HENRY PARK PRIMARY SCHOOL

2008 SEMESTRAL EXAMINATION 2

PRIMARY 5 SCIENCE

PART 1

Name: _____ ( )

Class: Primary _____

100

30 Questions
60 Marks

Total Time for Part 1 and 2: 1 h 45 min

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

READ AND FOLLOW INSTRUCTIONS CAREFULLY.

PART 1 (60 marks)

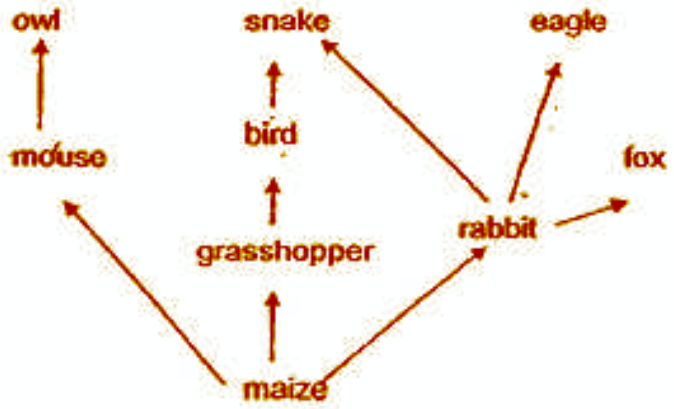
For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1,2,3 or 4). Shade the correct oval (1,2,3 or 4) on the Optical Answer Sheet.

1. Jamie wanted to investigate the effect of lights on the rate of photosynthesis of hydrilla plants. One beaker of the hydrilla plants was placed under 1 lamp while another beaker was placed under 2 lamps. Both set-ups were left for 3 hours.

Which one of the following should she measure to determine the effect of light on the rate of photosynthesis of hydrilla plants ?

(1) intensity of light used
(2) amount of oxygen produced
(3) amount of water left in the beaker
(4) length of the leaf before and after the experiment

2. Study the following food relationships.



How many organisms above feed on animals only?

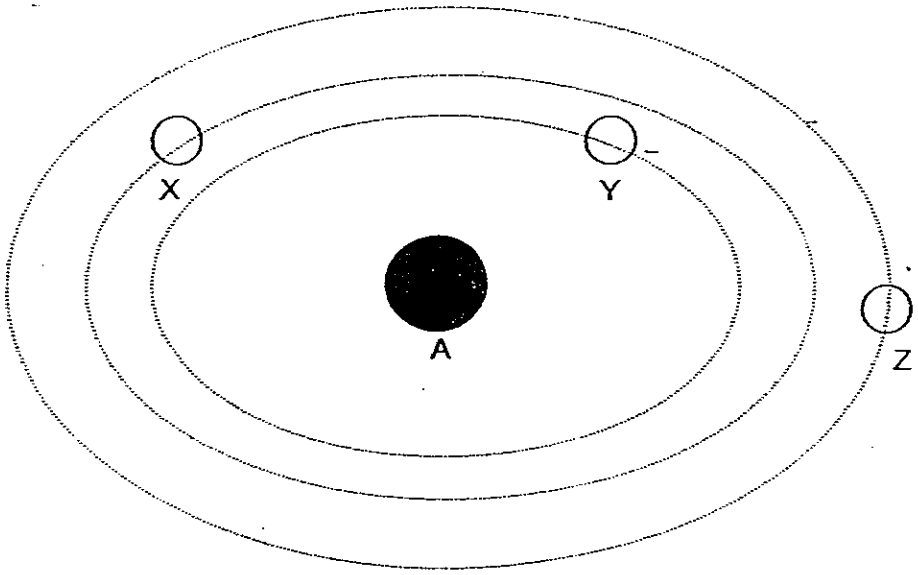
(1) 2 only
(2) 3 only
(3) 4 only
(4) 5 only

3. Which of the following statements about respiration are true?

A. Cells may respire at different rates.
B. Oxygen is needed for respiration to occur.
C. Respiration can only take place in living cells.
D. Respiration process breaks down food to release sugar.

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

4. The diagram below shows 4 objects in space, A , X, Y and Z. The dotted lines show the paths taken by the objects revolving around A.



Which of the following can be inferred using only the information given in the above diagram?

A: Objects X, Y and Z are satellites of A.
B: Object A gives out heat and light to X, Y and Z.
C: Object Z takes the longest time to orbit around A.
D: Temperature on Z is likely to be higher than temperature on X.

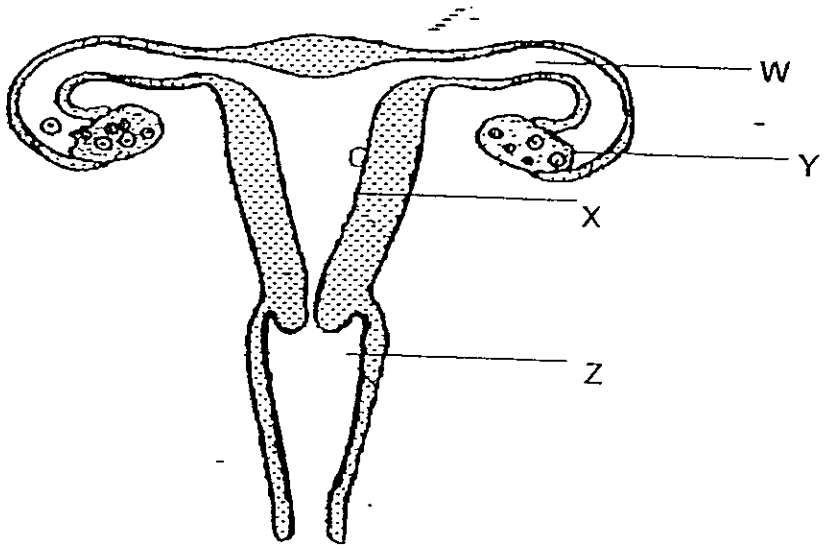
(1) A and B only
(2) A and C only
(3) B and C only
(4) A, B, C and D only

5. Which of the following statement is true about the rotation of the Earth?

A: The Earth rotates from the East to the West.
B: Rotation of the Earth causes the four seasons.
C: Rotation of the Earth brings about night and day.

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

6. The figure below shows the female reproductive system.



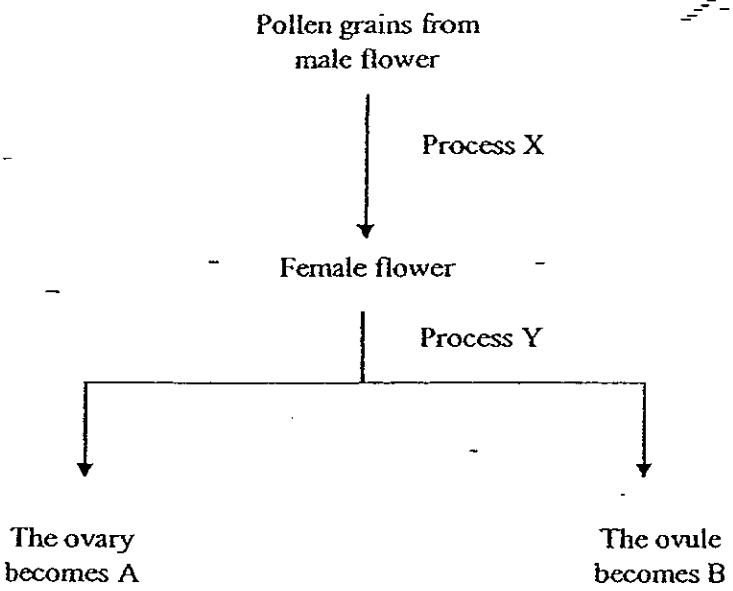
Which one of the following correctly identifies the part of the system where egg fertilisation and implantation for normal pregnancy to take place? (Implantation of the embryo is the attachment of the embryo to the lining of the womb.)

	Fertilisation	Implantation
(1)	W	X
(2)	Y	Z
(3)	W	W
(4)	X	Z

7. Which one of the following statements about reproduction is true?

(1) All plants that reproduce asexually cannot bear flowers.
(2) Human cells reproduce by binary fission.
(3) All plants must have both male and female reproductive parts to reproduce.
(4) Not all plants have both male and female reproductive parts found in the same flower.

