

SM

ANGLO-CHINESE SCHOOL
(PRIMARY)

MID-YEAR EXAMINATION 2004

SCIENCE

BOOKLET A

Name: _____ ()

Class: Primary 5 _____

Date: 14 May 2004

Duration of paper: 1 h 45 min

**THIS BOOKLET CONTAINS 14 PAGES.
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FOLLOW ALL INSTRUCTIONS CAREFULLY.**

PART I

For each of the following questions 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.

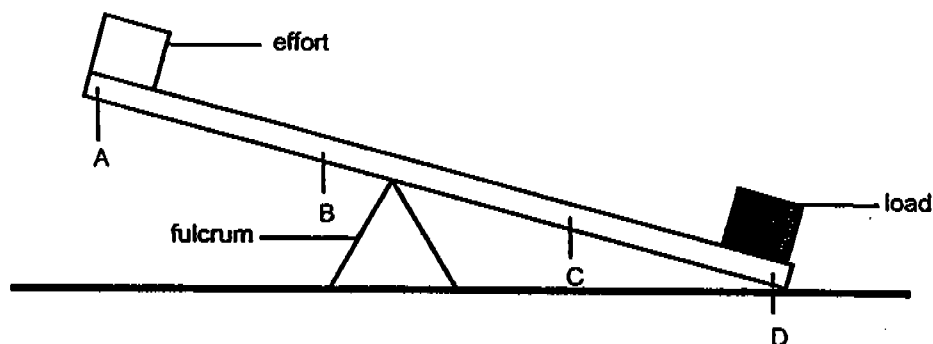
(30 x 2 marks)

1. Mei Hua classified the following actions into two categories – a push or a pull.

Which one of the following actions is correctly classified?

	Action	Push	Pull
(1)	Tug of war	✓	
(2)	Kicking a moving ball		✓
(3)	Bursting a balloon with a pin	✓	
(4)	Closing the door of a refrigerator		✓

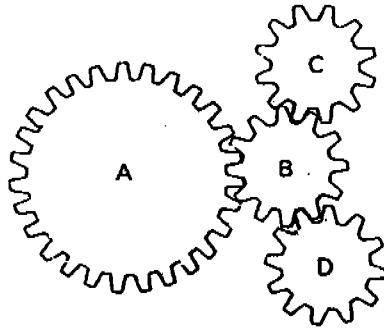
2. Study the following diagram.



In which of the following situations will the least effort be required to lift the load without moving the fulcrum?

	Effort is placed at position	Load is placed at position
(1)	A	C
(2)	A	D
(3)	B	C
(4)	B	D

3. The diagram below shows four gears, A, B, C and D.



When the gears are set in motion, which one will move in a direction that is different from the rest?

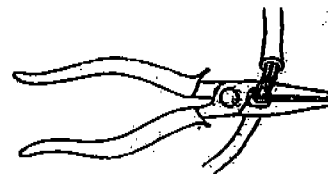
- (1) A
- (2) B
- (3) C
- (4) D

4. In which one of the following diagrams is the effort between the load and the fulcrum?

(1)



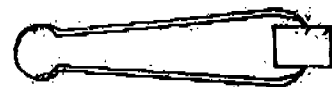
(2)



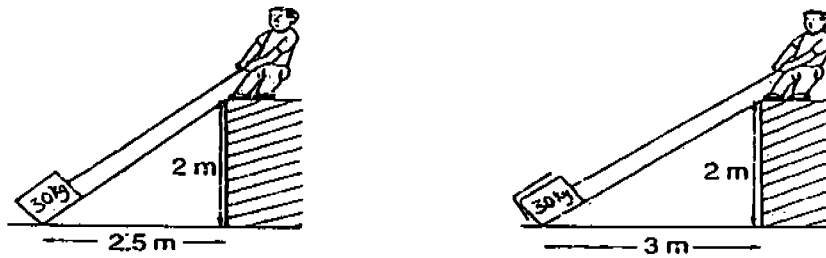
(3)



(4)

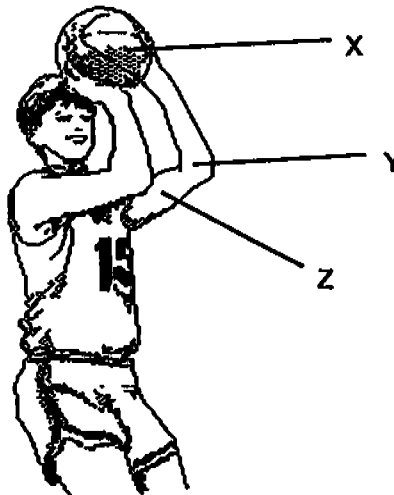


5. Rashid conducted an experiment shown below. He tried two different ways of pulling the 30-kg load to the top. What is the aim of his experiment?



