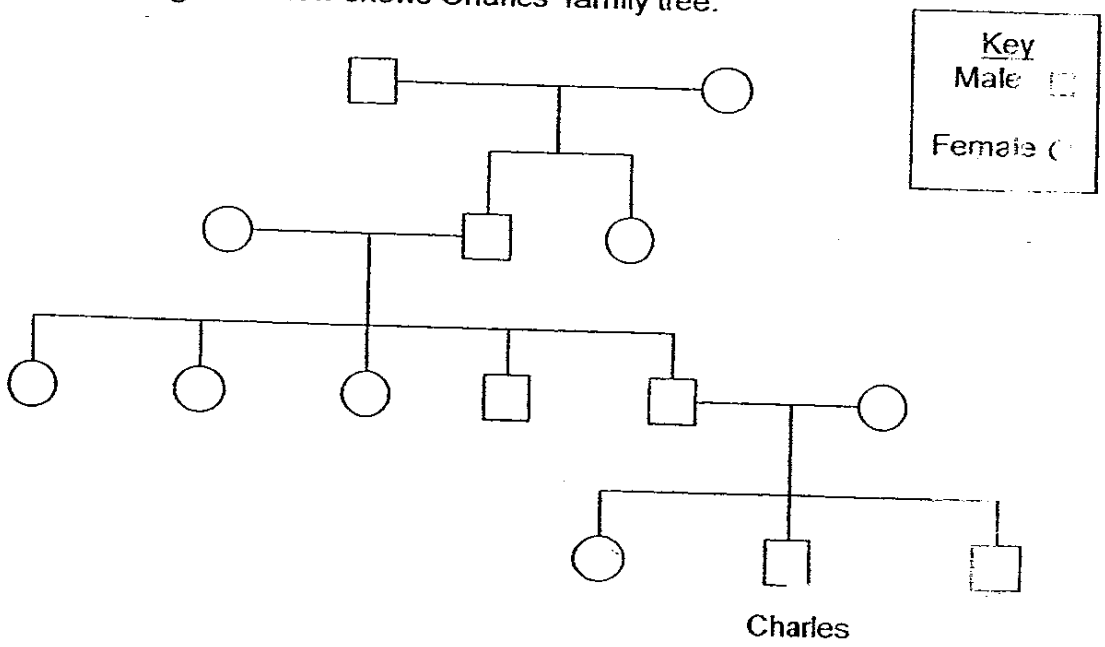
13. Study the classification chart below.



How are the plants above classified?

(1) According to the way they reproduce
(2) According to the way they disperse their seeds
(3) According to whether they produce or consume food
(4) According to whether they are flowering or non-flowering

14. The diagram below shows Charles' family tree.



Which one of the following statements is **wrong**?

(1) Charles has a sister
(2) Charles has 3 aunts and 1 uncle.
(3) There are 3 generations in this family tree.
(4) There are 3 sets of parents in this family tree.

15. As the earth rotates about its axis, which of the following effects does it cause?

A. Causes the day and night cycle
B. Causes the different phases of the moon
C Causes the rate of photosynthesis to change
D. Causes the four seasons – summer, autumn, winter and spring

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

16. The diagram below shows a young bean plant.

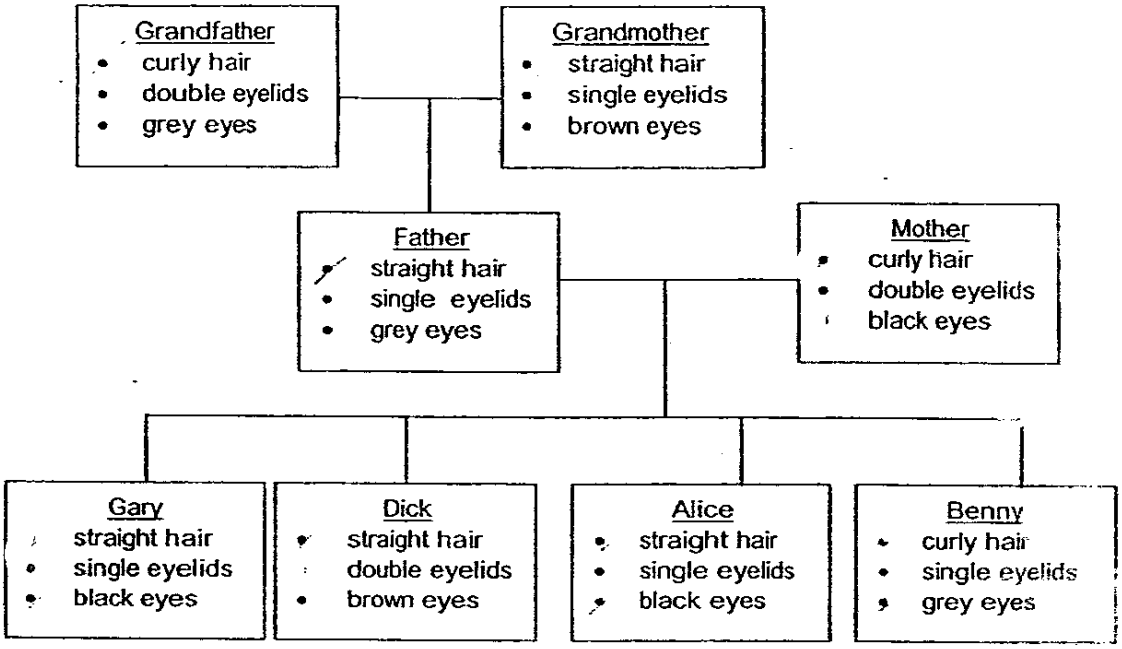
At this stage, what would the young bean plant need in order to grow?

A Water
B. Oxygen
C. Warmth
D. Fertilizers
E Carbon dioxide

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

7

17. The chart below shows the physical traits of Gary's family. Each family member's traits are represented as shown below.



Which child expresses a trait which is not observed in either parent?

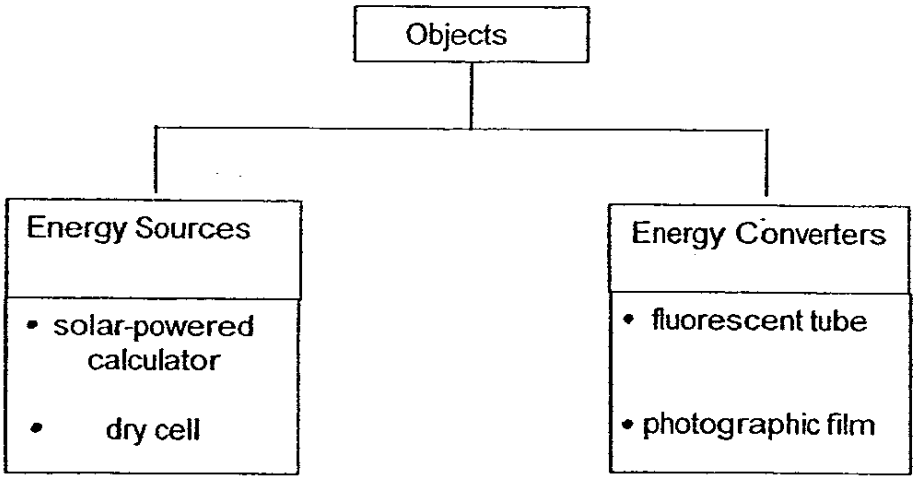
(1) Gary (2) Dick
(3) Alice (4) Benny

18. Which of the following are not fossil fuels ?

A coal
B wood
C palm oil
D charcoal
E petroleum
F natural gas

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

19. Study the following classification table.



Which one of the device has been classified wrongly ?

