

CAT



**CATHOLIC HIGH SCHOOL
PRIMARY SIX
CONTINUAL ASSESSMENT 1, 2005**

**SCIENCE
EM 1 / EM 2**

Name: _____ ()

Class : Primary 6 _____

Date : 3 Mar 2005

BOOKLET A

30 Questions
60 Marks

Total Time for Booklets A & B : 1 hour 45 minutes

Instructions to Candidates

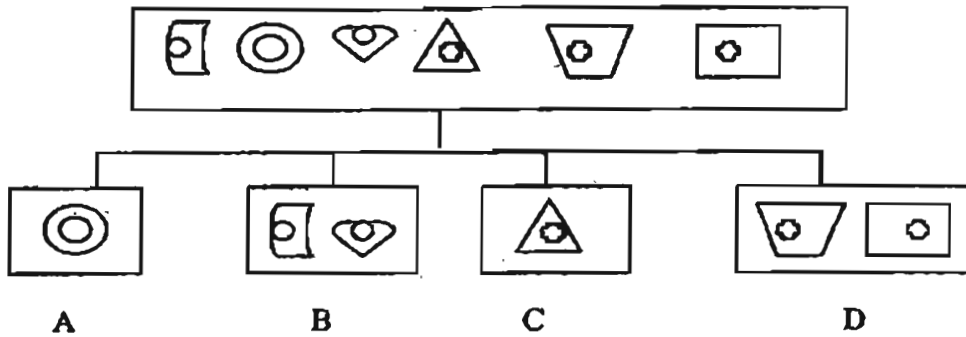
Do not open this booklet until you are told to do so.
Follow all instructions carefully.
Answer all questions.

PI

Section A: Multiple Choice Questions (60 marks)

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

1. The diagram below shows a classification of some organisms.

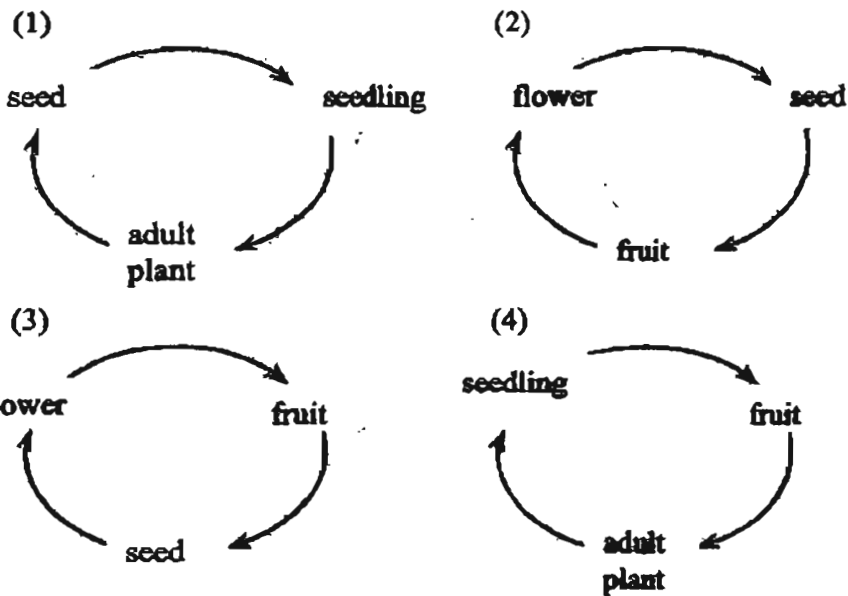


in which group does the organism below belong to?



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

2. Which one of the following diagrams below shows the life cycle of a plant?



3. Which one of the following shows the path taken by the food we eat?

- (1) mouth → stomach → large intestine → small intestine → anus
- (2) mouth → small intestine → stomach → large intestine → anus
- (3) mouth → gullet → stomach → large intestine → small intestine → anus
- (4) mouth → gullet → stomach → small intestine → large intestine → anus

4. Which of the following actions involve the use of your joints?

- A Smelling your food
B Snapping your fingers
C Swallowing your food
D Clapping of your hands

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

5. What are some characteristics of exhaled air?

- A It contains more dust particles than the surrounding air.
B It contains more carbon dioxide than inhaled air.
C It contains less oxygen than inhaled air.
D It is warmer than the surrounding air.

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

6. Ahmad breathes out onto a metal spoon and observed that there were tiny droplets formed on it. Which one of the following is the correct reason to explain his observation?

- (1) He warms up the spoon with his breath, so the water vapour from the air condenses on it.
(2) There is water vapour in Ahmad's breath, so as he breathes out, it condenses on the cool surface of the metal spoon.
(3) There is water vapour in Ahmad's breath, so as he breathes out, it condenses on the warm surface of the metal spoon.
(4) The metal spoon being a good conductor of heat, conducts the heat from Ahmad quickly, allowing the water vapour from the air to condense on it.

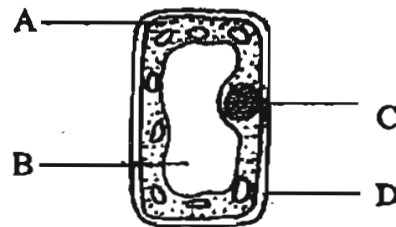
7. The diagram below represents part of the circulatory system. The arrows represent the two main blood vessels, X and Y, that send blood towards and away from the small intestines.



Select the correct comparison between the blood drawn from X and Y.

| | Blood drawn from X | Blood drawn from Y |
|-----|---------------------------------------|---------------------------------------|
| (1) | It has more sugar. | It has less sugar. |
| (2) | It does not have any sugar. | It has sugar. |
| (3) | It has less dissolved oxygen. | It has more dissolved oxygen. |
| (4) | It has less dissolved carbon dioxide. | It has more dissolved carbon dioxide. |

8. The diagram below shows a plant cell.



Which structure in the cell contains information that can be passed on to the young?