The aim of his experiment is to investigate the relationship between the _____.

- (1) load and the height of the platform
 - (2) effort and the height of the platform
 - (3) load and the steepness of the plank
 - (4) effort and the steepness of the plank
6. The diagram below shows a man playing basketball. Which one of the following is the correct labelling for the fulcrum, effort and load?

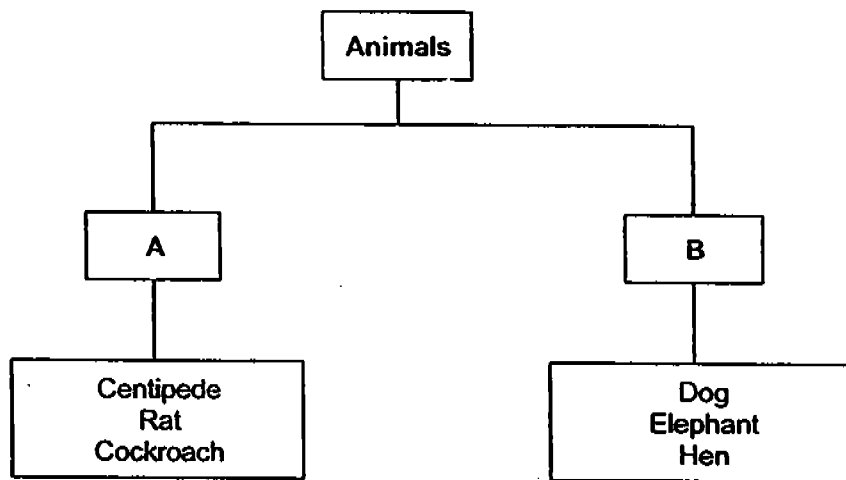


	X	Y	Z
(1)	Effort	Fulcrum	Load
(2)	Load	Fulcrum	Effort
(3)	Effort	Load	Fulcrum
(4)	Fulcrum	Load	Effort

7. Which of the following statements about living things is true?

- (1) Not all living things need food.
- (2) All living things are fixed in one position.
- (3) Not all living things can move about on their own.
- (4) Living things can live for some time without food, but they will die very quickly without air or water.

8. The following diagram shows a classification of two groups of animals.



Which of the following is the correct label for A and B in the classification table above?

	A	B
(1)	Insects	Mammals
(2)	Animals that do not lay eggs	Animals that lay eggs
(3)	Animals that are harmful to Man	Animals that are useful to Man
(4)	Animals that give birth to their young alive	Animals that do not give birth to their young alive

9. John read an article in a science magazine that says, "The size of the fish tank affects the growth rate of fish. The larger the fish tank is, the faster the fish will grow." John then set up an experiment to verify the statement. Before that, he made a checklist of the variables that he should **change** and those that he should keep constant. Which of the following shows the correct checklist?

Variables			
Size of fish	Size of the fish tank	Temperature of water	Type of food given
(1) change	constant	change	change
(2) constant	change	constant	constant
(3) change	constant	constant	change
(4) constant	change	change	constant

10. The following is a description of animal X.

Outer covering : hair
 Habitat : forest
 Method of reproduction : gives birth to its young alive
 Food : mostly fruits

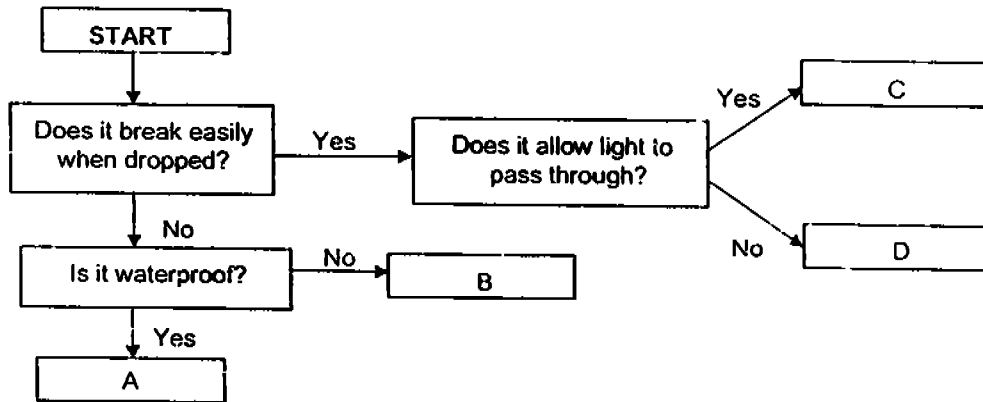
Animal X is most likely to be a _____.