(1) dry cell
(2) fluorescent tube
(3) photographic film
(4) solar-powered calculator

20. Look at the following device.

Which of the following are useful forms of energy produced when the mobile telephone is used?

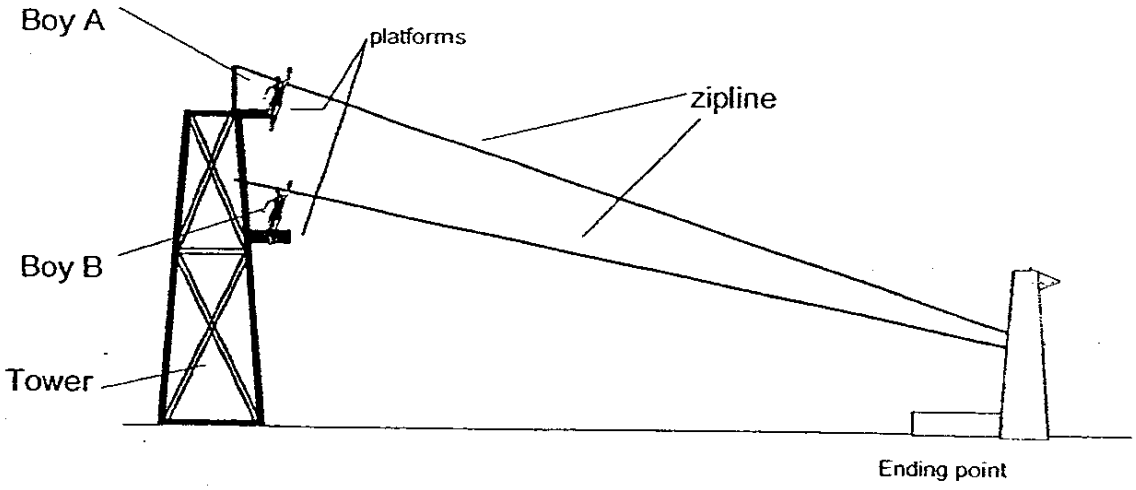
A Sound energy
B Light energy
C Heat energy
D Chemical potential energy
E Electrical energy

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

9

The drawing below shows a zipline or flying fox element in an Adventure Camp.

Use it to answer Questions 21 and 22.

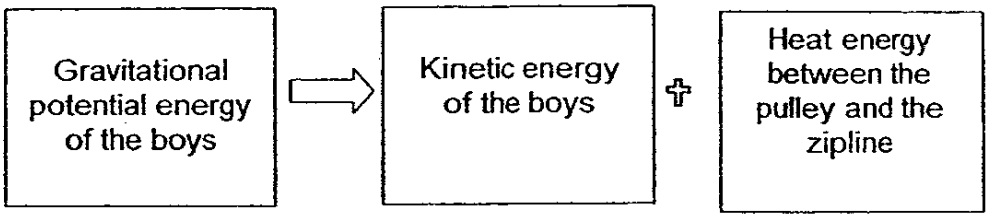


21. Which one of the following statements best describes the gravitational potential energy possessed by the two boys of similar built at the platforms?

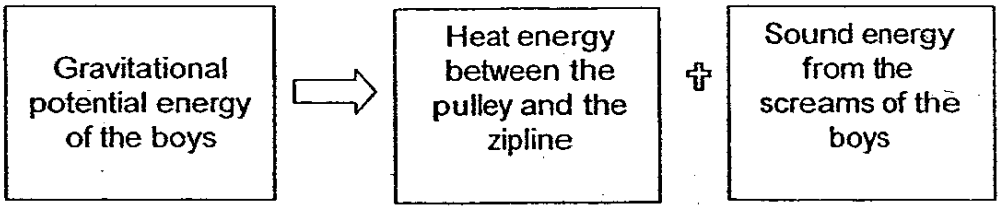
(1) Both of them have no gravitational potential energy.
(2) Both of them have the same gravitational potential energy.
(3) Boy A has less gravitational potential energy than Boy B.
(4) Boy A has more gravitational potential energy than Boy B.

22. Which of the following energy conversion best describes what happens when the boys fly down the zipline ?

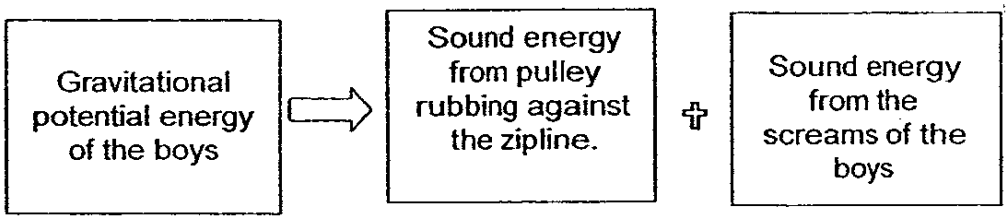
(1)



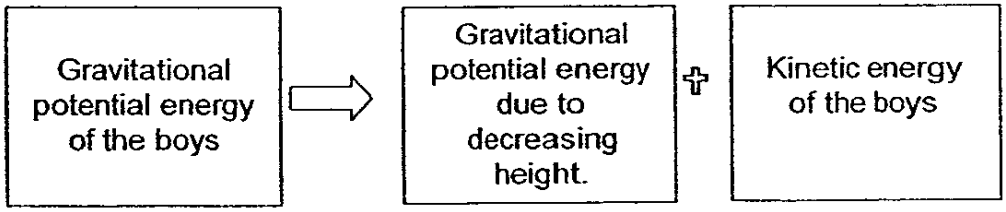
(2)



(3)



(4)



23. Which of the following home appliances use heat energy to help us to do work ?

A iron
B table lamp
C electric fan
D microwave oven

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

24. Study the following pictures carefully.

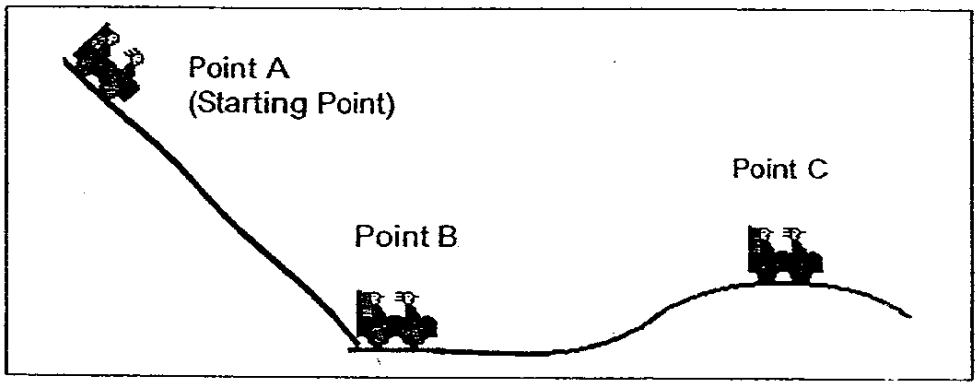
A B

Picture A shows the position of a dart in the gun when the spring is compressed while picture B shows what happens when the trigger is pulled.