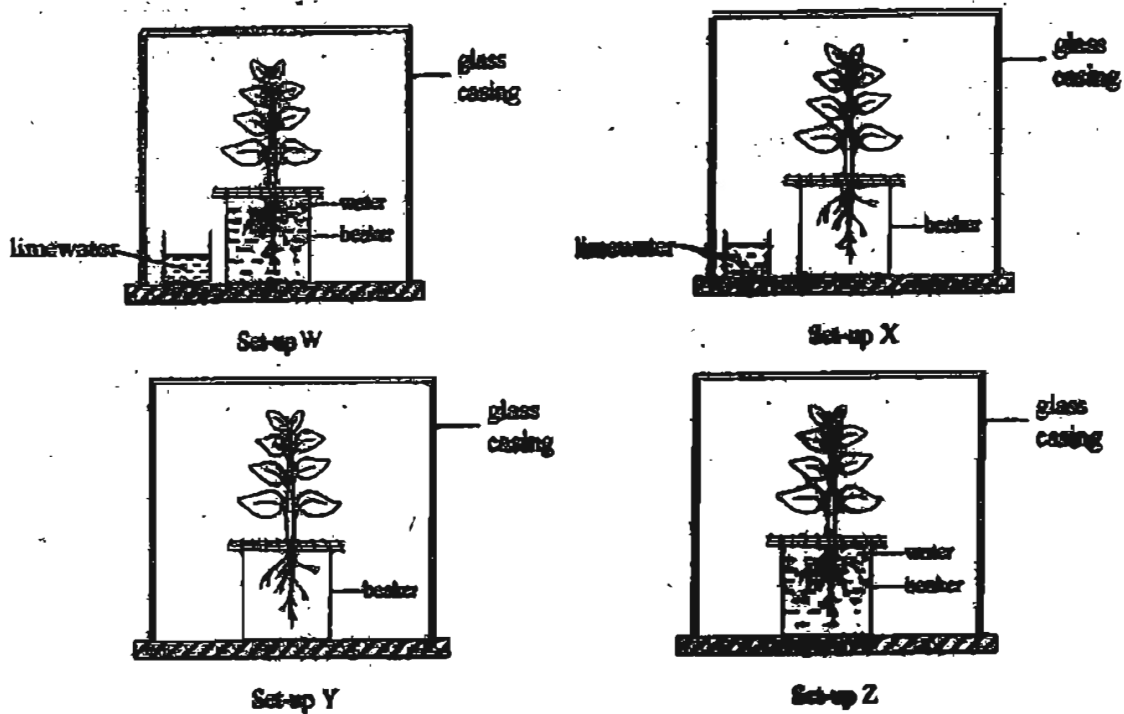
- (1) A
 (2) B
 (3) C
 (4) D
9. An animal X had a mass of 2 g when it was 1 week old. It had a mass of 27g when it was 4 weeks old. Which of the following would have contributed to the increase in mass?
- A Cell division
 B Cell death
 C Cell growth
- (1) A only
 (2) C only
 (3) A and C only
 (4) B and C only

10. Which of the following substances found in the blood are also necessary for photosynthesis to take place?

- A sugar
- B water
- C oxygen
- D carbon dioxide

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

11. Wei Min wanted to find out the factors that would affect photosynthesis. He prepared 4 set-ups using identical plants as shown below.



In which one of his set-ups, W, X, Y or Z would he expect the plant to photosynthesize?

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

12. Which of these statement(s) is/are true of both the Ladder Fern and the Pine Tree?

- A They reproduce from spores.
- B They are non-flowering plants.
- C They need sunlight to make food.

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

13. The characteristics of 4 organisms were recorded in a table as shown below.

| Animal | Number of legs | | | | Feelers | Wings |
|--------|----------------|---|---|---|---------|-------|
| | 2 | 4 | 6 | 8 | | |
| A | ✓ | | | | | ✓ |
| B | | ✓ | | | | |
| C | | | ✓ | | ✓ | ✓ |
| D | | | | ✓ | | |

Which animal is most likely to be an insect?

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

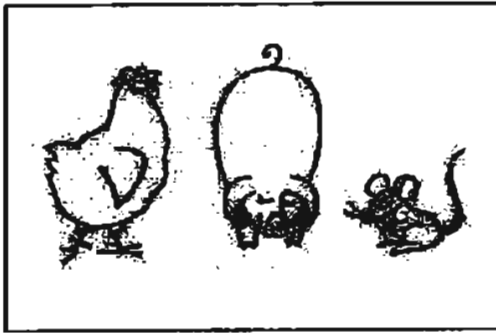
14. The table below shows how some plants have been classified.

| A | B |
|--------|----------|
| Croton | Balsam |
| Coleus | Hibiscus |

Which of the following pairs of headings is correct?

| | A | B |
|-----|----------------------------|-------------------------|
| (1) | Have colourful leaves | Have green leaves |
| (2) | Cannot make their own food | Can make their own food |
| (3) | Have strong stem | Have weak stem |
| (4) | Are non poisonous | Are poisonous |

15. Look at the pictures below carefully.



Group Y

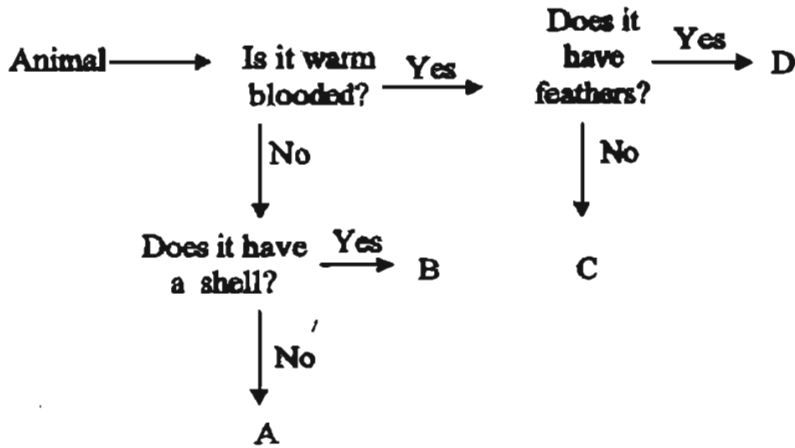


Group Z

The animals in Groups Y and Z are similar in that they have _____.

- (1) legs
- (2) feelers
- (3) 3 body parts
- (4) one pair of wings

16. Study the flowchart below.



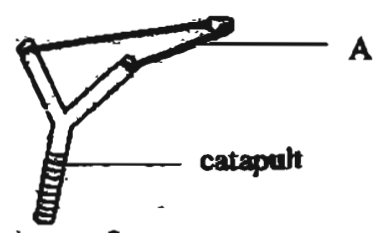
What could Animals A, B, C or D be?

| | A | B | C | D |
|-----|-----------|----------|----------|---------|
| (1) | crocodile | prawn | rat | cat |
| (2) | cockroach | ant | cow | eagle |
| (3) | snake | mosquito | goldfish | crow |
| (4) | lizard | turtle | bat | penguin |