- (1) tiger
 (2) monkey
 (3) platypus
 (4) polar bear
11. The main reason that stainless steel is used to make frying pans is because it

_____.

- (1) is flexible and light
 (2) can conduct electricity
 (3) is strong and can conduct heat easily
 (4) is shiny and makes a pleasant sound when hit

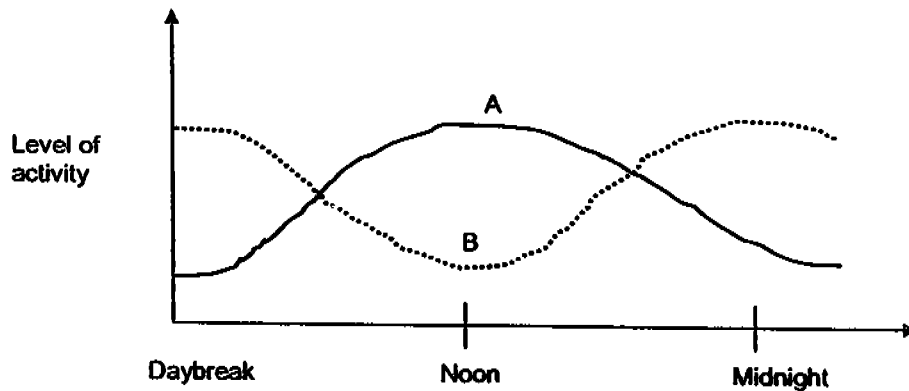
12. The following flowchart shows the characteristics of 4 different objects – A, B, C and D.



Which object is likely to be a sweater?

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

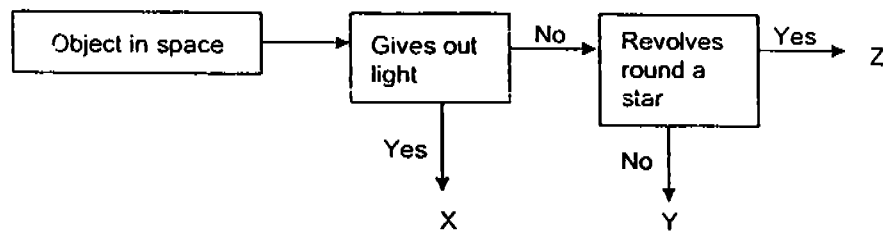
13. The graph below shows how the levels of activity of two animals, A and B, change with time.



What are A and B most likely to be?

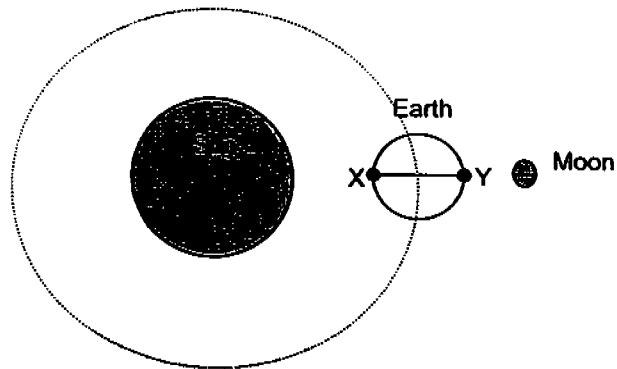
- | | | |
|-----|-----------|----------|
| | A | B |
| (1) | Cockroach | Rat |
| (2) | Rat | Chicken |
| (3) | Chicken | Owl |
| (4) | Eagle | Monkey |

14. Which of the following represents a planet?



- (1) X
- (2) Y
- (3) Z
- (4) None of the above

15. The diagram below, shows X experiencing midday and Y experiencing midnight. The Earth is between the Sun and the Moon.



Which of the following statements is true about a man who is standing at position X and a woman standing at position Y on the Earth?