Which one of the following statements best describes what the experiment demonstrates ?

(1) The compressed spring has sound energy.
(2) The compressed spring has kinetic energy.
(3) The compressed spring has elastic potential energy.
(4) The compressed spring has chemical potential energy.

25. Look at the drawing below which shows the movement of a roller coaster carriage.

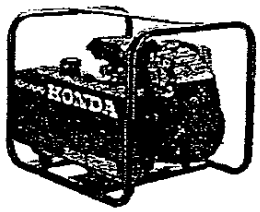


Which one of the following statements about the carriage is most likely to be correct ?

(1) The carriage has the highest amount of kinetic energy at point A.
(2) The carriage has the greatest amount of potential energy at point B.
(3) The carriage has a higher amount of kinetic energy at point C than at point B.
(4) The carriage has the highest amount of kinetic energy at point B.

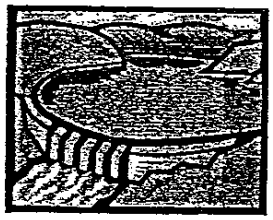
26. Which one of the following cannot be used to convert kinetic energy to electrical energy?

(1)



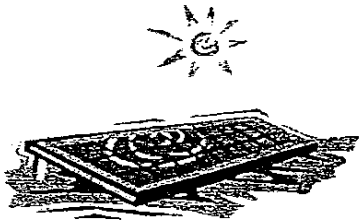
portable generator

(2)



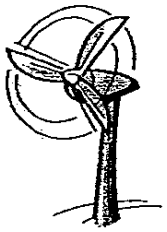
hydroelectric power stations

(3)



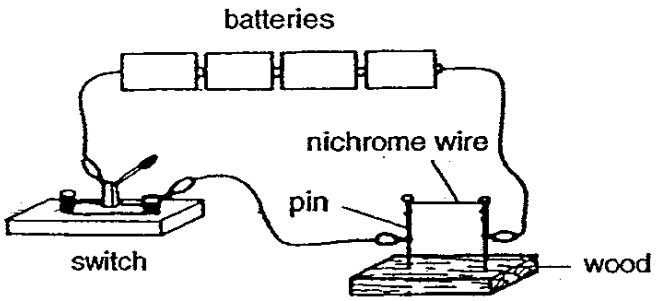
solar panels

(4)



windmill

27. Study the experimental setup shown below.

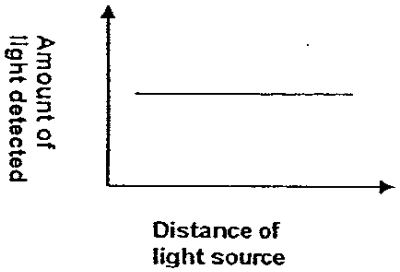


Which one of the following shows the correct energy conversion in the setup when the switch is closed?

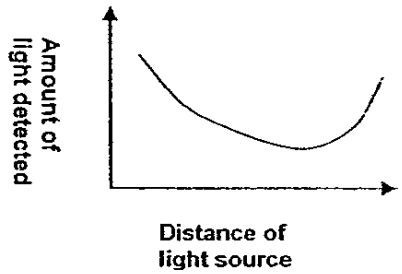
(1) electrical energy to heat energy
(2) electrical energy to kinetic energy to heat energy
(3) chemical potential energy to electrical energy to heat energy.
(4) chemical potential energy to electrical energy to light energy to heat energy

28. The light sensor in a datalogger measures the amount of light that it is exposed to. Which one of the following graphs shows how the reading of the datalogger changes as the light source is placed further away from the light sensor ?

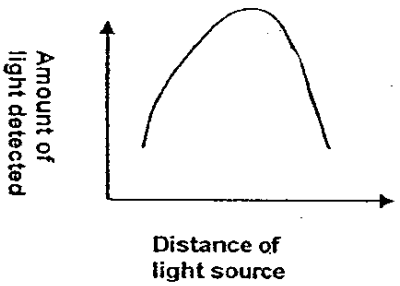
(1)



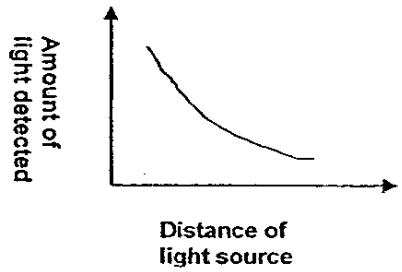
(2)



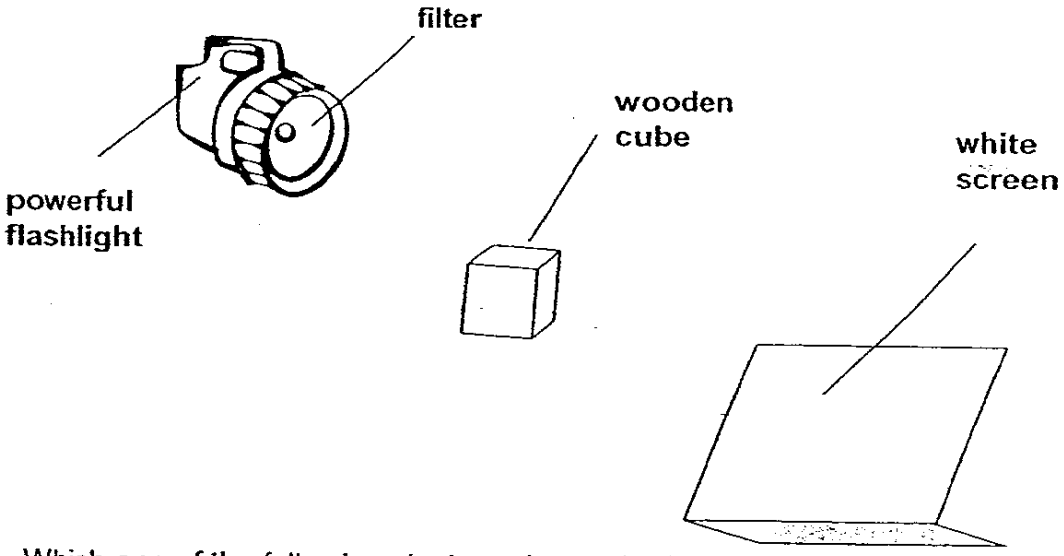
(3)



(4)

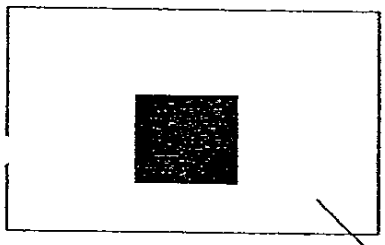


29. In the experimental setup below, filters made from different materials may be placed at the front of the flashlight. The wooden cube is placed directly between the flashlight and the screen. Depending on the material of the filter used, a shadow of the wooden cube will be cast on the screen.



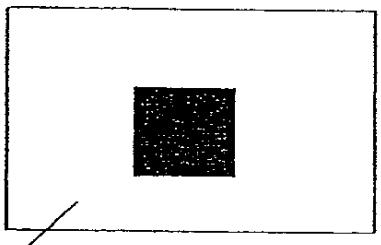
Which one of the following shadows is matched correctly to the filter used ?