8. Study the flow chart plant about reproduction below.

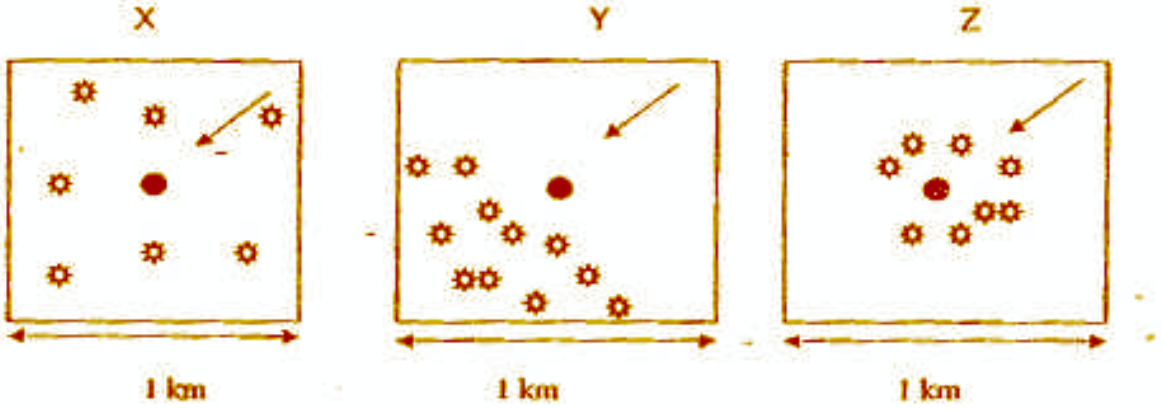


Which one of the following correctly identifies A, B, X and Y?

	Parts of the plant		Processes	
	A	B	X	Y
(1)	fruit	seed	fertilisation	pollination
(2)	seed	fruit	pollination	fertilisation
(3)	fruit	seed	pollination	fertilisation
(4)	seed	fruit	fertilisation	pollination

9. The diagrams below show the fruits of three species of plants.

The dispersal patterns X, Y and Z of these plants are shown below.



Legend:

●	parent plant
✲	seedlings
↙	direction of wind

Which species of plants would produce dispersal patterns X, Y and Z respectively?

	Species 1	Species 2	Species 3
(1)	X	Y	Z
(2)	Y	Z	X
(3)	Z	Y	X
(4)	Y	X	Z

10. The table shows certain characteristics of some plants. Young Plants Q and R are the offspring of Parent Plant P. One of these young plants is reproduced sexually while the other is reproduced asexually.

Features	Parent Plant P	Young Plant Q	Young Plant R
Flowers	White	White	Pink
Height	Tall	Tall	Tall
Size of Fruit	Small	Small	Big

Which of the following statement about Young Plants Q and R is correct?

A : Plant Q is genetically identical to Plant P while Plant R is not.
B : Plant R will have a higher chance of inheriting disease from Plant P.
C : Plant Q is produced asexually while Plant R is produced sexually.

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

11. Which of the following conditions are needed for germination of seeds to take place?

A: sunlight
B: air
C: warmth
D: space
E: water

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

12. In the following diagrams A to D, indicate the correct order of the stages of budding in a yeast cell.

A

B

C

D

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

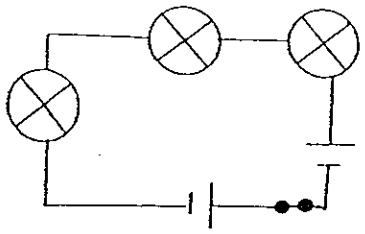
13. Which of the following part(s) can be found in both plant and animal cells?

A: chloroplast
B: nucleus
C: cytoplasm
D: cell membrane

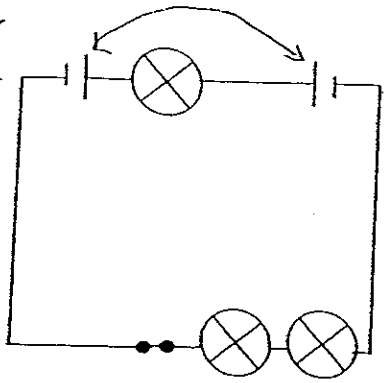
(1) B only
(2) B and C only
(3) B, C and D only
(4) A, B, C and D

14. Which of the following circuits allow all the 3 bulbs to light up? Assume that at least 2 ~~two~~ batteries in series are needed to light up 3 bulbs.

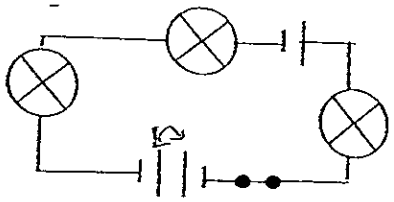
(A)



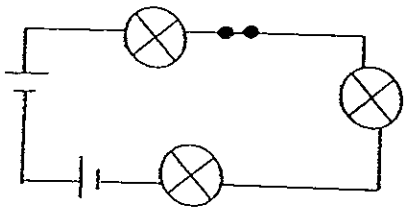
(B)



(C)

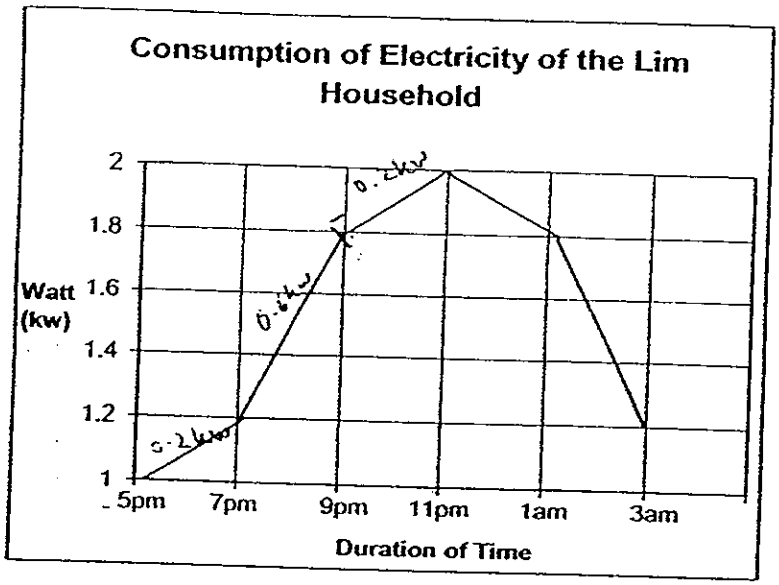


(D)



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

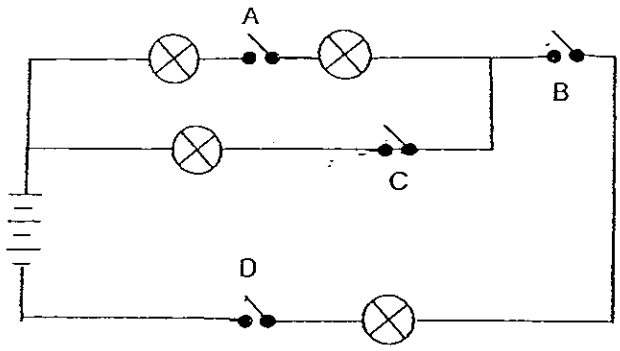
15. The graph below shows the electricity consumption of the Lim household in one evening between 5 pm to 3 am. Study the data in the graph below carefully.



Which of the following time interval shows the highest increase in the level of consumption in electricity?

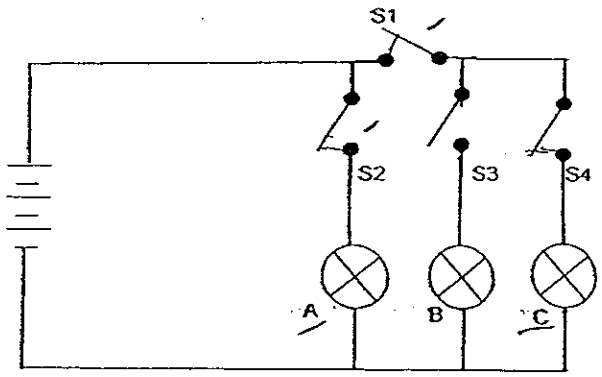
(1) 5 pm to 7 pm
(2) 7 pm to 9 pm
(3) 9 pm to 11 pm
(4) 1 am to 3 am

16. In the setup shown, which switch controls only one bulb?



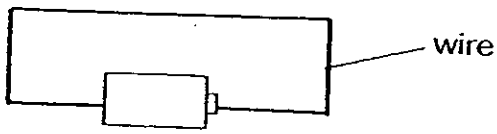
(1) A
(2) B
(3) C
(4) D

17. Study the circuit below carefully. To enable only Bulb A and C to light up, which switches must be turned on?



(1) S2 and S4 only
(2) S1 and S2 only
(3) S1, S2 and S4 only
(4) S2, S3 and S4 only