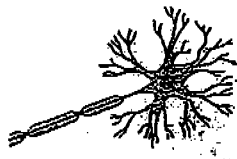
- A X will experience sunset in 12 hours.
- B Y will experience sunrise in 12 hours.
- C X will experience midnight in 12 hours.

- (1) C only
- (2) A and B only
- (3) A, B and C
- (4) None of the above

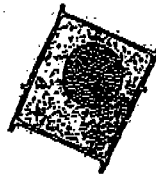
16. Which of the following sentences about our solar system is false?

- (1) Neptune and Pluto are the coldest planets.
- (2) The Moon can sometimes be seen in the day.
- (3) The Sun is made up of rocks, metals and gases.
- (4) The Moon and the Earth rotate about their own axes.

17. Which of the following is/are plant cells? (Note: Cells are not drawn to scale)



A



B



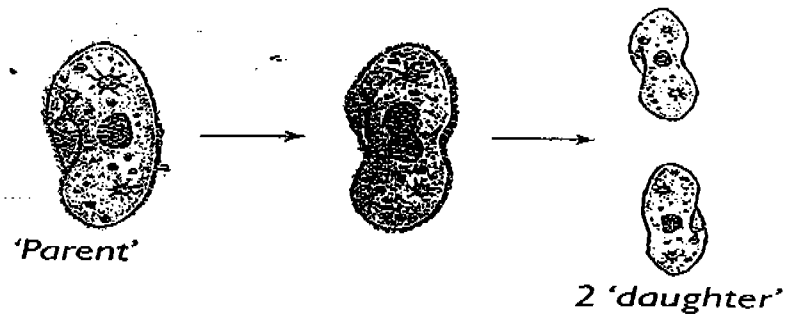
C

- (1) A only
- (2) B only
- (3) B and C only
- (4) All of the above

18. _____ is found in plant cells but not in animal cells.

- (1) Nucleus
- (2) Cytoplasm
- (3) Chloroplast
- (4) Cell membrane

19. The process illustrated below shows a cell activity?



Which of the following statements about the process is false?

- (1) It is essential for growth.
- (2) It occurs in both plants and animals.
- (3) It stops when a human stops growing.
- (4) The daughter cells are identical to the parent cell.

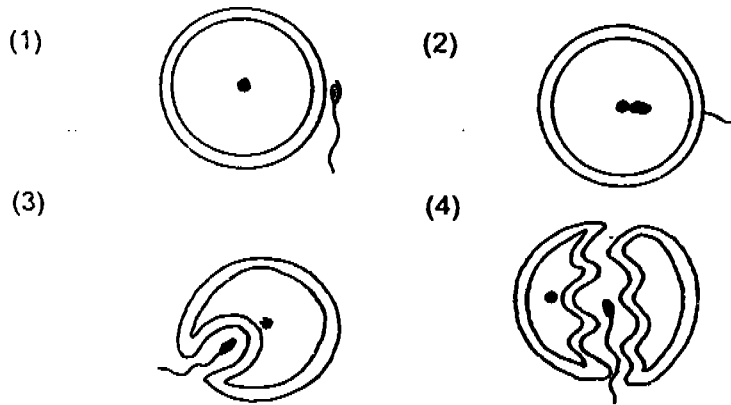
20. Animals that do not look after their offspring produce many more offspring than animals that look after offspring. This is most likely because they want to _____

- (1) dominate a certain area
- (2) increase their population
- (3) provide food for other animals
- (4) ensure some of their offspring will survive

21. Which of the following is a trait that is passed on from a parent to its offspring?

- (1) Gender
- (2) Birth mark
- (3) Skin colour
- (4) Length of our hair

22. Which of the following diagrams shows correctly that fertilisation of a human egg by a sperm has taken place?



23. Which of the following does not undergo sexual reproduction?

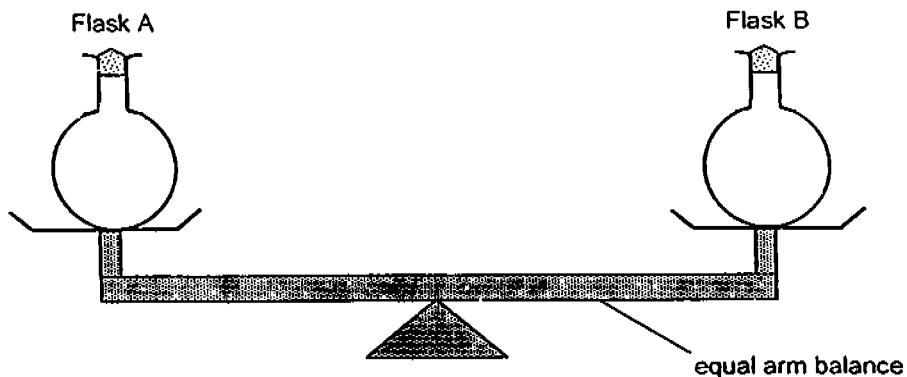
- (1) Yeast
- (2) Human
- (3) Mackerel
- (4) Papaya plant