(1)



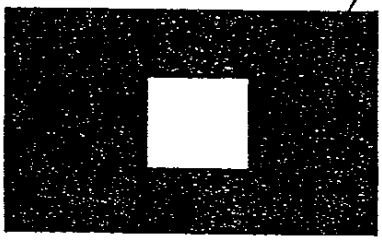
Filter used : clear plastic

(2)



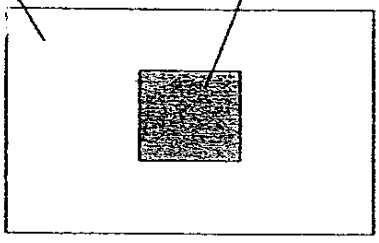
Filter used : cardboard

(3)



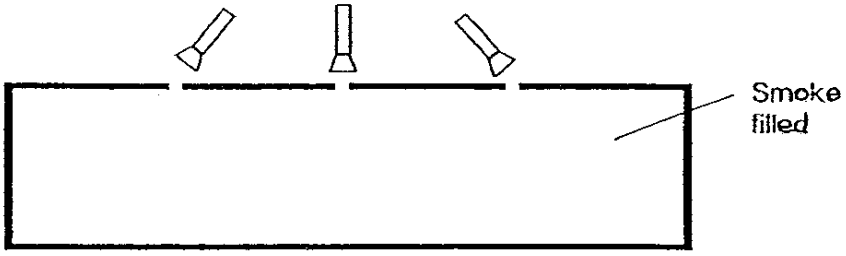
Filter used : tracing paper

(4)



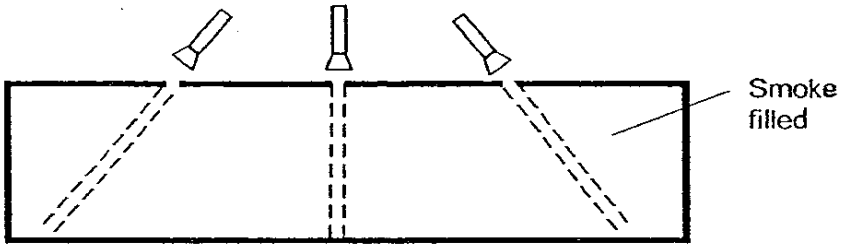
Filter used : red clear plastic

30. Taufik set up an experiment with a box that had a glass panel on one side and three holes at the top. He placed a mosquito coil inside the box so that the box is filled with smoke. He placed the whole setup in a darkened room and shone three torchlights into each of the holes as shown below.

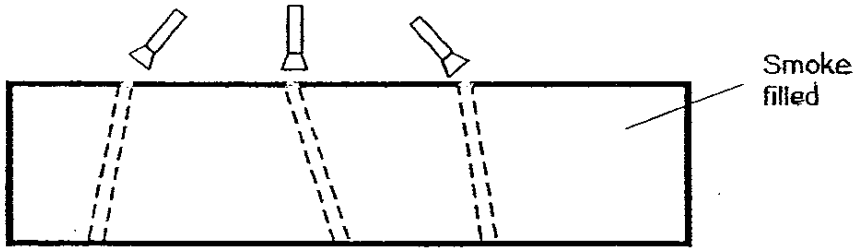


Which of the following drawing showed his experimental results correctly?

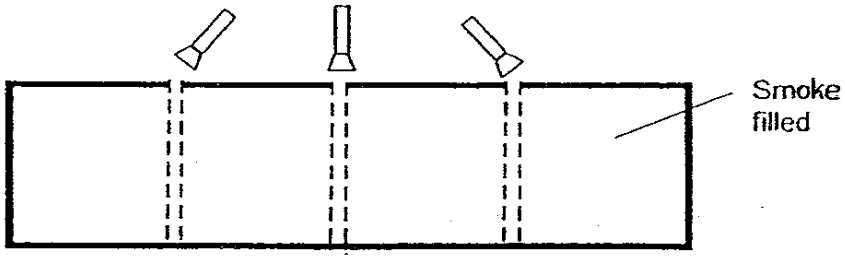
(1)



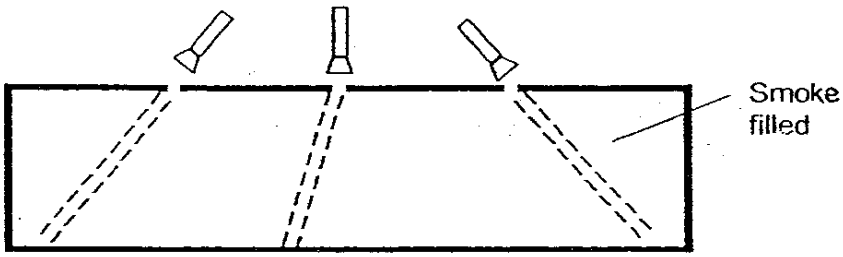
(2)



(3)



(4)



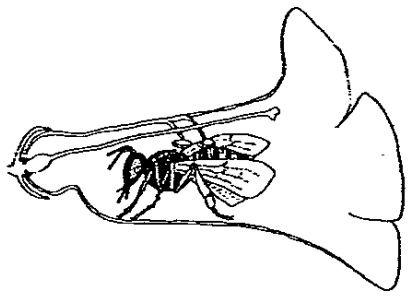
Name : _____( ) Date : _____

Class : Primary 6 ( )

Section B (40 marks)

Write your answers to questions 31 to 46 in the spaces provided.
Marks will be deducted for misspelt key words.

31. The diagram below shows an insect inside a flower. It was observed that the insect entered and emerged from the flower a few minutes later.



(a) State a reason why the insect would make its way into the flower (1m)

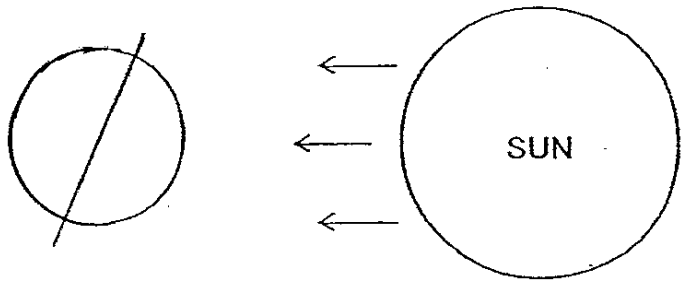
_____

(b) Explain how this insect helps to pollinate the flowers. (1m)

_____

_____

32. The diagram below shows the earth's position in relation to the Sun.



(a) Shade the part on Earth that is experiencing night time. (1m)

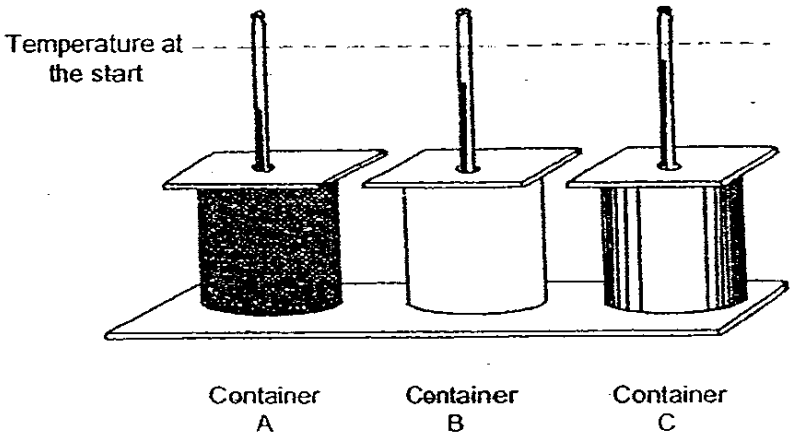
(b). Although the moon is not a star, we can usually see it at night. Explain why we are able to see it at night. (1m)