17. The characteristic or property that we use for classifying things depends on the _____ of the classification.

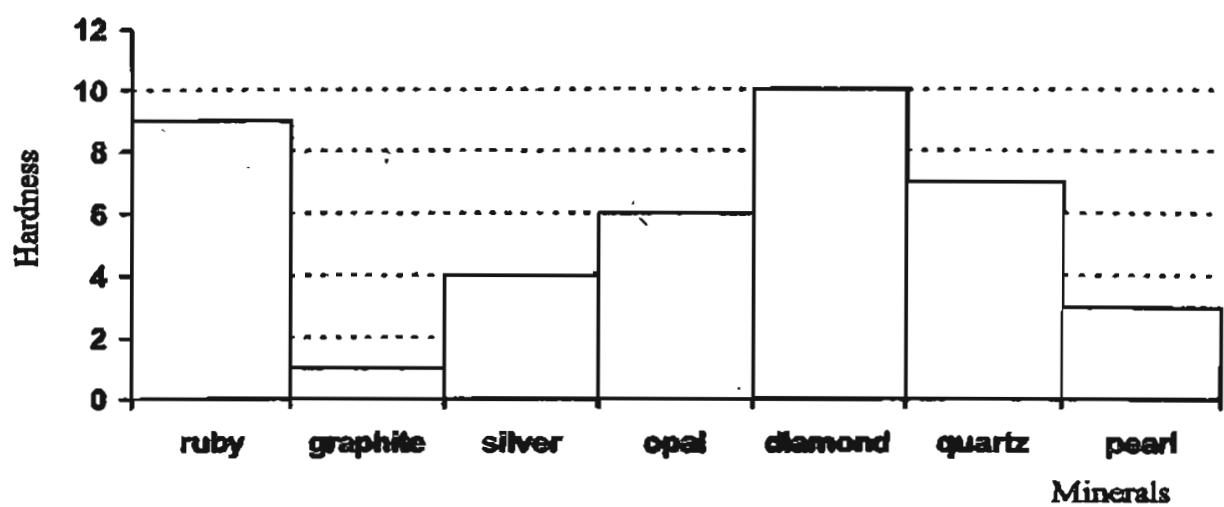
- (1) purpose
- (2) grouping
- (3) diversity
- (4) materials

18. Rubber is used to make Part A of the catapult shown below. What property of rubber makes it suitable to make Part A?



- (1) Rubber is waterproof.
- (2) Rubber is non-magnetic.
- (3) Rubber is highly flexible.
- (4) Rubber is a good insulator of heat.

19. The hardness of a mineral is measured by how easy it is scratched by another mineral. The hardness of each material is shown below on a scale from 1 to 10, with 10 being the hardest.



Which one of the following correctly orders the minerals in the correct order from the hardest to the softest?

- (1) ruby, quartz, opal
- (2) pearl, opal, silver
- (3) graphite, pearl, silver
- (4) ruby, quartz, diamond



20. The table below shows how some objects are classified.

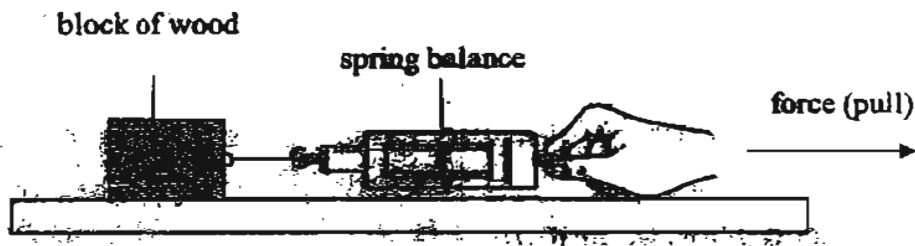
| Group X | Group Y |
|-------------------------------|------------------------------|
| Styrofoam cup Vacuum flask | Baking tray Bulb filament |

What is the difference between the materials used to make the 2 groups of objects?

| | Group X | Group Y |
|-----|--------------------------------|--------------------------------|
| (1) | Magnetic materials | Non-magnetic materials |
| (2) | Transparent materials | Opaque materials |
| (3) | Insulators of heat | Good conductors of heat |
| (4) | Good conductors of electricity | Poor insulators of electricity |

Read the information provided below and use it to answer questions 21 and 22.

A block of wood was pulled across different surfaces as shown below. The force needed to pull the block across each surface was measured and recorded.



The results are shown in the table below.

| Surface tested | Force needed to move the block in Newtons (N) |
|----------------|---|
| Sandpaper | 21 |
| Grass | ? |
| Concrete | 16 |

The following observations were also made.

It was harder to move the block across grass than across concrete.
It was easier to move the block across grass than across sandpaper.

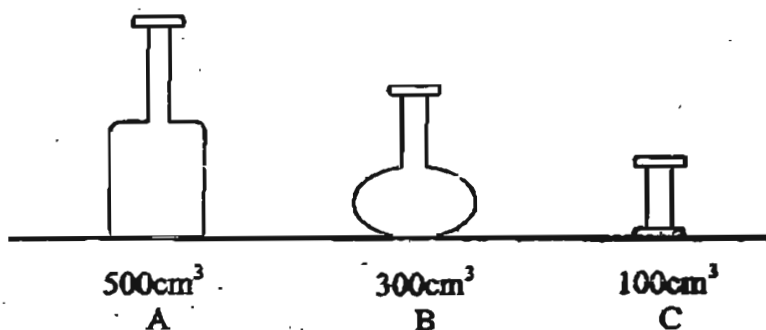
21. How much force would have been needed to move the block across grass?

- (1) 22 N
- (2) 18 N
- (3) 15 N
- (4) 13 N

22. What was the aim of the experiment?

- (1) To show that the rougher the surface, the more force is needed.
- (2) To show that the force needed is not dependent on the surface.
- ✓(3) To find out which surface needs the most force to move the block.
- (4) To find out whether the block of wood can move across different surfaces.

23. Sally pumped 300cm^3 of air into each of the containers A, B and C below.



What was the volume of air in each container after she had pumped in the air?

| | A | B | C |
|------|------------------|------------------|------------------|
| (1) | 800cm^3 | 600cm^3 | 400cm^3 |
| (2) | 300cm^3 | 300cm^3 | 300cm^3 |
| ✓(3) | 500cm^3 | 300cm^3 | 100cm^3 |
| (4) | 500cm^3 | 300cm^3 | 300cm^3 |

24. The table below shows some properties of matter.

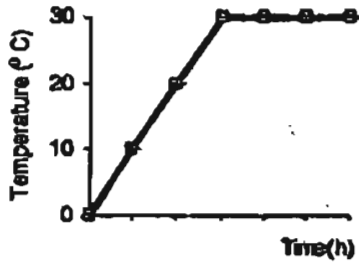
| | Has mass | Has a definite volume | Has a definite shape |
|---|----------|-----------------------|----------------------|
| A | ✓ | | |
| B | ✓ | ✓ | |
| C | ✓ | ✓ | ✓ |

Which state of matter does each of the letters A, B and C represent?

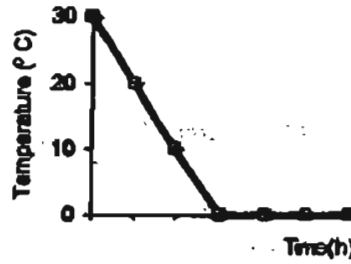
| | A | B | C |
|-----|--------|--------|-------|
| (1) | Solid | Liquid | Gas |
| (2) | Liquid | Solid | Gas |
| (3) | Liquid | Gas | Solid |
| (4) | Gas | Liquid | Solid |

25. A glass of water at room temperature was put into a freezer for 6 hours. Which one of the following graphs best represents the change in the temperature of the water?