24. Honey has a definite _____.

- A Mass
- B Shape
- C Volume

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

25. Two identical glass flasks, A and B, are balanced as shown in the set-up below.

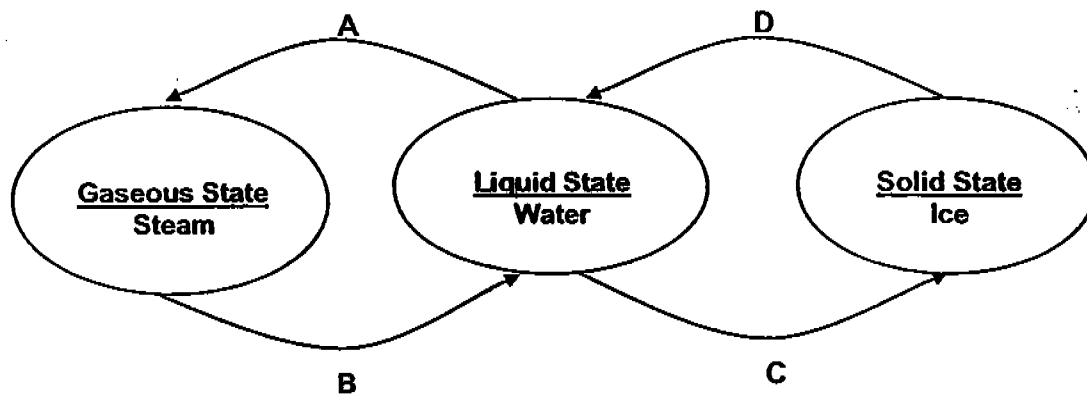


When some air is pumped into Flask A, which of the following will be observed?

- A Flask A will become bigger.
- B The volume of air in the Flask A will increase.
- C The balance will be tilted downwards on the side of Flask A.

- (1) A only
- (2) C only
- (3) B and C only
- (4) All of the above

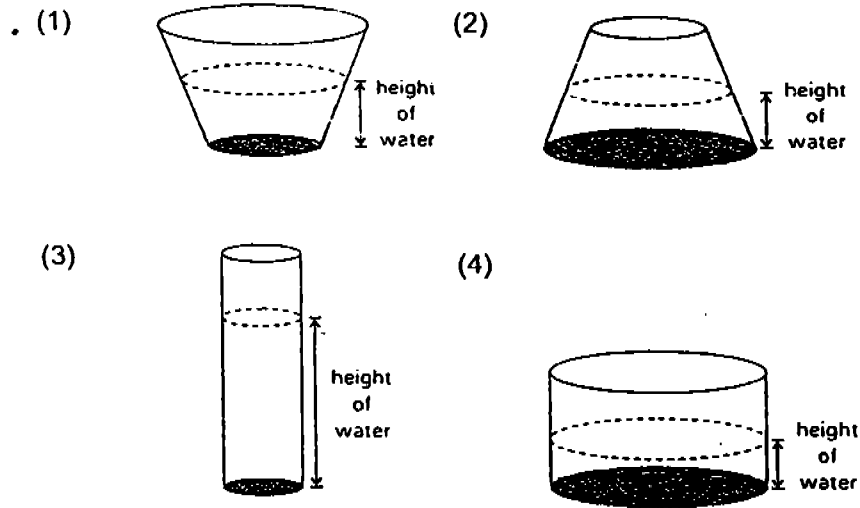
26. The diagram below shows four processes (A, B, C and D) involved in the change of the state of water.



Which one of the following correctly shows the processes indicated by the arrows?

	A	B	C	D
(1)	Evaporation	Condensation	Melting	Freezing
(2)	Boiling	Evaporation	Condensation	Melting
(3)	Boiling	Condensation	Freezing	Melting
(4)	Evaporation	Boiling	Freezing	Melting

27. Devi poured 200cm^3 of water into each of the four containers which were made of the same material. The containers were left in the open. Which of the containers would have the least amount of water left after a few hours?