_____

_____

17

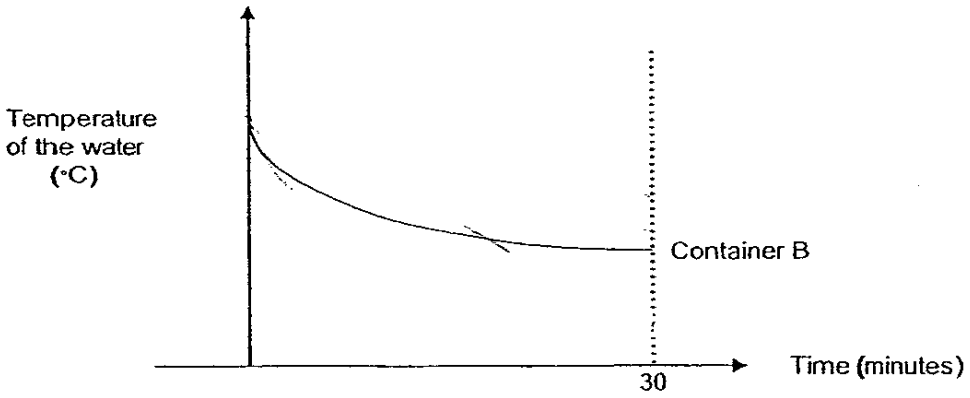
33. Ali poured hot water of the same temperature into 3 containers, A, B and C, made of different materials. Next, he placed a cardboard cover over each container and a thermometer through a hole in each of the covers. Ali recorded the temperature of the water in each of the containers at 3 minute intervals for a period of 30 minutes.



(a) Name another variable that Ali had to keep the same to make it a fair test. (1m)

_____

(b) If the thermometers showed a steady rate of cooling as shown in the diagram above, complete the graphs for Containers A and C below. Label your graphs. (2m)

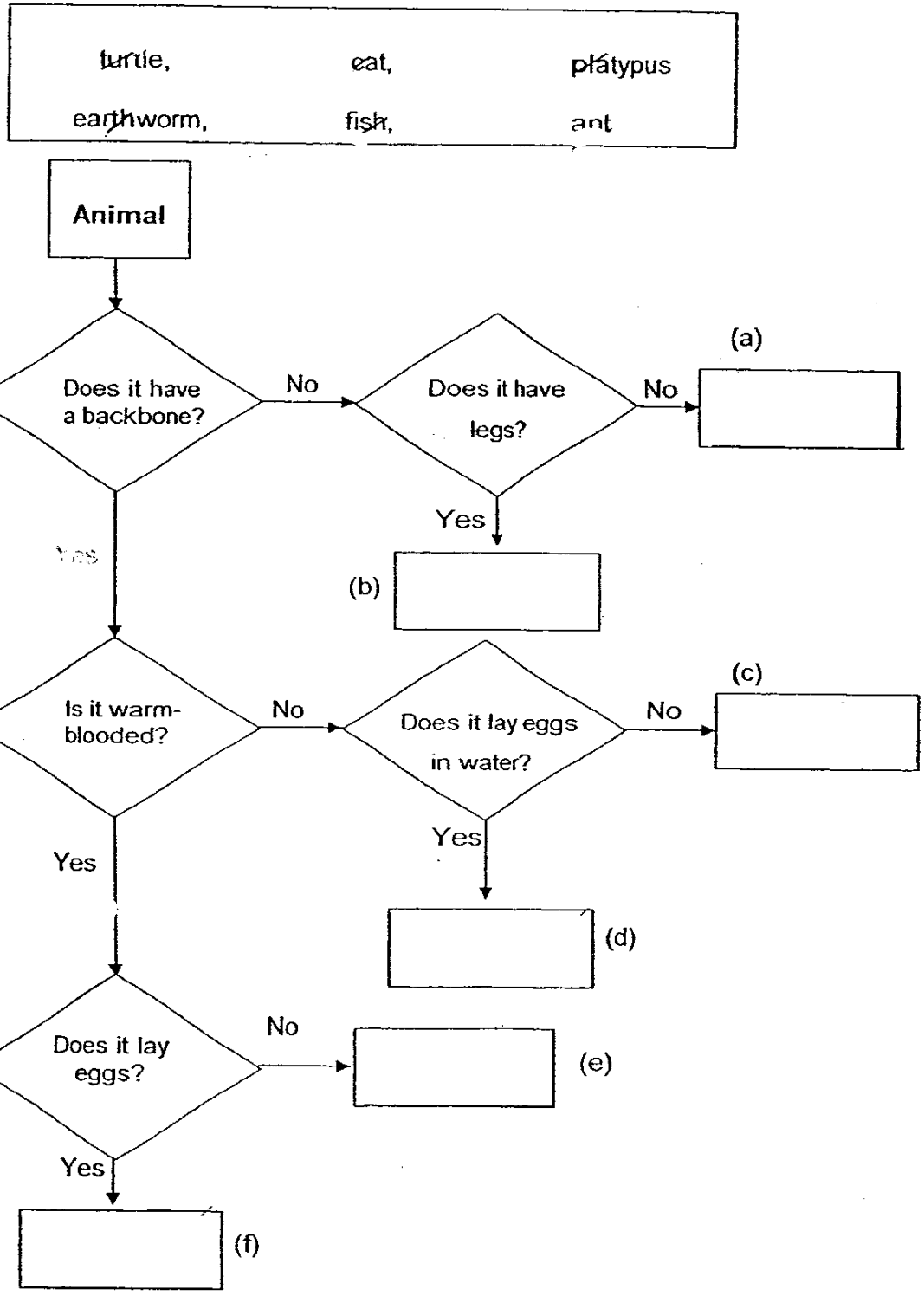


(c) If Mrs Lim wanted to buy a container which would keep her food warm for as long as possible, which container (A, B or C) should she buy? (1m)

_____

18

34. * Complete the flowchart below by using the words given in the list. Each word can only be used **once**. (3m)



/9

35. The cockroach has a 3-stage life cycle. Write down 2 differences between the nymph and the adult cockroach. (2m)

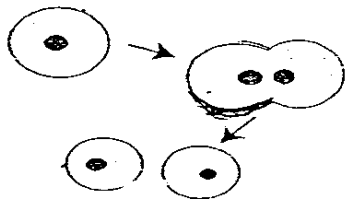
(i) _____

_____

(ii) _____

_____

36. Study the diagram below. It shows a process that cells go through.



(a) What is the process called? (1m)

_____

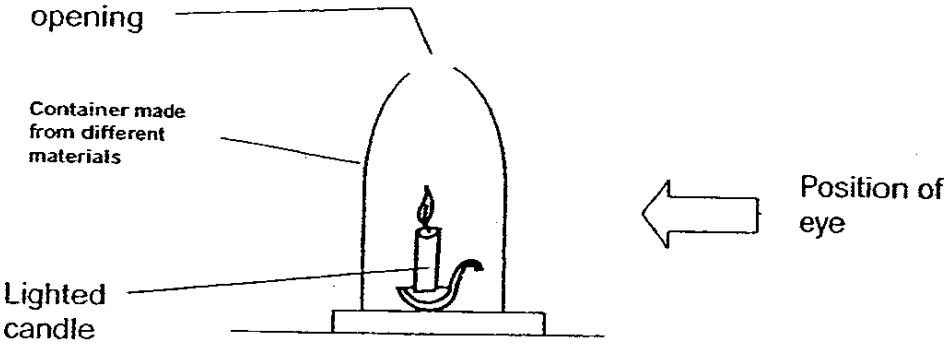
(b) State a reason why this process is important. (1m)

_____

(c) On the diagram above, label the parent cell and a daughter cell. (1m)

20

37. Jen Tao set up the following experiment.



(a) Jen Tao covered the lighted candle, as shown above, with two containers made from materials X and Y respectively. He was able to see the candle when it was covered by the container made from material X but not for that made from material Y.