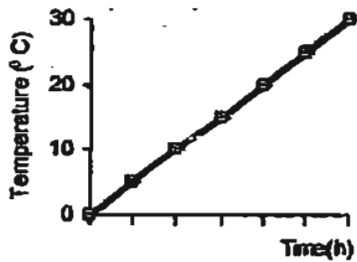
(1)



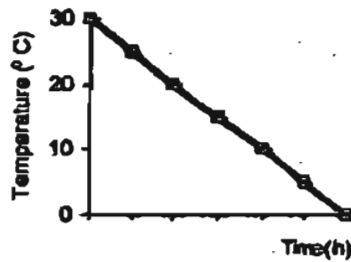
(2)



(3)



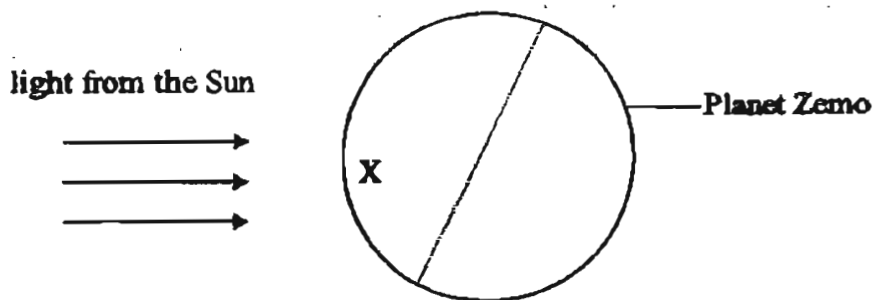
(4)



26. What causes us to experience day and night?

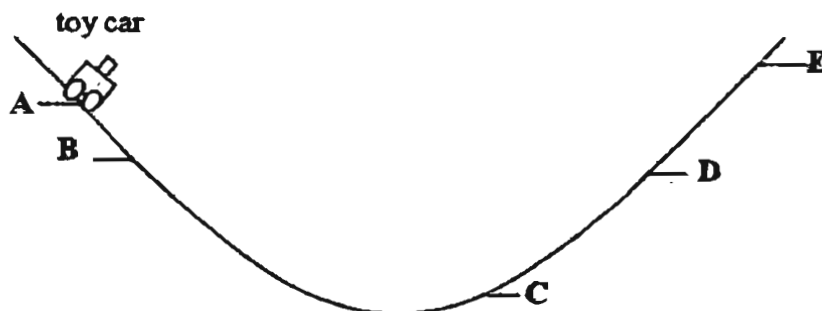
- (1) The movement of the Sun across the sky.
- (2) The rotation of the Earth about its own axis.
- (3) The revolution of the Earth around the Sun.
- (4) The movement of the Moon across the sky.

27. The Earth rotates anti-clockwise about its own axis. Planet Zemo rotates clockwise.



How would an Organism X on Planet Zemo see the Sun?

- (1) It would see the Sun rise and set in the west.
 - (2) It would see the Sun rise and set in the east.
 - (3) It would see the Sun rise in the east and set in the west.
 - (4) It would see the Sun rise in the west and set in the east.
28. The diagram below shows a toy car on a slope.



Rick releases it at Point A such that it reaches the highest point E on the other side of the slope. At which point would the toy car have the least amount of kinetic energy?

- (1) Point E
- (2) Point D
- (3) Point C
- (4) Point B

29. The diagrams below show some activities carried out by some individuals.



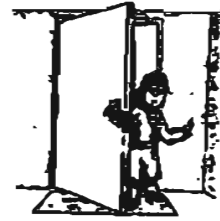
A



B



C



D

Which of the individuals experience a change in gravitational potential energy as the activities are being performed?

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

30. The diagram shows a common telephone.



Which one of the following shows the correct energy conversion from the moment the telephone rings?

- (1) Electrical Energy \longrightarrow Kinetic Energy and Sound energy
- (2) Electrical Energy \longrightarrow Light Energy \longrightarrow Heat Energy
- (3) Light Energy \longrightarrow Electrical Energy and Kinetic energy
- (4) Sound Energy \longrightarrow Kinetic Energy \longrightarrow Heat Energy



**CATHOLIC HIGH SCHOOL
PRIMARY SIX
CONTINUAL ASSESSMENT 1, 2005**

**SCIENCE
EM 1 / EM 2**

Name: _____ ()

Class : Primary 6 _____

Date : 3 Mar 2005

BOOKLET B

16 Questions
40 Marks

Total Time for Booklets A & B : 1 hour 45 minutes

Instructions to Candidates

Follow all instructions carefully.
Answer all questions.

| Score | |
|-----------|-----|
| Section A | 60 |
| Section B | 40 |
| Total | 100 |

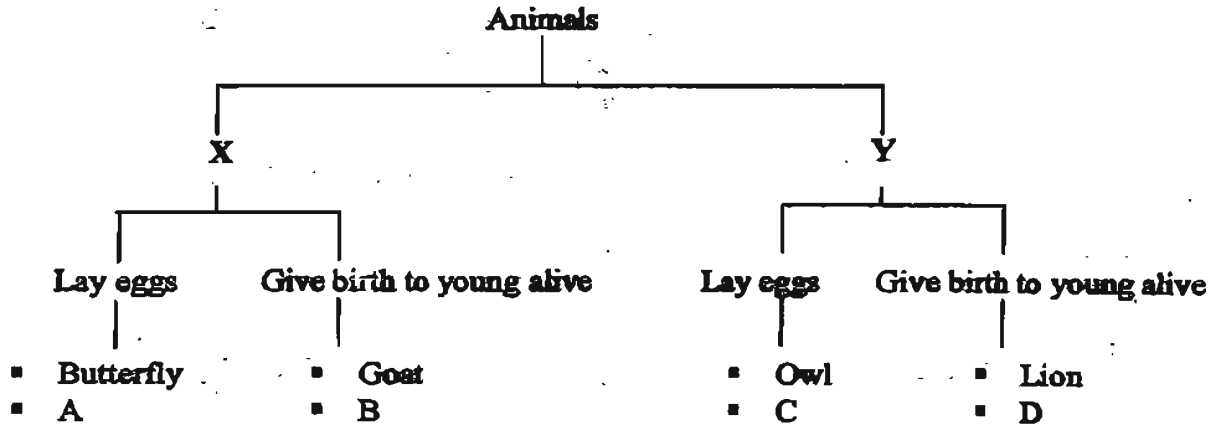
Parent's Signature: _____

Date: _____

Section B: Open-Ended Questions (40 marks)

Read the following questions carefully and write your answers in the space provided. The maximum marks that can be awarded is shown at the end of each question or part question.