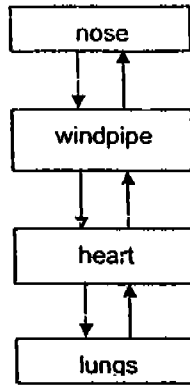


28. Which of the following statements is true about the water cycle?

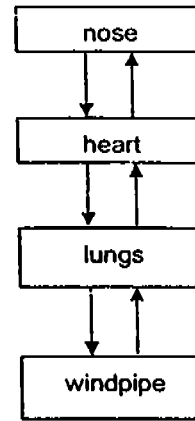
- (1) Water vapour evaporates to form clouds.
- (2) The water cycle takes place in the day only.
- (3) Evaporation of seawater takes place at a fixed temperature.
- (4) Evaporation and condensation are the two main processes in the water cycle.

29. Which one of the following diagrams shows the correct movement of air in our body?

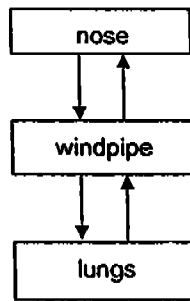
(1)



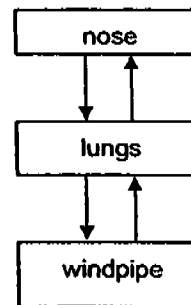
(2)



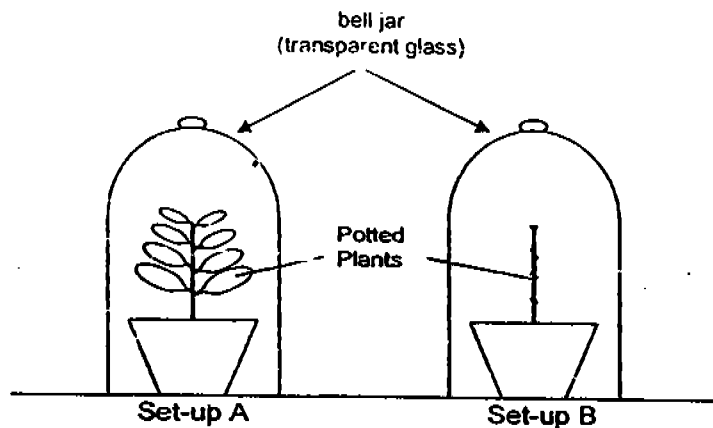
(3)



(4)



30. Two potted plants are covered with a bell jar each and placed near a window as shown below. The potted plant in Set-up B has all the leaves removed.



An amount of gas sample is drawn from each of the bell jars at different times of the day. The composition of the gas samples are analysed and tabulated.

Which of the following would likely be the gas sample taken from Set-up B at 12.00 noon?

Percentage composition				
	Carbon dioxide	Nitrogen	Oxygen	Water vapour
(1)	0	83	17	0
(2)	5	80	15	0
(3)	6.5	77	16	0.5
(4)	0.5	77	22	0.5

ANGLO-CHINESE SCHOOL.
(PRIMARY)

MID-YEAR EXAMINATION 2004

SCIENCE

BOOKLET B

Name: _____ ()

Class: Primary 5 _____

Date: 14 May 2004

Duration of paper: 1 h 45 min

Parent's Signature

Booklet	Maximum marks	Marks obtained
A	60	
B	40	
Total	100	

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PART II

For questions 31 to 46, write your answers in this booklet.

The number of marks available is shown in brackets [] at the end of each question or part question.

(40 marks)

31(a). Describe two differences between the Earth and the Moon. [2]

31(b). John is a meteorologist based in the South Pole. He frequently refers to satellite pictures for his work. Although he is far away from Singapore, he still calls home on his handphone.

Based only on the description above, state two uses of man-made satellites.