What property of light was Jen Tao trying to show in his experiment ? (1m)

_____

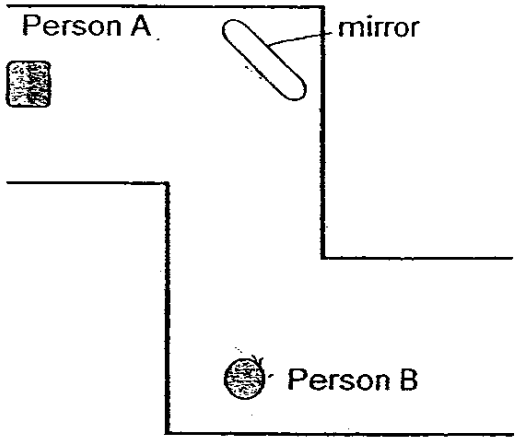
_____

(b) Why was it important to have an opening at the top of each container for this experiment? (1m)

_____

_____

38. Study the drawing below which shows a corridor in an office building.



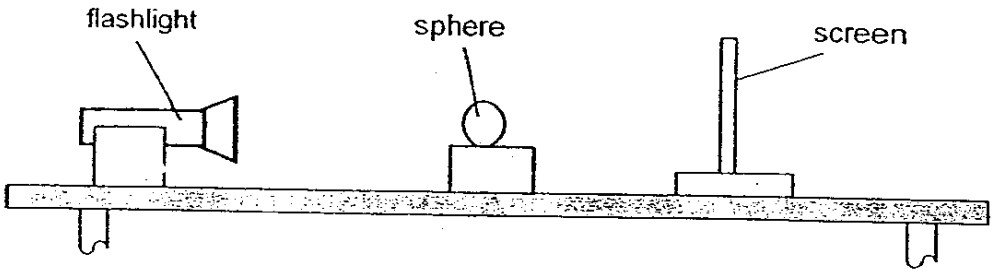
(a) Draw two straight lines starting from B to indicate the path of light such that A is able to see B around the corner. (1m)

(b) What property of light is demonstrated in the above setup ? (1m)

_____

_____

39. Jan Wei performed an experiment using the set-up below.



A shadow was formed on the screen when the flashlight was switched on in a dark room.

(a) Explain why the shadow was formed. (1m)

_____

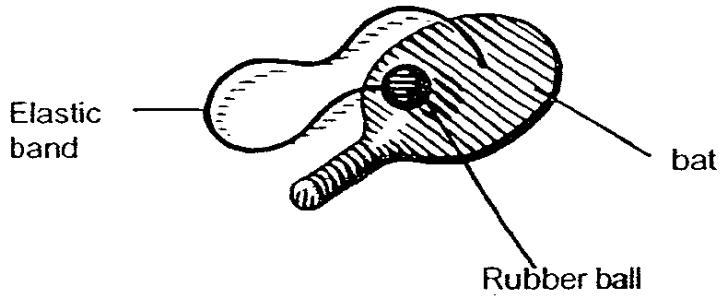
_____

(b) As the sphere was moved towards the flashlight, what change(s) in the shadow would Jan Wei observe on the screen ? (1m)

_____

_____

40. The following picture shows a toy called a paddle ball.



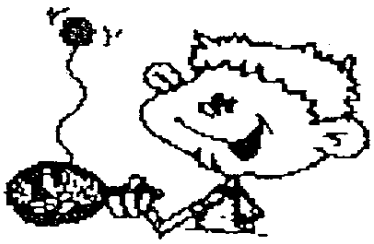
(a) Patrick wanted to find out how the type of elastic band would affect the distance travelled by the rubber ball when it was hit.
What are the two variables that he must keep the same to make this fair test?

(1m),

_____

_____

The picture below shows the paddle ball after it was hit by the bat.



(b) What main form(s) of energy was/were possessed by the rubber ball after it was hit by the bat? (1m)

_____

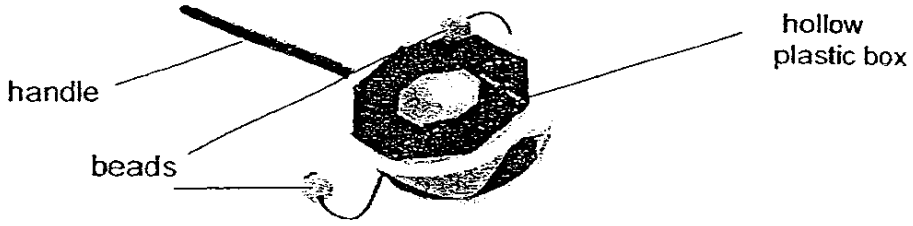
_____

(c) Why was it important for Patrick to take down at least 3 readings for each type of elastic band during the experiment? (1m)

_____

_____

41. Jaminah conducted an experiment using a noisemaker as shown below.

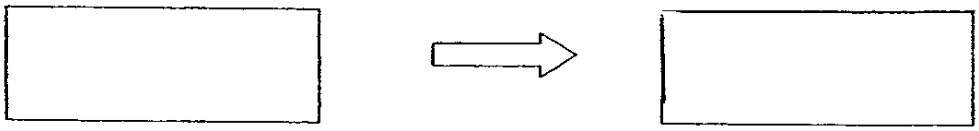


The noisemaker made a 'pong-pong" sound when it was twirled using the handle.
In Jaminah's experiment, she wanted to find out how the material of the hollow box affected the loudness of the sound produced. She changed the material on which the beads would strike by pasting each new material onto the hollow plastic box.

(a) Name a material that she could use to produce a soft sound. (1m)

_____

(b) What was the energy change that occurred when the noisemaker was used ? Write the appropriate form of energy in the boxes below. (1m)



(c) State one variable that Jaminah must control to make this a fair test. (1m)

_____

_____

(d) Explain in terms of energy why the loudness of the noisemaker increased when it was twirled at a greater speed. (1m)

_____

_____

25

42. When Mrs Goh went on a winter holiday to Korea, she obtained a pamphlet that advised her on the thick clothing to prepare. The number of layers of clothing she needs to wear depends on the temperature of the surroundings.