31. The classification table below shows the characteristics of some animals.



a) Give suitable headings for X and Y. [1m]

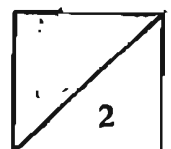
X: _____

Y: _____

b) Based on the classification table above, write the letters A, B, C or D to represent 'Crocodile' and 'Snail'. [1m]

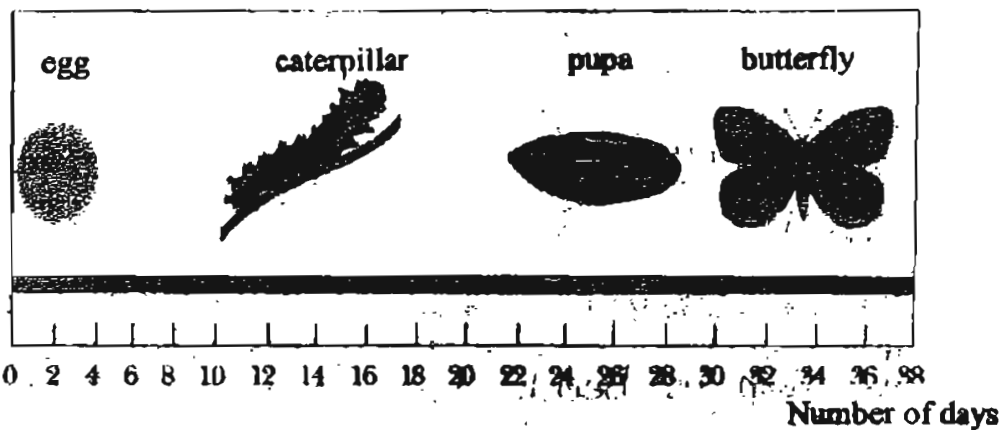
i) Crocodile: _____

ii) Snail: _____

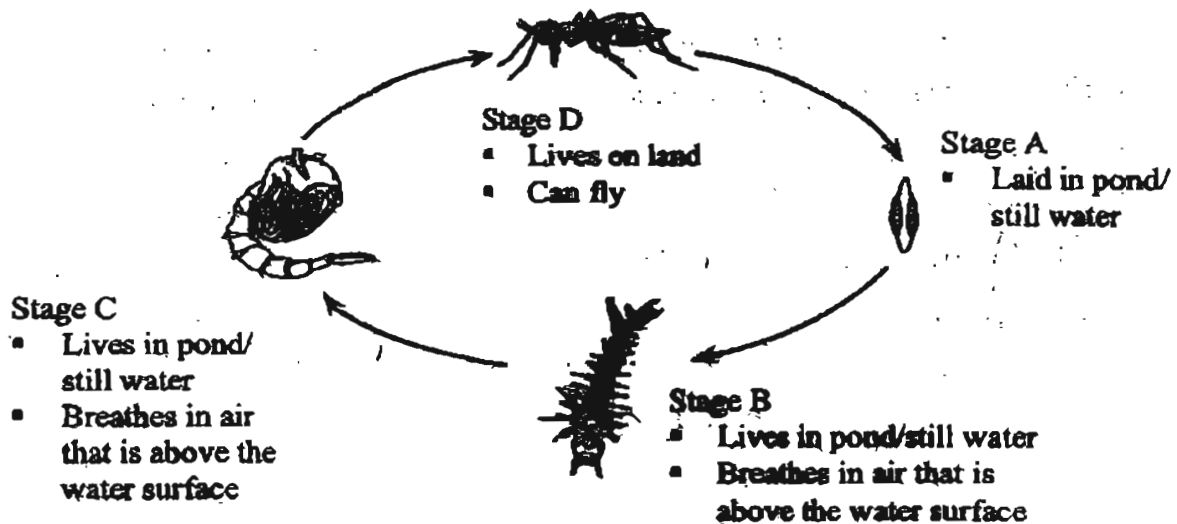


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32. The following diagram shows the length of time taken for the development of the 4 stages of the butterfly.

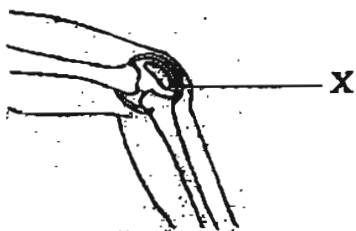


- a) The shortest stage in the life of this butterfly is the _____ stage. [1m]
- b) There are _____ days in the caterpillar stage. [1m]
33. Mosquitoes are harmful to humans because they can spread diseases. Study the life cycle of the mosquito shown below.



- a) Name a way we can get rid of mosquitoes at Stage B and C. [1m]
-
- b) How can we prevent mosquitoes from breeding? [1m]
-

34. Name the joint labelled X in the picture below.



a) X: _____ [1m]

b) What is the function of joints in our body? [1m]

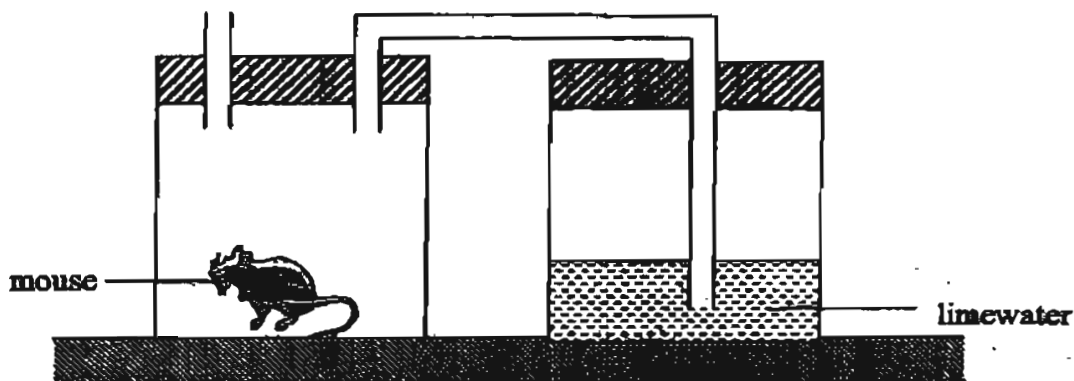
35. Fill in the blanks with the correct answers. Use only one word for each blank. [2m]

In the human circulatory system, the heart acts as a _____ sending blood to all parts of the body, supplying all its needs. The lungs, on the other hand, behaves like a filter, purifying the deoxygenated blood which flows into it.

Plants too have a transportation system. The tiny tubes found in plants perform a similar function as that of the blood vessels. There are many differences between them. One of the main differences is that in plants, water and food are transported via different tubes. The tube which transports food is known as _____ while the one used for water is called _____. Unlike humans, plants do not breathe with lungs. However, they have tiny openings found mostly on the underside of leaves that are known as _____, where air moves in and out of the plants.



36. Jurami wanted to investigate how the physical activities of an organism can affect the rate of its respiration. He set up an experiment as shown below.