32. The table below shows information about some the planets in our solar system.

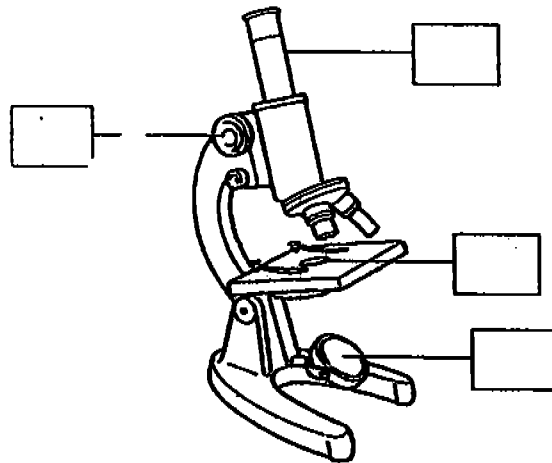
Planet	Mercury	Venus	Earth	Mars	Jupiter	Saturn
Distance from the Sun (million km)	58	108	150	228	778	1427
Time taken to make one revolution around the Sun	88 days	225 days	365 days	687 days	12 years	29 years

(a) From the table, what can you conclude about the distance between the planets and the Sun and the time taken to make one revolution around the Sun? [2]

- (b) If a new planet is discovered between Venus and Earth, predict the time it would take to make one revolution around the sun. [1]

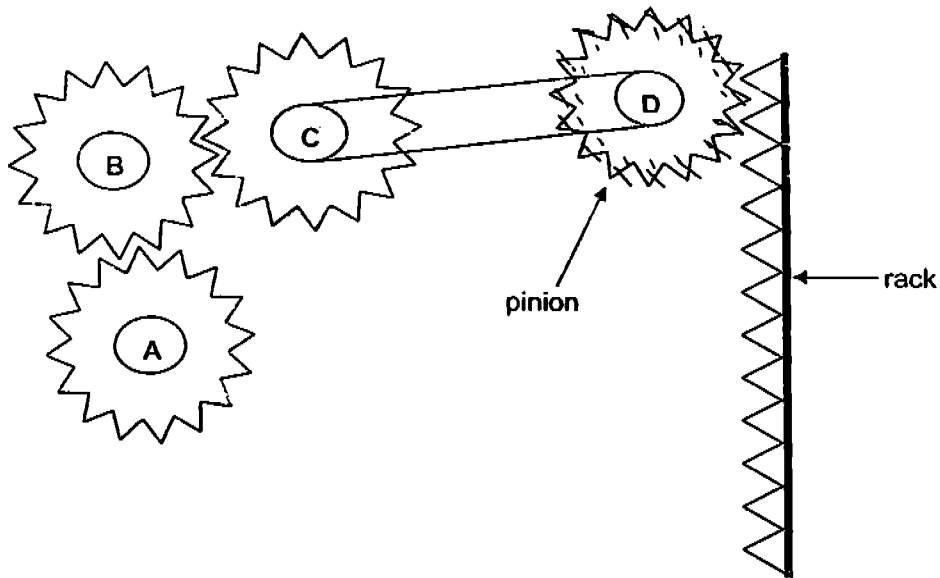
33. The picture below shows a microscope. In the four boxes provided,

- (a) label X, in the box, which shows the part where the specimen slide is placed. [1]
- (b) label Y, in the box, which shows the part that is used to tune to get a sharp and clear image. [1]



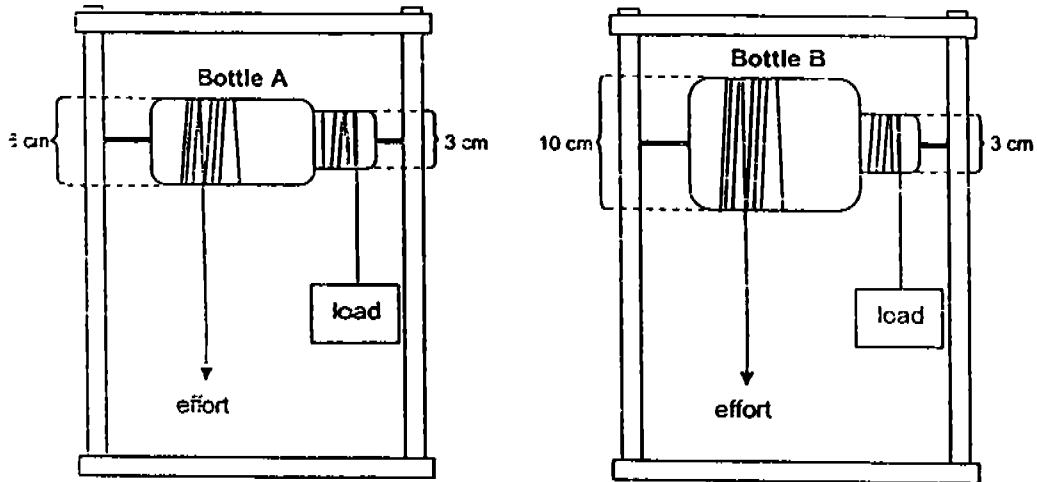
34. A rack and pinion system is used to convert the direction of motion of forces. The rack is the flat, toothed part, while the pinion is the gear.