Temperature of the surroundings (°C)	25	17	7	0
Number of layers of clothing	1	2	3	4

(a) What is the relationship between the temperature of the surroundings and the number of layers of clothing needed to protect a person from the cold ? (1m)

_____

_____

(b) Explain how layers of clothing help to keep a person warm in winter. (1m)

_____

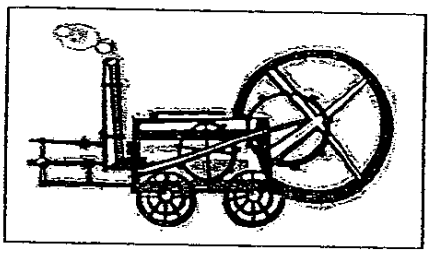
_____

(c) Where do humans get their source of energy to generate heat energy in their bodies ? (1m)

_____

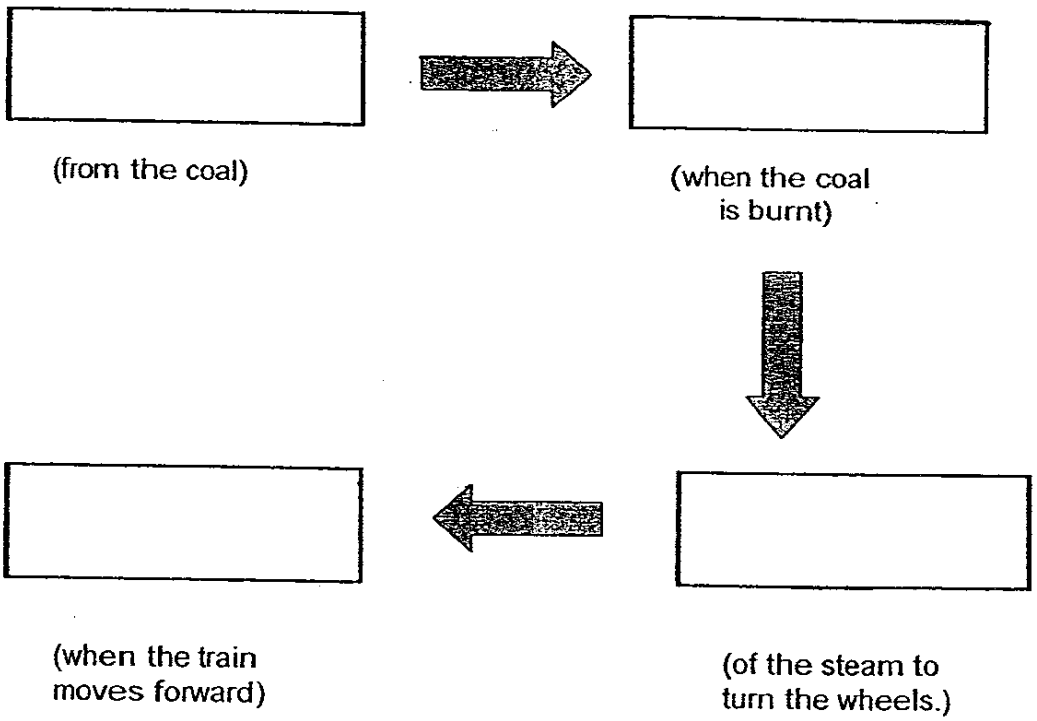
_____

43. Look at the following picture of a train.

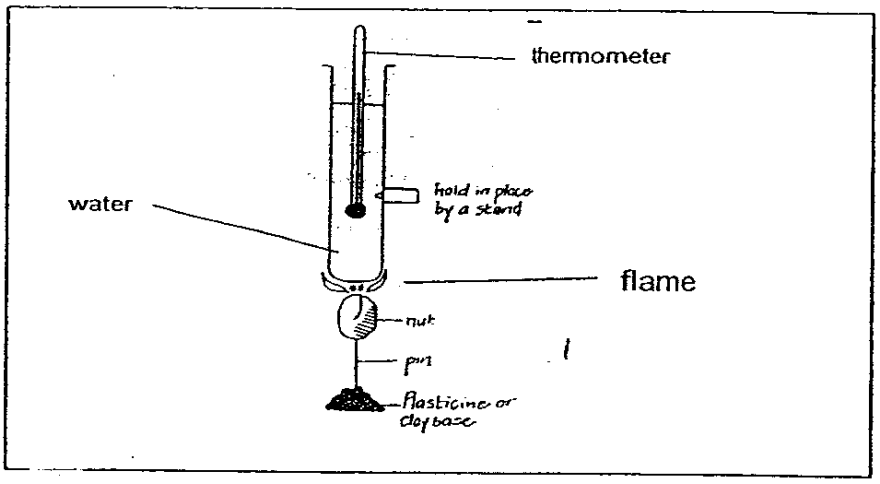


Coal is used as a fuel to run the steam engine to produce the necessary power to move the train.

Complete the following energy conversion by writing the appropriate forms of energy in the boxes provided. (2m)



44 Study the experiment shown below.



In the experiment shown above, the nut was lighted and allowed to burn until the flame was extinguished. The temperature of the water was then measured with the thermometer.

The experiment was then repeated with a piece of marshmallow and a piece of dried corn.

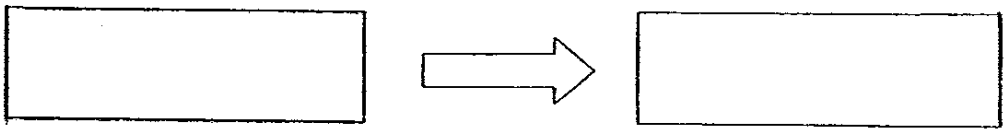
For each experiment, it was noted that the temperature of the water rose.

(a) What does the result of the experiment shows about food? (1m)

_____

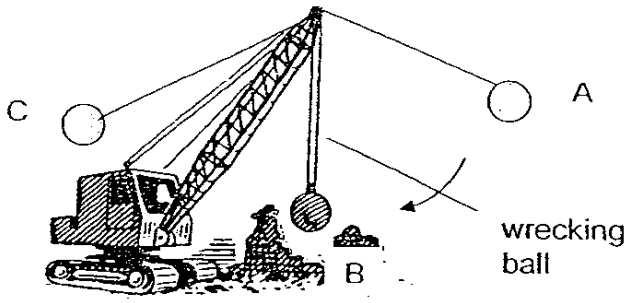
_____

(b) Fill in the following energy conversion with the appropriate forms of energy based on the experiment above. (1m)



(from food) (in the water)

45. The following picture shows a wrecking ball machine.



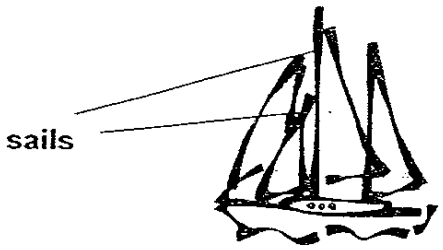
(a) What is the energy change in the wrecking ball when it swings downwards from position A to position B ? (1m)

_____

(b) At which position, A, B or C does the wrecking ball possess the most kinetic energy ? (1m)

_____

46. The picture below shows a sailboat which has four sails of different sizes.



(a) What is the source of energy that propels the sailboat forward? (1m)

_____

_____

(b) What is the relationship between the number of sails that are put up and the speed of the sailboat ? (1m)

_____

_____

********** END OF PAPER **********

Setters : Mrs Lily Lee & Mr Ting Huat Seng

29

Nanyang Primary School

Primary 6 Science CA1 Exams (2006)

(ANSWER KEY)

SECTION A : (60 MARKS)