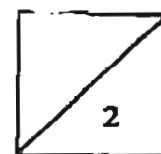
He monitored the rate at which the limewater changed when the mouse was performing different activities. After each reading was taken, he changed a fresh beaker of limewater. He also removed the stopper of the beaker containing the mouse to ensure that it received a fresh supply of air. The experiment was carried out in half a day to ensure that the mouse was not unduly stressed.

- a) The table below shows the activities the mouse was performing when the readings were being taken. Number the activities according to how fast the limewater had changed in the Rank column; 1 for the fastest and 3 for the slowest. [1m]

| Activities performed by the mouse | Rank |
|--------------------------------------|------|
| • Sleeping | |
| • Running on a wheel for 15 minutes. | |
| • Sniffing around the beaker slowly. | |

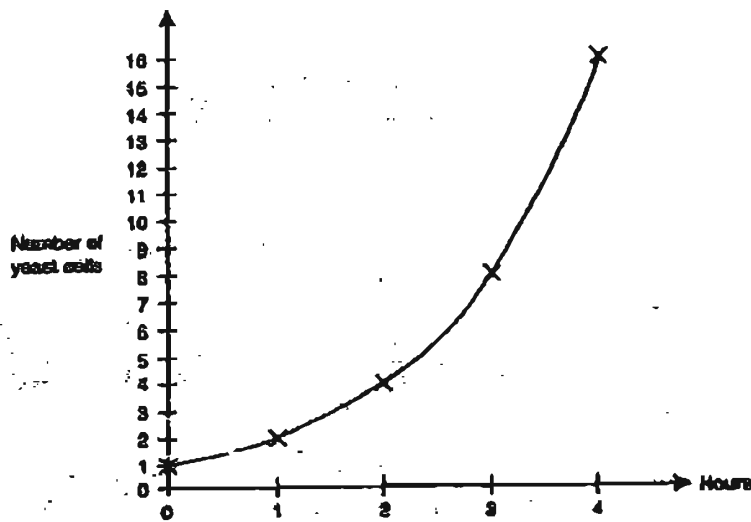
- b) Why was limewater used in this experiment? [½m]

- c) What kind of 'change' would Jurami expect to observe in the limewater? [½m]

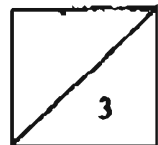


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37. 1 yeast cell was placed in some nutrient solution. The number of yeast cells was counted under a microscope at the end of each hour. The results were used to plot a graph as shown below.



- a) Based on the graph, what was the number of yeast cells at the end of the:
- 1st hour? _____ yeast cells
 - 6th hour? _____ yeast cells [1m]
- b) What do you think is the aim of this experiment? [1m]
-
- c) After the 1st hour, the yeast cell was placed in a refrigerator at a temperature of 5°C. At the end of the 4th hour of the experiment, what will happen to the number of yeast cells? [1m]
-
-



38. The table below shows the characteristics of 3 organisms.

[3m]

| Organism | Able to move | Fixed in a position | Able to make its own food | Depend on other organisms for food |
|----------|--------------|---------------------|---------------------------|------------------------------------|
| A | | | | |
| B | | | | |
| C | | | | |

Using the information given in the table above, complete the table below by filling a tick (✓) in the correct box after each statement.

| | True | False | Not Possible to tell |
|---|------|-------|----------------------|
| a) Organism A has legs. | | | |
| b) Organism B contains chlorophyll. | | | |
| c) Organism C has flowers and bears fruits. | | | |
| d) Organism A is an omnivore. | | | |
| e) Organism B is a fungi. | | | |
| f) Organism C needs water to survive. | | | |

39. Siti, Ai Ling and Kumar were looking at some sea anemone in the school aquarium. They made the following statements.

Siti: Look at the sea anemone. It has colourful flowers and stems, so it is a plant.

Ai Ling: It is a plant because it does not have body parts like an animal.

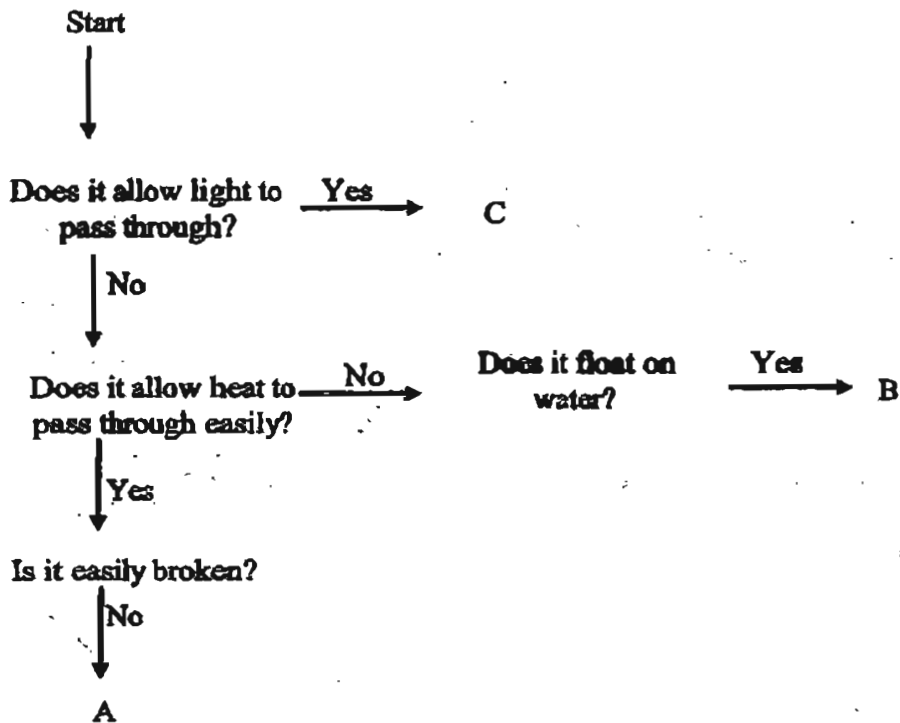
Kumar: The sea anemone feeds on passing animals with their stinging tentacles. I think it is an animal.

a) Which child's observation was correct? [1m]

b) What are the 3 main characteristics to consider when differentiating a plant from an animal? [1m]

c) How would you differentiate between an animal and a fungus? [1m]

40. Study the flow chart below and fill in the blanks with the most suitable answer.

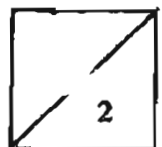


a) Give an example of the material that A and B could be? [1m]