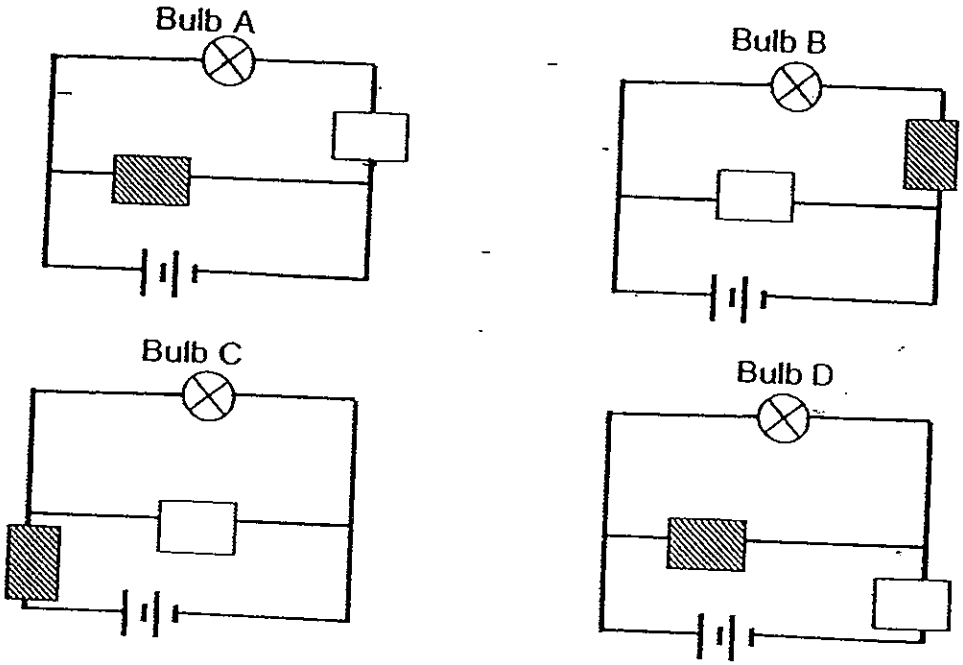
18. Ali arranged the following setup with a battery and wire to find out if the battery's energy would be depleted.



After 30 minutes, Ali observed the battery and the wire and made the following statements. Which of the following statements is true?

(1) The wire and battery would become hot.
(2) No energy conversion would have taken place.
(3) Electrical current would never flow in the wires.
(4) The amount of energy in battery would remain unchanged.

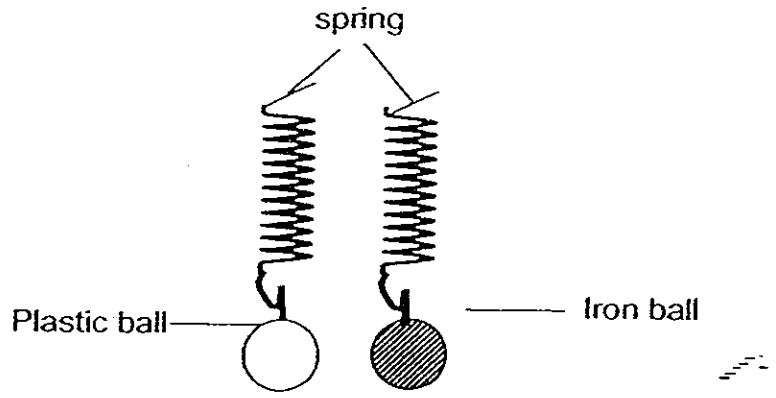
19. The diagram below shows 4 electrical circuits.



Key: ▨ : Conductor of electricity ☐ : Non-conductor of electricity

Which of the bulb(s) in the circuits above will light up?
(1) B only
(2) A and B only
(3) B and C only
(4) C and D only

20. In an experiment, Danny hung two balls of the same size as shown below on a suspended spring. He measured the length of the extended spring and then recorded the length of the spring in the table below.



	Length of extended spring (cm)
Plastic Ball	10 cm
Iron Ball	40 cm

Which one of the following causes the difference in length of the extended spring?

A: The mass of the balls
B: The weight of the balls
C: Volume of the ball

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

21. John carried out an investigation on four types of simple machines and recorded the following results.

Simple Machine	A	B	C	D
Load (N)	80	80	80	80
Effort needed (N)	60	40	80	70
Distance travelled by load (cm)	10	10	10	10
Distance travelled by effort (cm)	12	20	10	11

Which is likely to be a single fixed pulley?

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

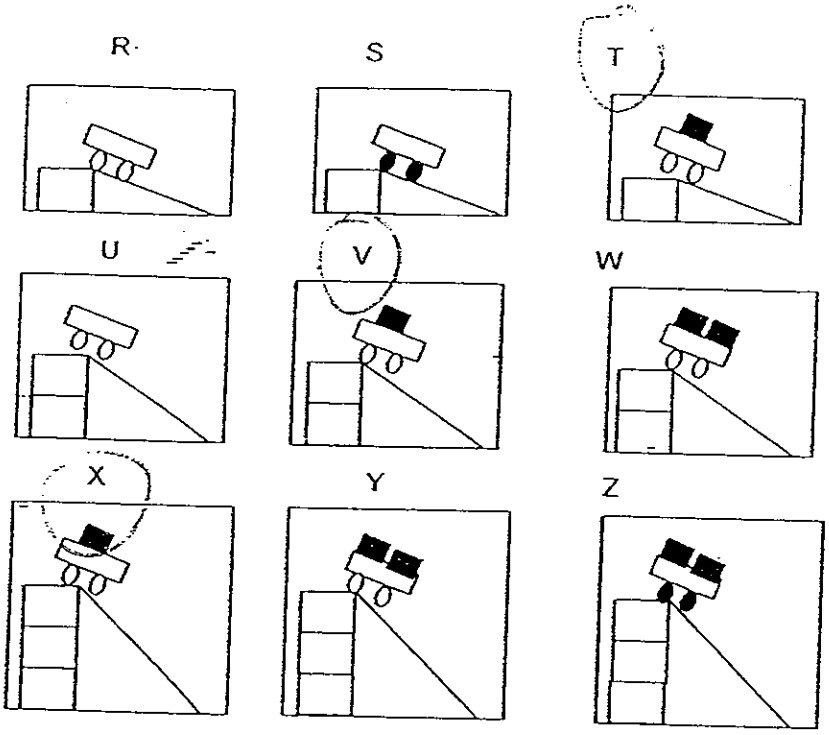
22. Ah Meng kicked a ball from point A. He kicked the same ball harder in a second attempt. He observed the ball until it stopped. Which of the following correctly describes what happened to the balls on both occasions?

A: The ball travelled faster in the second attempt.
B: The ball came to a stop earlier in the first attempt.
C: The balls covered the same distances before stopping during both attempts.
D: The balls slowed down before coming to a complete stop during both attempts.

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

Ahmad prepared different set-ups with different types of carts. Each cart carried different number of blocks. Each block had equal mass. For each set-up, he rolled the cart down the ramp.

Study the set-ups carefully to answer Q23 and Q24.



23. Ahmad wanted to find out if the mass of the cart affected the speed it travelled to the bottom of the ramp.

Which three set-ups should Ahmad use for his experiment?

(1) R,S and T
(2) U,V and W
(3) X,Y and Z
(4) R,W and X

24. Ahmad used set-ups T,V and X to test how the height of ramp affected the speed of the cart. The result table below shows an error in the data.

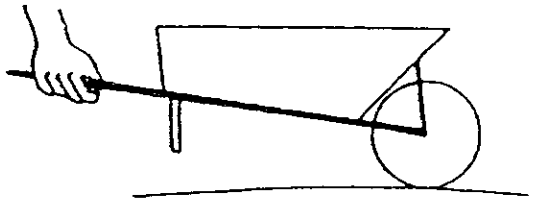
Cart	Speed (cm per second)
T	6
V	8
X	7

Which of the following are the possible explanations for his results?

A: He used more force to push Cart V than Cart T and X.
B: There was powder on the ramp for all 3 carts.
C: The wheels on some carts were not smooth.

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

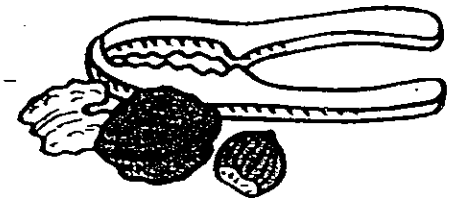
25. Tool X is a type of lever.



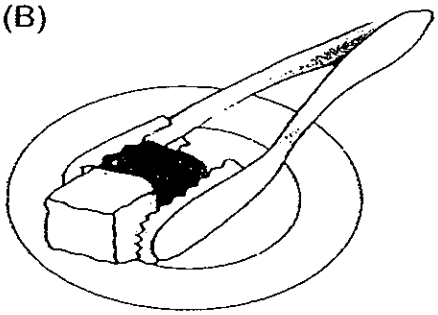
Tool X

Which of the following belong to the same group of lever as Tool X?