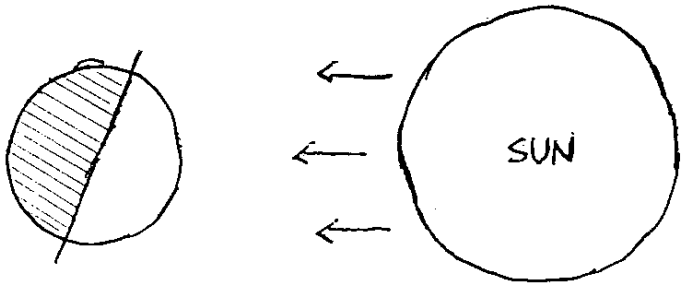
Qn no.	Ans
1	2
2	4
3	2
4	2
5	3
6	4
7	4
8	3
9	1
10	1

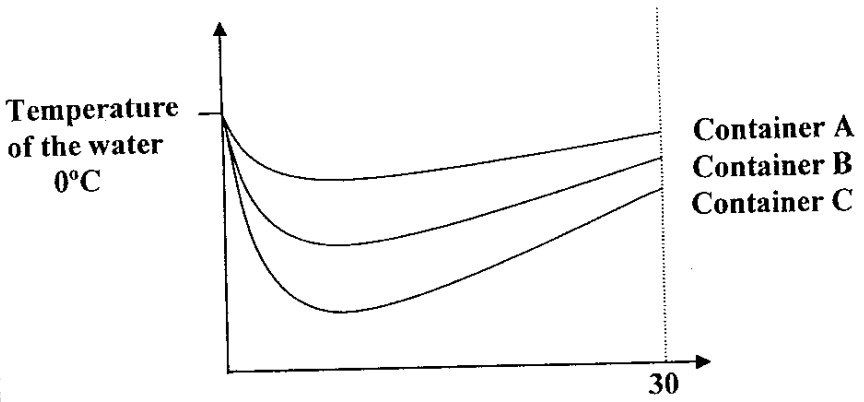
Qn no.	Ans
11	2
12	1
13	1
14	3
15	2
16	1
17	2
18	3
19	4
20	1

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

SECTION B (40 MARKS)

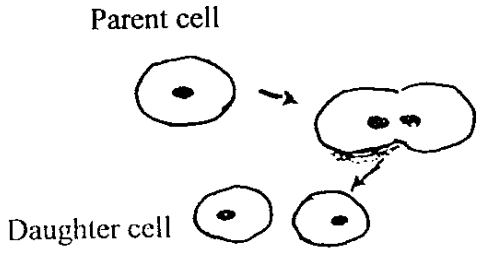
Qn No.	Answers
31a	To collect nectar which is inside the flower?
31b	As it goes into the flower, the pollen grain from the anther stick to the insect when it flies to other flowers, the pollen grains will stick on the stigma.

32a	
32b	The moon reflects light from the sun into our eyes.

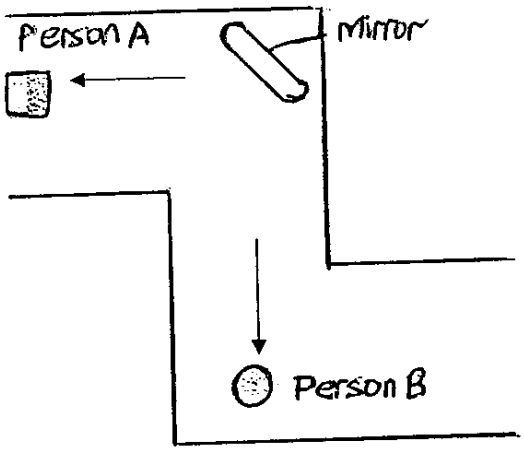
Qn No.	Answers
33a	The amount of hot water had to be the same.
33b	
33c	She should buy container C.

34a	Earthworm
34b	turtle
34c	Ant
34d	fish
34e	Cat
34f	platypus

35 (i)	The nymph does not have wings but the adult cockroach has wings.
(ii)	The nymph moults, but the adults do not.

36a	Cell division
36b	The animals can grow in size. The organism needs new cell to replace old or damaged cells.
36c	

Qn No.	Answers
37a	Jen Tao was trying to show that light passes through some materials but not others.
37b	It is to ensure that there wills always oxygen in the container to keep the candle burning.

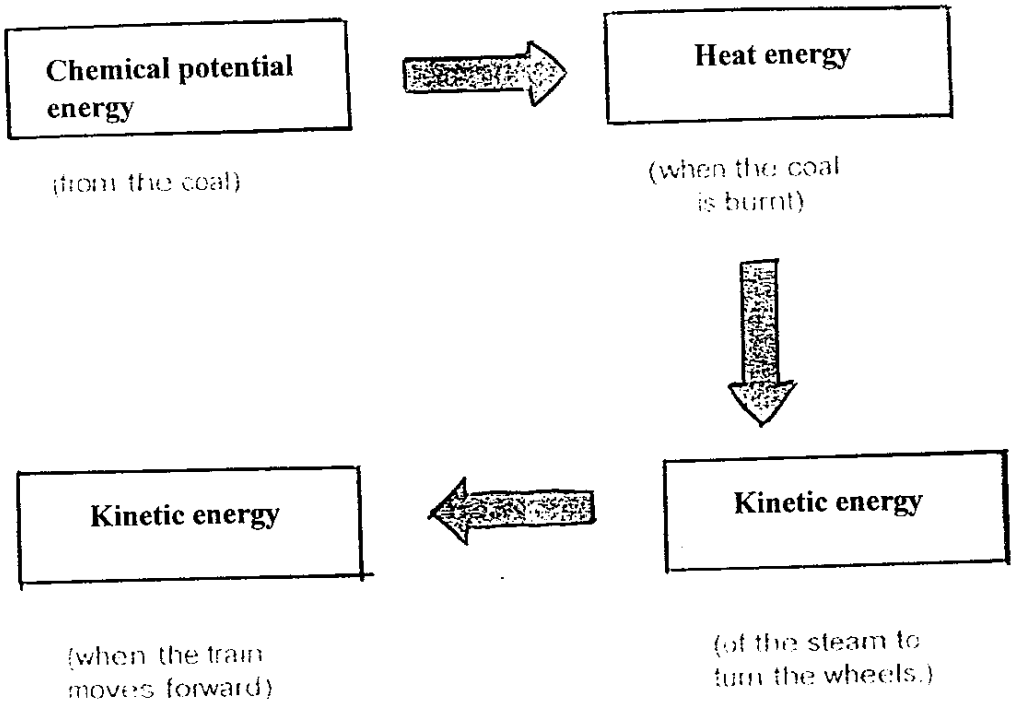
38a	
38b	Light travels in straight lines and can be reflected.

39a	A shadow was formed when light is blocked by the sphere which is opaque.
39b	The shadow would get bigger.

40a	Size of bat / type of bat /weight of ball / material of bat.
40b	The rubber ball possessed kinetic energy and gravitational potential energy,
40c	To ensure that the results are reliable.

41a	She could use cloth.
41b	Kinetic energy ⟶ sound energy.
41c	The weight of the beads.
41d.	More kinetic energy is present to be converted into sound energy.

42a	The lower the temperature of the surroundings, the move layers of clothes is needed.
42b	The layers of clothing help to retain the heat energy from the body.
42c	From the food that they eat.

Qn No.	Answers
43	

44a	**The exponents proved that food gives off energy or the nut has energy.**
44b	**Chemical potential energy ⟶ heat energy.**

45a	**Gravitational potential ⟶ kinetic energy.**
45b	**Position B**

46a	**The wind is the source of energy.**
46b	**The more sails there are, the faster the sail boat travels.**