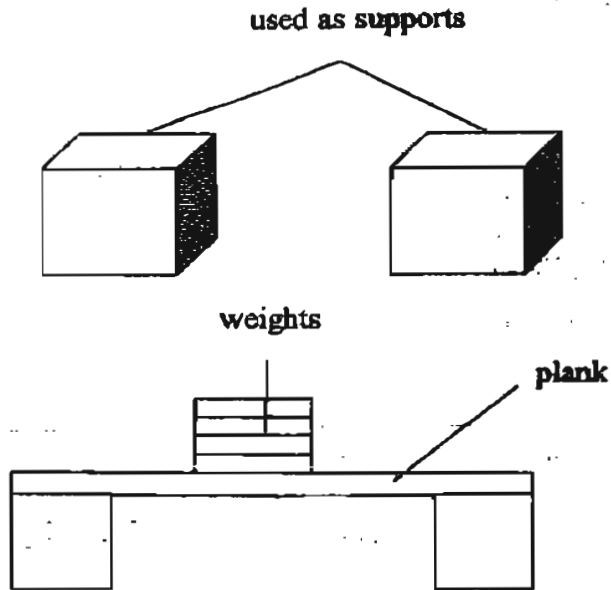
Material A: _____

Material B: _____

b) State another property of Material A that makes it suitable to be made into cooking utensils. [1m]



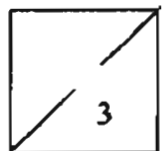
41. Ravi made 2 similar solid shapes using different materials as shown below. Then he used them as supports under a strong plank. He placed weights on the plank until one of the supports gave way.



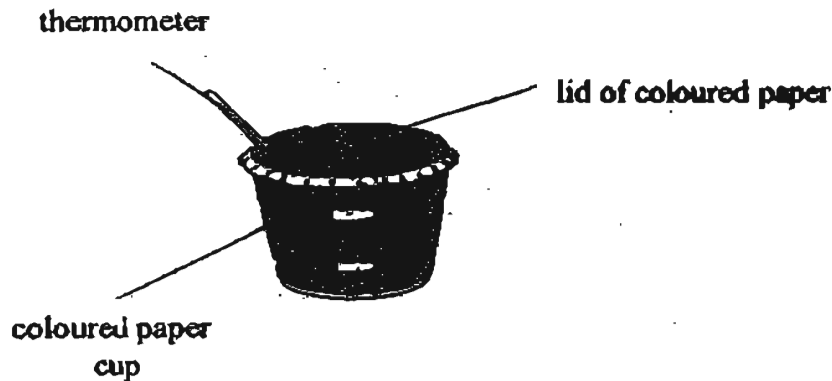
- a) Name 2 variables that should be kept constant in this experiment. [1m]

- b) What is the relationship between the materials and the weights it could support? [1m]

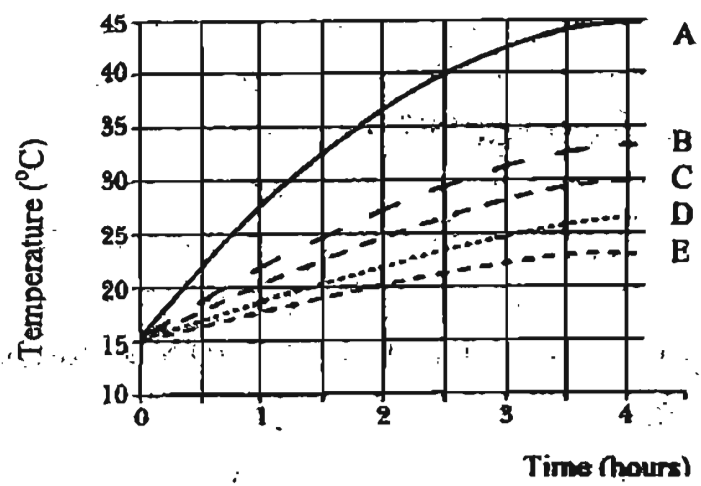
- c) If Ravi were to change the colour of the materials, would it affect the results of the experiment? [1m]



42. Some pupils set up an experiment to investigate the effect of the Sun's heat on paper of various colours. The pupils made 5 identical cups but of different colours A, B, C, D and E. An example of the set-up is shown below. They then left the 5 cups in a sunny place for a number of hours.



The graph below shows the temperature in each cup at different times.



a) After 4 hours, what was the difference between the highest and lowest temperature recorded? [1m]

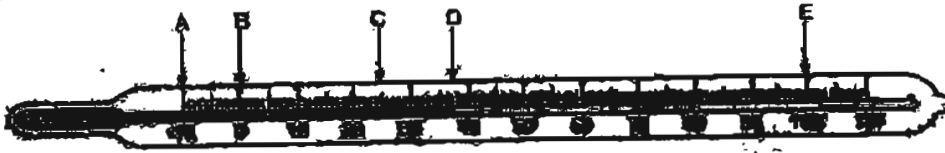
_____ °C

b) Which of the lines labelled A – E on the graph above would best represent a black paper cup? Give a reason for your answer. [1m]

c) Which of the lines labelled A- E would best represent a colour that would be suitable to make summer clothing? Give a reason for your answer. [1m]

3

43. The diagram below shows a laboratory thermometer. The readings of temperatures are indicated by the letters A to E.

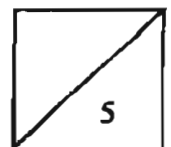


- a) Using A to E, fill in the blanks with the appropriate letter. [3m]
- (i) Temperature of a typical day in Singapore. _____
 - ii) Body temperature of a healthy individual _____
 - iii) Temperature at which water boils _____
 - iv) Temperature at which water freezes _____
 - v) Temperature of frozen foods in the freezer _____
- b) Label the part 'bulb' in the thermometer shown above. ?

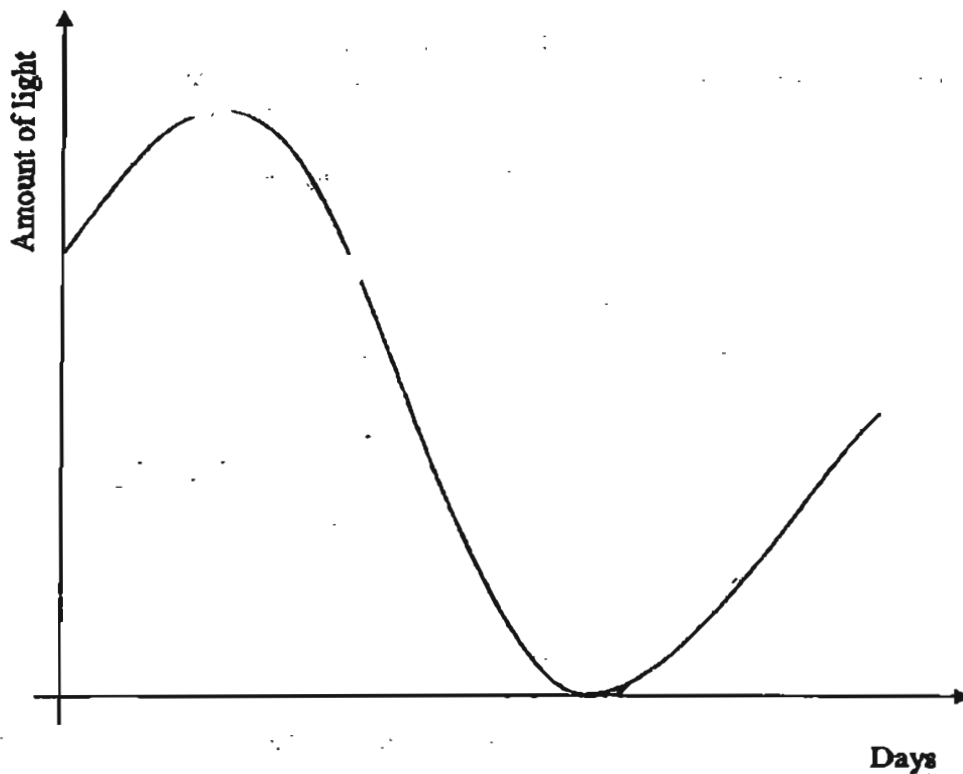
44. Planets R and S have been found by some scientists. They also found some information related to whether the planets could support any life form like those found on Earth. The results are as follows:

| Planets | Earth | Planet R | Planet S |
|------------------------|----------------------|----------------------|--------------------|
| Atmospheric conditions | 21% oxygen | 20% oxygen | 10% oxygen |
| | 0.03% carbon dioxide | 0.04% carbon dioxide | 50% carbon dioxide |
| Distance from the Sun | 148 640 000 km | 228 788 000 km | 150 230 000 km |

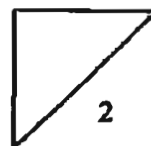
- a) Which planet takes the longest time to revolve round the Sun? Why? [1m]
- _____
- b) Give a reason why Planet R would most probably be unable to support life. [1m]
- _____



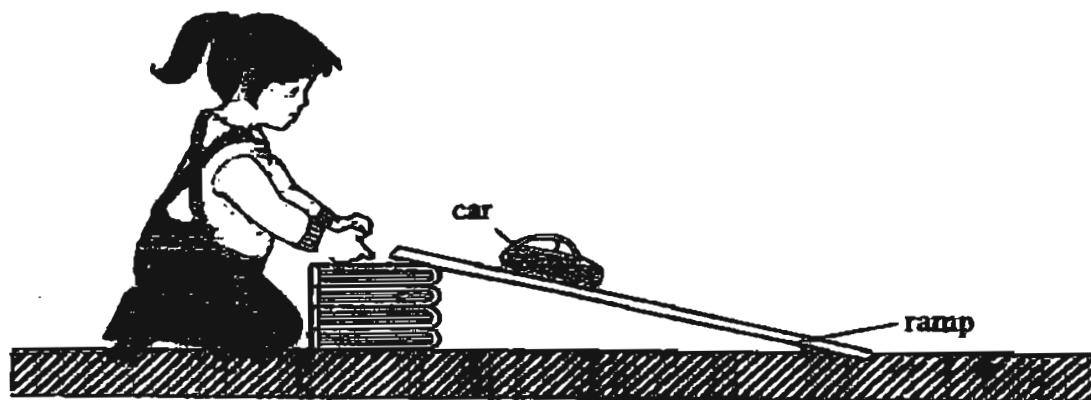
45. Ahmad used a datalogger to measure the amount of light received from the Moon over a period of one month. The data received from the datalogger was represented on a graph as shown below.



- a) On the graph, mark with an (X) and label it "F" to indicate when it was full moon. [½m]
- b) On the graph, mark with an (X) and label it "N", to indicate when it was new moon. [½m]
- c) If Ahmad saw the full moon on February 1, when would he expect to see the new moon? [1m]
-



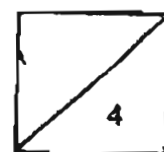
46. The diagram below shows the experiment Xiao Hui set up. She wanted to find out how the height of a ramp would affect the amount of kinetic energy the moving toy car possessed.



- a) Name two variables that must remain unchanged in the experiment. [1m]

- b) What would Xiao Hui need to record for the experiment? [1m]

- c) Xiao Hui observed that the higher the ramp was raised, the further the car moved. Explain her observation. [2m]



CATHOLIC HIGH SCHOOL
PRIMARY SIX
CONTINUAL ASSESSMENT 1, 2005
SCIENCE

| | | |
|---------|---------|---------|
| 01. 4 | 11. 4 | 21. (2) |
| 02. 1 | 12. (4) | 22. (3) |
| 03. 4 | 13. 3 | 23. (3) |
| 04. 2 | 14. 1 | 24. 4 |
| 05. 3 | 15. 1 | 25. 2 |
| 06. 2 | 16. 4 | 26. 2 |
| 07. (4) | 17. 1 | 27. 4 |
| 08. 3 | 18. 3 | 28. 1 |
| 09. 3 | 19. 1 | 29. 1 |
| 10. 3 | 20. 3 | 30. 1 |

31) a) X: Herbivores Y: Carnivores

b) i) C ii) A

32) a) egg b) 19

33) a) Pour oil over the water to stop them from breathing.
b) We can check our flower pots if there are any water. If there are, we should pour them out of the pots.

34) a) X : Hinge joint
b) Joints help us to bend our body to move different parts of the body.

35) phloem * Pumper / pump system
xylem
stomata

36) a) 3 b) It is used to test for the presence of carbon dioxide.
1

2
c) It will turn chalky / Milky

37) a) i) 2 ii) 64
b) The aim is to find out how fast the yeast cell divides.
c) There will be no change. There will be 2 yeast cells.

38)

| | | |
|---|---|---|
| | | ✓ |
| | ✓ | |
| | | ✓ |
| | | ✓ |
| ✓ | | |
| ✓ | | |

39) a) Kumer
b) I would differentiate them based on their body form and their movement.
c) A animal can move freely on their own while a fungus cannot

40) a) Metal

Wood

b) It is strong

41) The position of the supports and the position of the weight.

b) The stronger the support, the more weights it can support.

c) No, it would not. It would just either reflect light or absorb light.

42) a) 22

b) A. Black absorbs heat, thus it is the hottest.

c) E. This colour is the least hot as it could be a light colour, thus it reflects heat.

43) a) C

D

E

B

A

b)

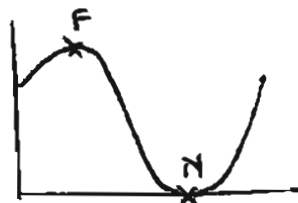


44) a) Planet R.. Planet R is further away from the sun so takes a longer time to revolve round the sun.

b) I would be too cold as it is very far from the sun.

45) a)

b)



c) February 14

46) a) The ramp and the car.

b) The distance moved by the car.

c) As the car moved higher, it gains more potential energy, hence it will experience more kinetic energy as it moves down the slope.