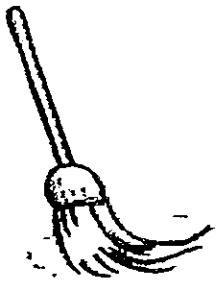
(A)



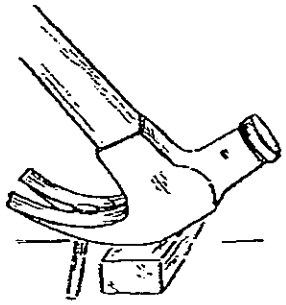
(B)



(C)

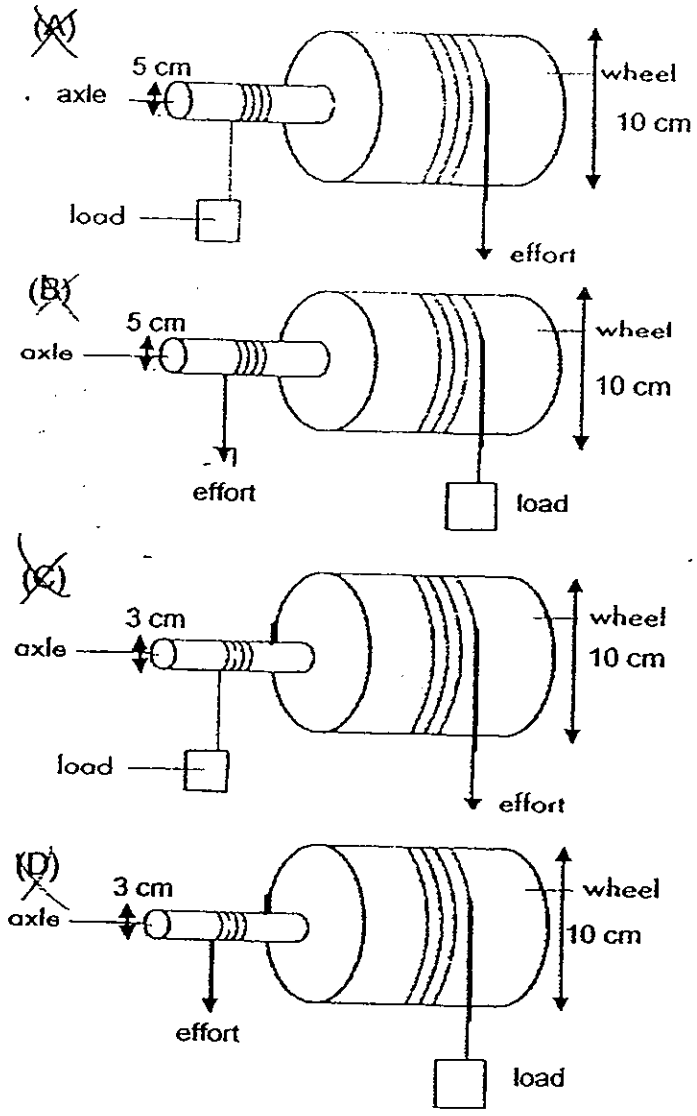


(D)



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

26. Each of the 4 different wheel and axle below is used to lift the same load.

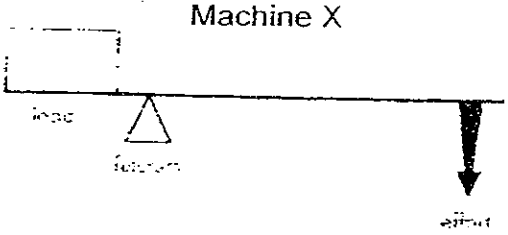


Which wheel and axle uses the least amount of effort?

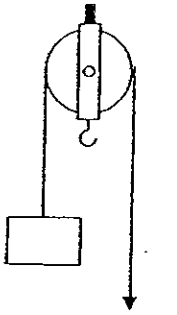
(1) A
(2) B
(3) C
(4) D

27. Which of the following statements about 2 simple machines below are correct?

Machine X



Machine Y



(A) Both machines change direction of force.
(B) In both machines, amount of effort needed is less than load.
(C) In both machines, the distance moved by effort is further than the distance moved by load.

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

28. Kai Wen had four different magnets, W ,X, Y and Z.
To compare the strength of the magnets, she brought each of the magnets near a pile of paper clips. The table below shows the number of paper clips attracted by the magnets from various distances.

Magnet	Distances between magnets and paper clips (cm)	Number of paper clips attracted
W	6	12
X	4	11
Y	3	13
Z	4	12

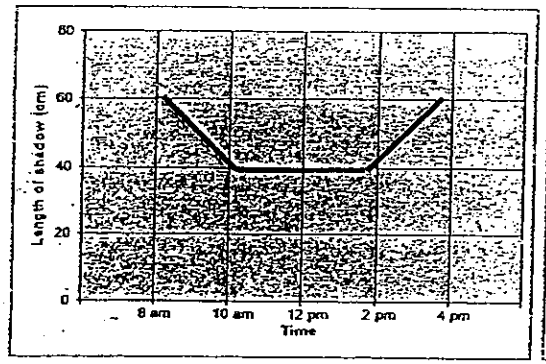
Based on the table above, which of the statements below is accurate?

(1) Magnet Y is the strongest magnet.
(2) Magnet X is weaker than Magnet Z.
(3) Magnet W is the weakest magnet.
(4) Magnet Z is stronger than Magnet W.

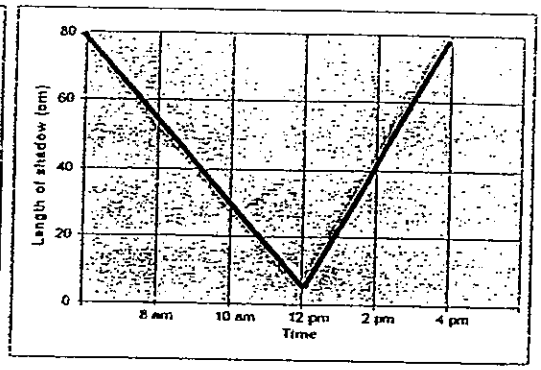
29. The graphs below show the length of the shadow of a stick on a sunny day.

Which of the following correctly shows the changes in the length of the shadow cast on that day?

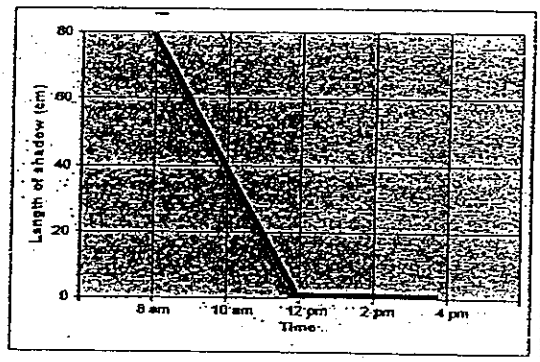
1)



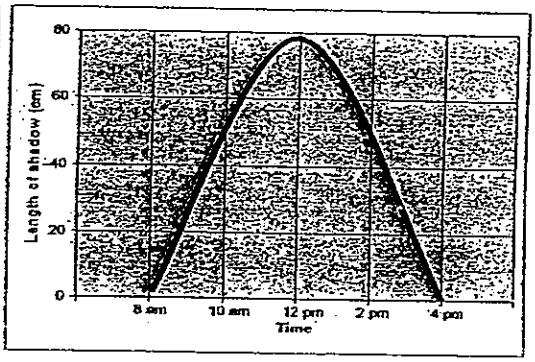
(2)



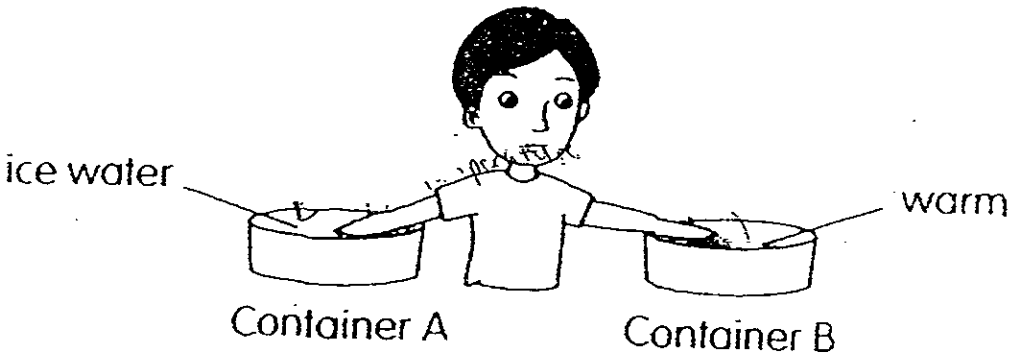
(3)



(4)



30. Jack dipped one hand into a container of iced water and the other into a container of warm water as shown below.



Which of the following statements is true?

(1) His hand lost heat to the water in Container A but gained heat from the water in Container B.
(2) His hand gained heat from the water in Container A but lost heat to the water in Container B.
(3) Heat is transferred from his hands to the water in both containers.
(4) Heat is transferred from the water in both containers to his hands.

Setters: Ms Lee Yoke Cheng
Mrs Ng Cecilia

HENRY PARK PRIMARY SCHOOL

2008 SEMESTRAL EXAMINATION 2

PRIMARY 5 SCIENCE

PART 2

Name: _____ ( )

Class: Primary 5_____

40

16 Questions
40 Marks

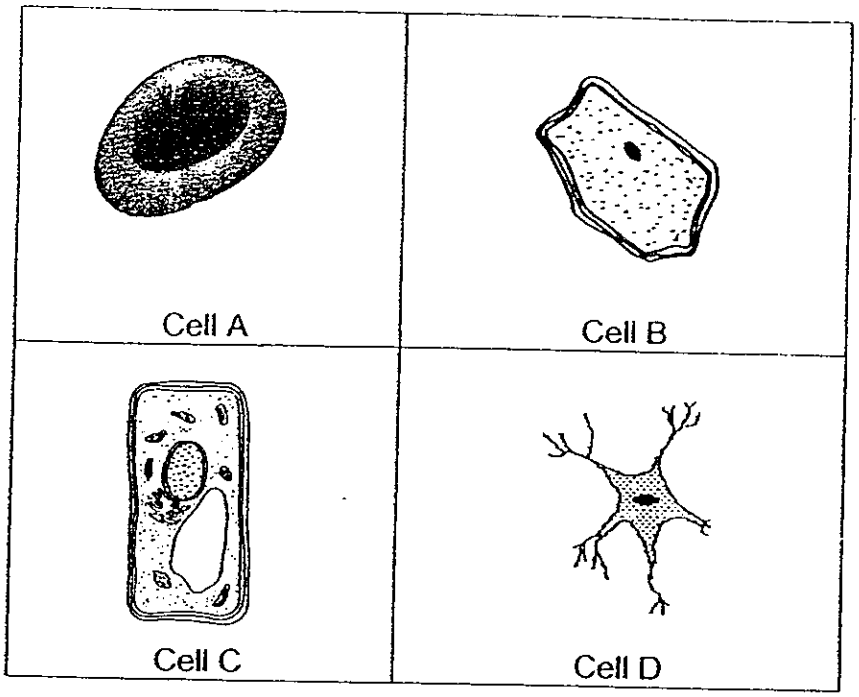
Total Time for Part 1 and 2: 1 h 45 min

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

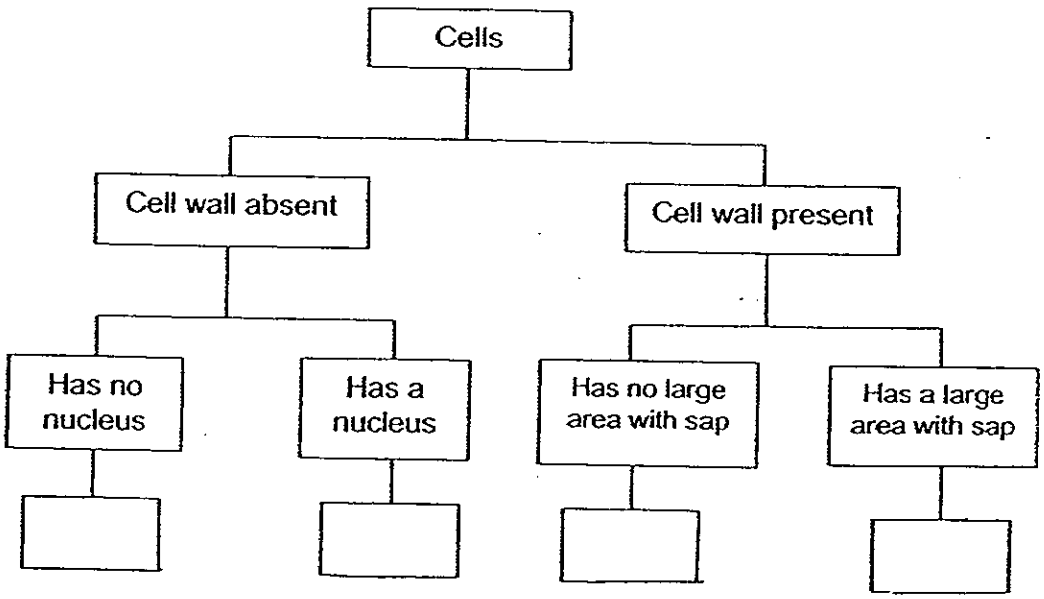
READ AND FOLLOW INSTRUCTIONS CAREFULLY.

PART 2 (40 marks)
Write your answers to questions 31 to 46 in the spaces given.

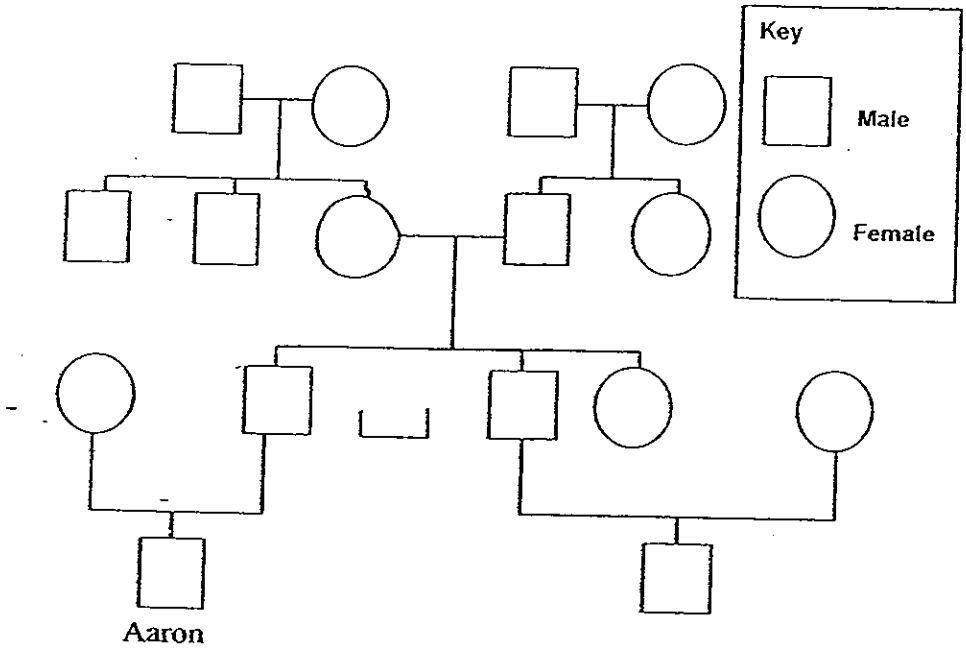
31. The diagram below shows 4 plant and animal cells.



Complete the classification chart below by putting the cells in the correct boxes. Write the letters A, B, C or D in the boxes provided. [2]



32. Study Aaron's family tree and answer the questions below.



(a) Identify Aaron's grandmother by shading in the family tree above. [1]

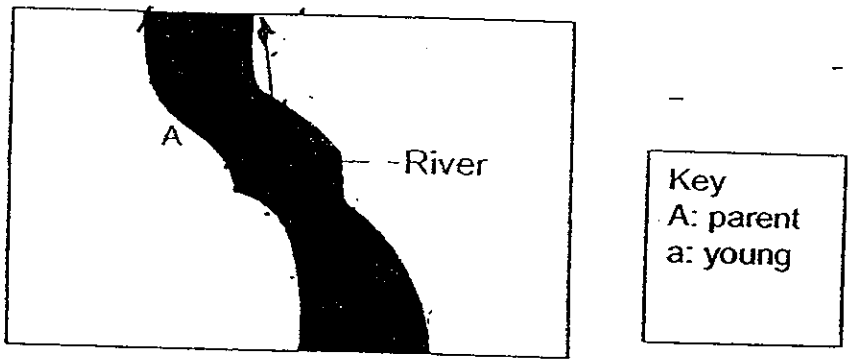
(b) How many cousin(s) does Aaron have? [1]

33. A pupil studied the characteristics of a given fruit A and recorded some observations:

"Fruit A is brightly coloured and has hairy skin texture. The flesh is juicy and fleshy and each fruit has a single, large seed."

a. Based on the characteristics described, how is Fruit A dispersed? Give a reason for your answer. [2]

b A tree bearing Fruit **A** was found on a piece land as shown below. On the same diagram, draw 6 other young plants from this parent plant on the same piece of land several years later. [1]



34. A pot of soil was left in Samuel's garden for a long time. No plant was found growing in it. Samuel scattered some rice grains onto the pot of soil to feed the birds that visited his garden. After some time, he was surprised to find a guava plant growing in the pot. Nobody had planted it. Explain how the guava plant could have got there. [2]

35. The following shows a table of comparison between various types of eggs by different animals.

	Amphibian	Fish	Bird	Mammal	Reptile
Size of eggs	Small	Medium	Large	Small	Large
Number of eggs	Medium	Large	Small	Small	Small

a. Which of the following group(s) of animals give(s) birth to live young? [1]

_____

b. Give a reason why fish and amphibians generally produce a large number of eggs. [1]

_____

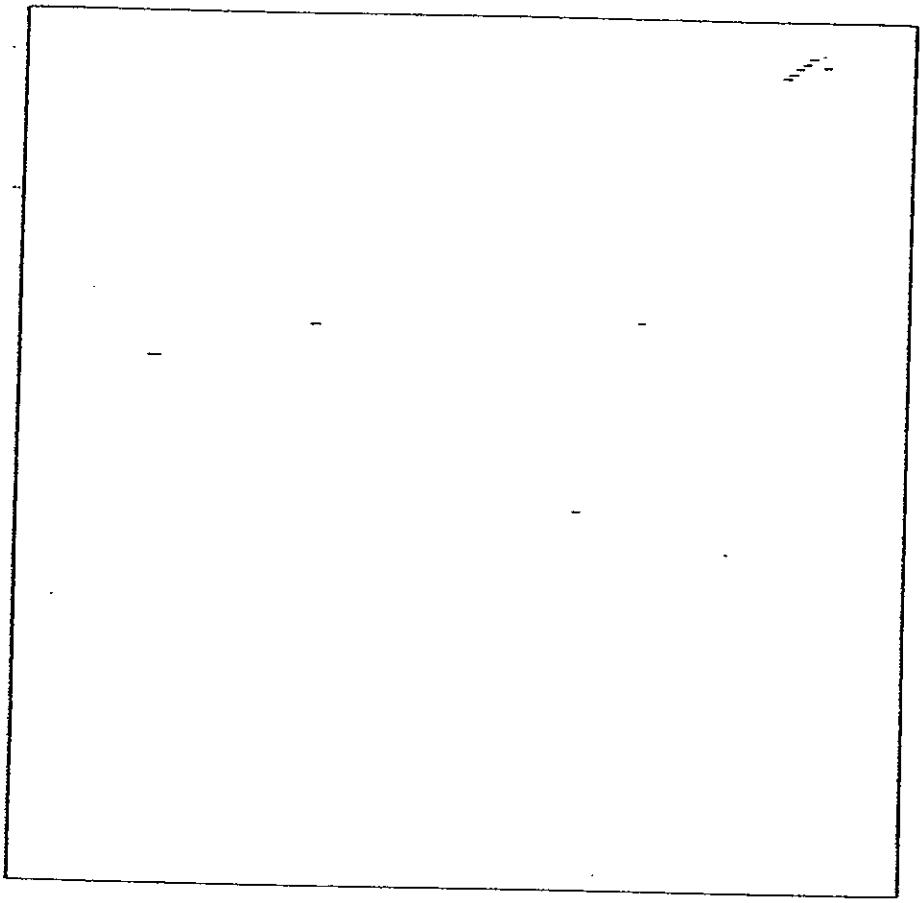
c. One of the functions of eggs is to provide nutrients for the growing embryo. Explain why the young developing mammal is able to grow despite the size of eggs being relatively small compared to other animal groups. [1]

_____

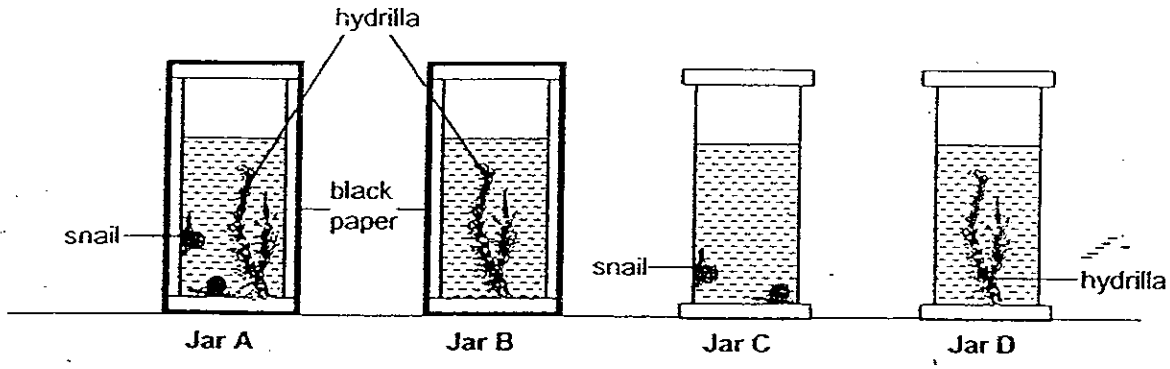
_____

36. Construct a food chain using as many organisms given in the box below. [2]

Fungi	Caterpillar	Plant	Rabbit
	Sparrow		Snake

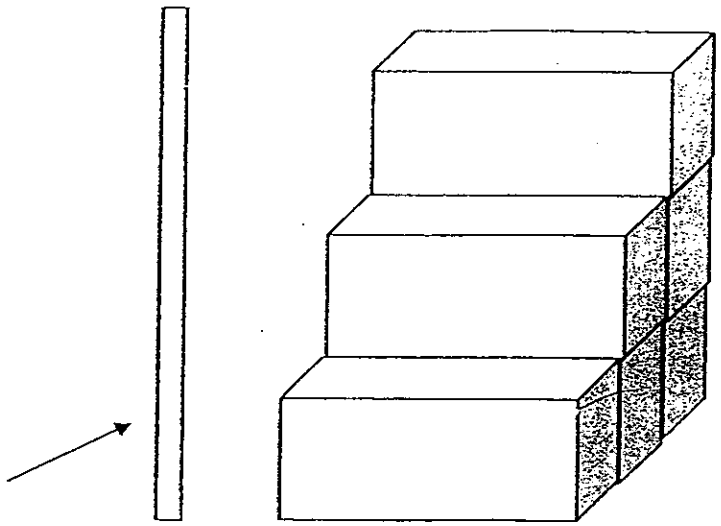


37. Jennifer did an experiment as shown in the diagram below. She used four identical gas jars and put water snails or hydrilla into each of them. Jars A and B were completely covered with black paper. The four jars were sealed and left to stand near a window for a week.



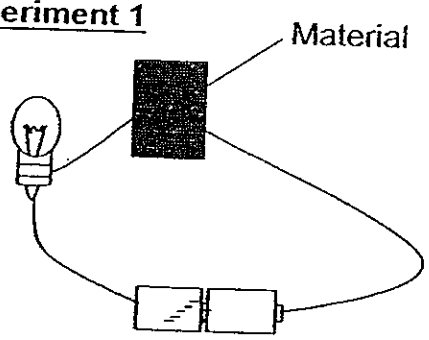
In which jar above will the organism(s) most likely survive after 2 weeks? [2]
Explain your answer.

38. A pole was placed in front of some stairs. Sunlight was shinning onto the pole as shown by the arrow. On the diagram below, draw the shadow that is cast on the steps. [2]



39. Faizal conducted two experiments. The aim of Experiment 1 was to find out how well different material conduct electricity. The brightness of bulb indicates how well the material can conduct electricity. He measured the brightness of bulb with a datalogger in *lux* units.

Experiment 1

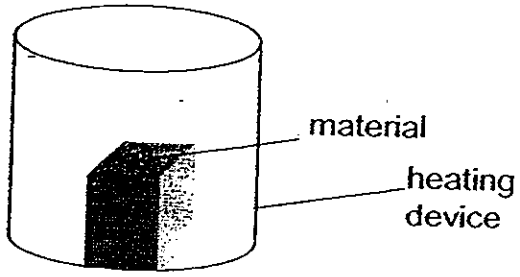


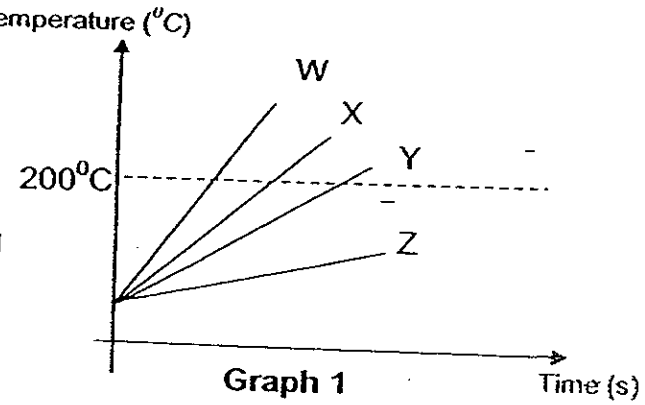
Material	Brightness of bulb (*lux*)
W	550
X	400
Y	360
Z	290

Table 1

After Experiment 1, Faizal conducted Experiment 2. He placed each Material W,X,Y and Z in a heating device. For each material, he measured its temperature over regular time intervals until it reached 200^{0}C. The results obtained were plotted in graph 1.

Experiment 2





Graph 1

a. Which material is the best conductor of electricity? [1]

_____

b. Which material is the best conductor of heat? [1]

_____

c. From the results of both experiments, what can Faizal conclude about the electrical conductivity and heat conductivity of the materials he tested. [1]

_____

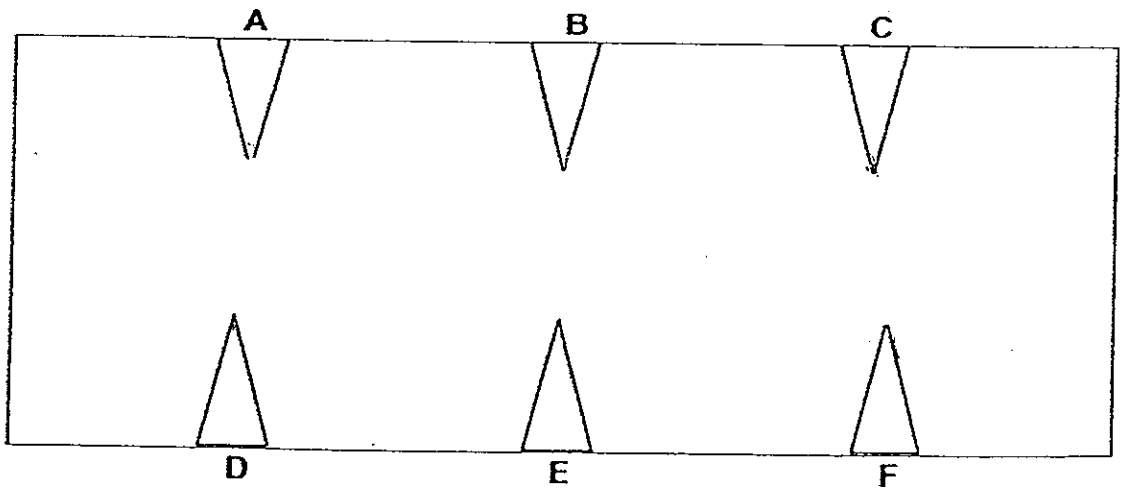
_____

40. Mary used a circuit tester as shown in Figure 3 to test a circuit card which has 6 paper clips attached to it.

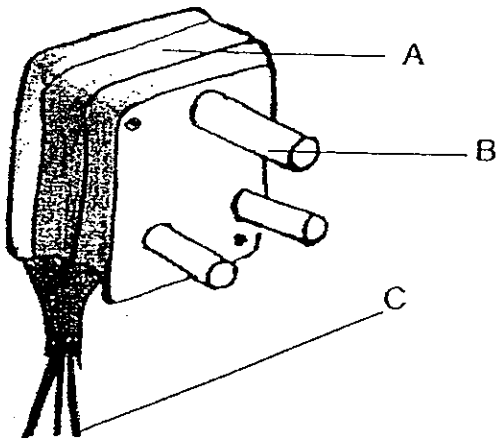
The result of the test is as follows:

Pairs of paper clips tested	Did the bulb light up?
A and B	Yes
B and D	Yes
E and F	No
B and E	No
C and F	Yes
B and F	No
A and D	Yes

Mary only used 3 wires to connect some paper clips. Draw on the diagram below to show how the wires are connected. [2]



41. Name the material that is used to make parts A, B, C and D in a three pin plug. [1]



a. Material A : _____

Material B : _____

Material C : _____

b. Peter felt a sensation in his wet fingers when he tried to insert the plug into a socket that is switched on. What causes the sensation of the finger? [1]

_____

c. Explain why Peter felt this way when he inserted the plug with his wet fingers?

[1]

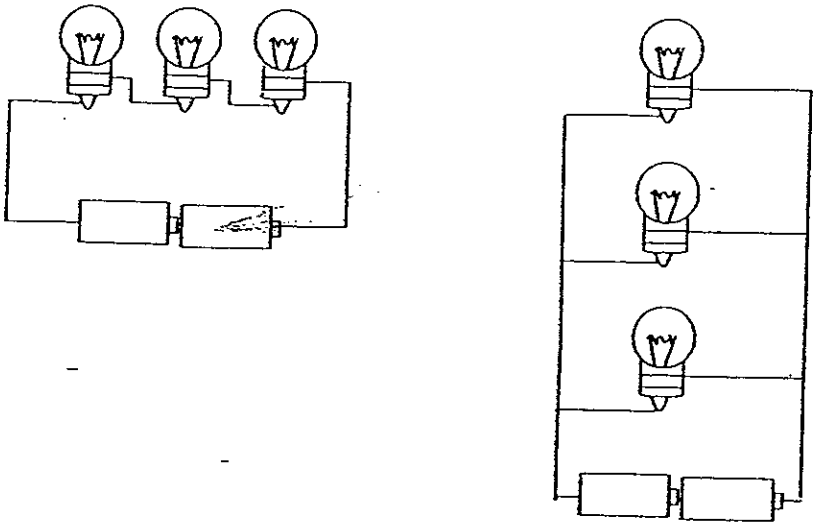
_____

_____

_____

_____

42. John conducted an experiment to find out if the arrangement of bulbs affects the duration of bulbs being lighted. The diagram below shows 2 circuits that he set up.

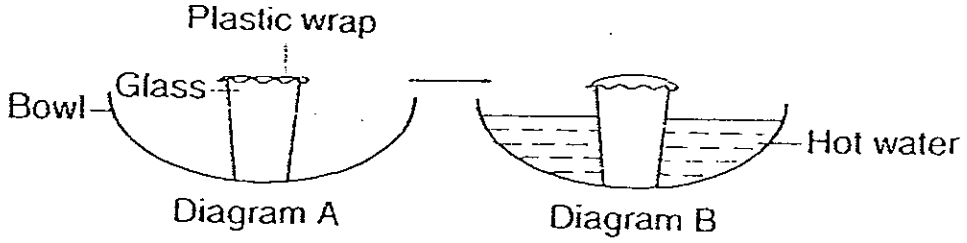


State the test variable and measured variable. [1]

Test Variable : _____

Measured Variable : _____

43. Jolie took out an empty glass which she had put in the refrigerator for an hour. She placed a plastic wrap over it and put it in a bowl as shown in Diagram A. She then poured some hot water into the bowl. Diagram B shows what happened after 5 minutes.



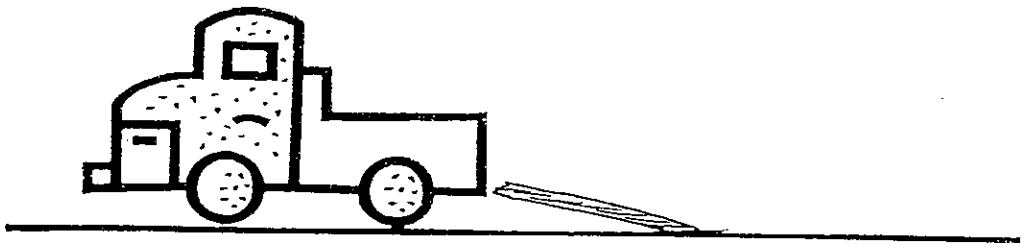
Explain what caused the plastic wrap to bulge as shown in Diagram B? [2]

_____

_____

44a. 3 men are needed to transport a piano up a truck using a plank as shown in the diagram below.

(i) In the same diagram, draw another plank that enables 2 men to transport the piano up the truck. [1]

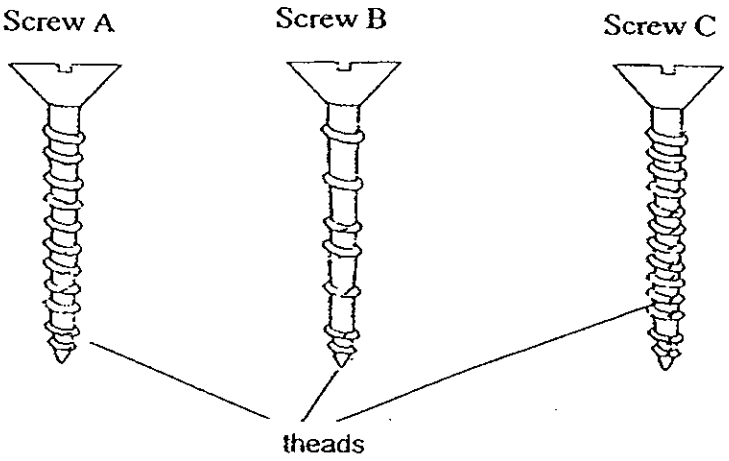


(ii) Explain how the new plank in (i) enables the 2 men to do the same job that previously needed 3 men to do? [1]

_____

_____

b. Mary has 3 screws with different number of threads.



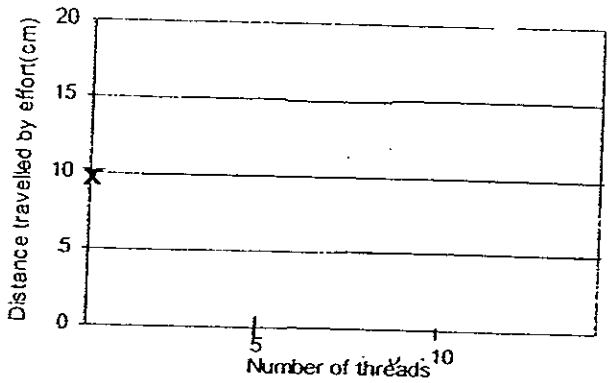
(i) Which screw should she use if she wants to use least effort to drive a screw into a plank? [1]

_____

(ii) State a disadvantage of your choice in (i) [1]

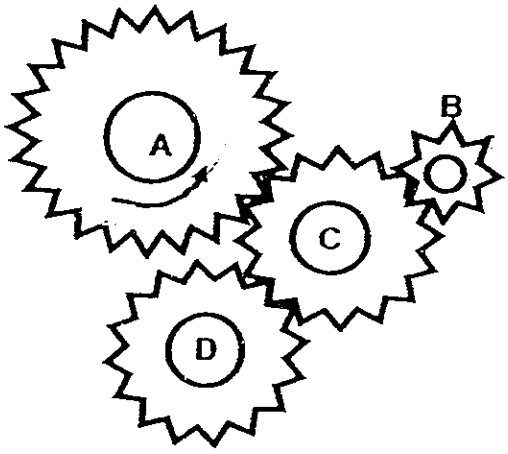
_____

(iii) Draw a line graph to show the relationship between the number of threads and the distance travelled by effort. The first point is indicated at Point X. [2]

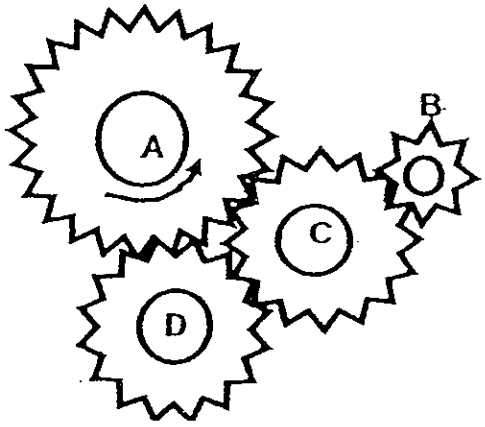


45. Four gears are interlocked as shown in the diagram below. Gear A moves in an anticlockwise direction.

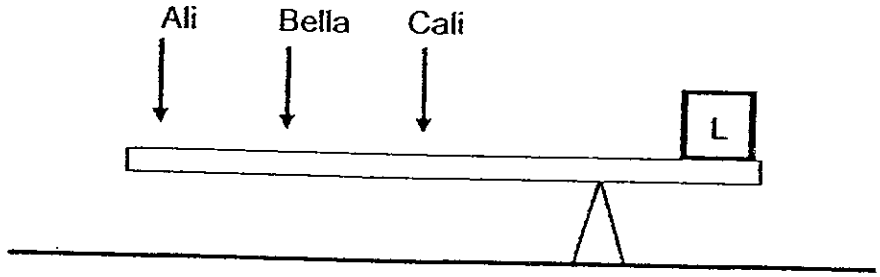
a. Draw an arrow in the diagram below to show the direction in which Gear B moves. [1]



b. If the gears are now arranged as shown below, what will happen if Gear A is made to turn in the direction of the arrow shown below? Explain your prediction. [2]



46. Ali, Bella and Cali used a lever to lift 3 different loads. Each child used the same amount of effort. The diagram below shows the position where each child lifted the load.



(i) Which child lifted the heaviest load? [1]

(ii) Explain your answer in (i)? [1]

End-of-Paper

Setters: Ms Lee Yoke Cheng
Mrs Ng Cecilia

ANSWER SHEET

EXAM PAPER 2008

SCHOOL : HENRY PARK PRIMARY SCHOOL
SUBJECT : PRIMARY 5 SCIENCE

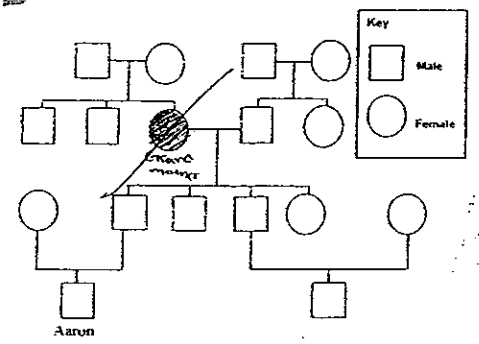
TERM : SA 2

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
2	4	3	2	2	1	4	3	4	3	2	1	3	2	2	3	3

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
1	3	1	3	3	2	2	4	1	1	2	2	3

31)A, D, B, C

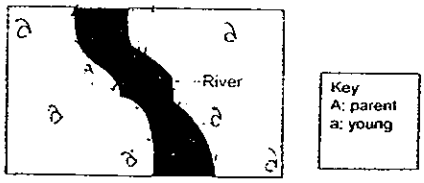
32)a)



b)Aaron has only 1 cousin.

33)a)The fruit is brightly coloured and is juicy and fleshy to attracted the animal.

33)b)



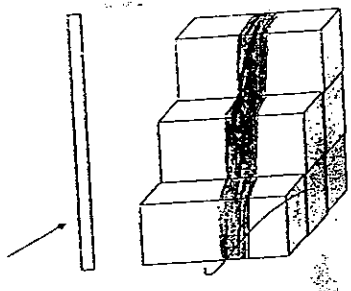
34)a)Birds that feed on grains have eaten a guava fruit and swallowed the seeds. The seeds were indigestible and were excreted on the soil. One seed germinated into a guava plant.

35)a)Mammal.
b)To increase the chance of festilisation.
c)The young can nutrients from mother.

36)Plant→caterpillar→sparrow→shake

37)Jar D only. The hydrilla in jar D can photosynthesis in the presence of light to give out oxygen for its respiration. At the same time carbon dioxide given out during respiration is taken in for photosynthesis.

38)



39)a)Material W.
b)Material W.
c)The better the electrical/ heat conductivity, the better the heat/electrical conductivity of the material.

40)A B C

D E F

41)a)A: plastic B: Metal C: Copper

b)The electric current from the wall socket.

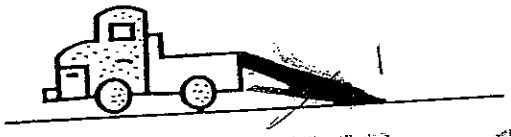
c)Water is a also conductor of electricity so when he plug in the socket, the electric current from the wire to his hand.

42)arrangement of bulbs.

duration of bulbs being lighted.

43)The expansion of air in the glass due to the hot water. The air takes up more space and hence bushes against the plastic wrap.

44)a)i)

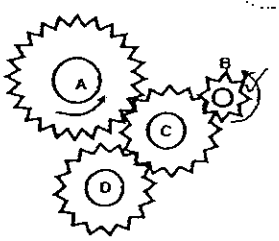


ii)The amount of effort decreased as the distance travelled by effort increased.

b)i)Screw C. ii)It will have to take a longer time.

iii)

45)a)



45)b)A and C are pushing D in opposite direction.

46)i)Ali.

ii)When the effort travels a longer distance less effort is needed so all the children used the same effort.