Study the rack and pinion system below and answer the questions that follow.

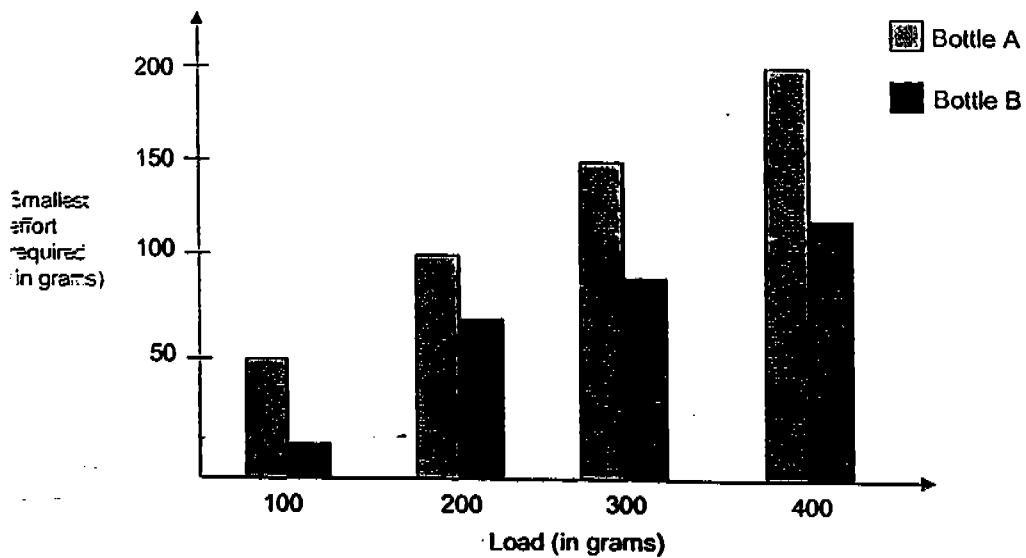


- (a) In which directions should the 4 gears (A, B, C and D) rotate to move the rack upwards? Write clockwise or anti-clockwise in the spaces below. [2]
- Gear A: _____
- Gear B: _____
- Gear C: _____
- Gear D: _____
- (b) If a smaller gear is used to replace one of the gears in the system so that Gear D would spin faster, which gear (A, B or C) would be replaced? [1]
- _____
- _____
- (c) For Gear D to spin twice as fast, how many teeth should the replacement gear have? [1]

35. Thomas set up an experiment to test if the diameter of a wheel affects the effort required to lift a load. He used two bottles of different diameters and set up the experiment below.



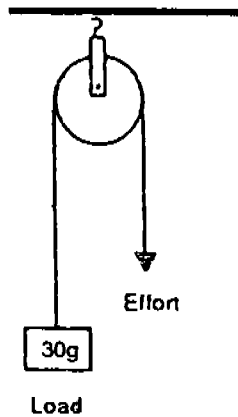
He then used a spring balance to measure the effort needed to lift each of the different loads and then charted a graph to show the results below.



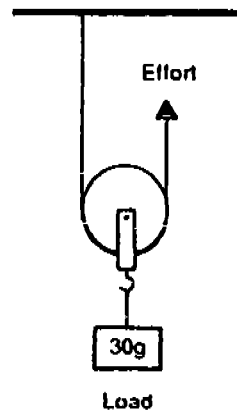
a. From the results above, what can you conclude about the diameter of the bottle and the effort required to lift the load? [2]

b. How does this simple machine help us to do work? [1]

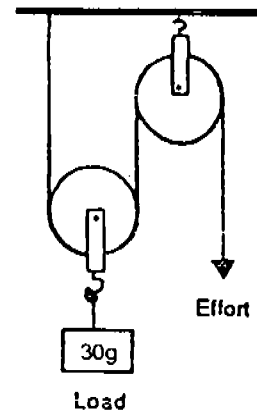
36. The diagrams below show 3 different pulley systems, each lifting a load of 30g.



Single Fixed Pulley

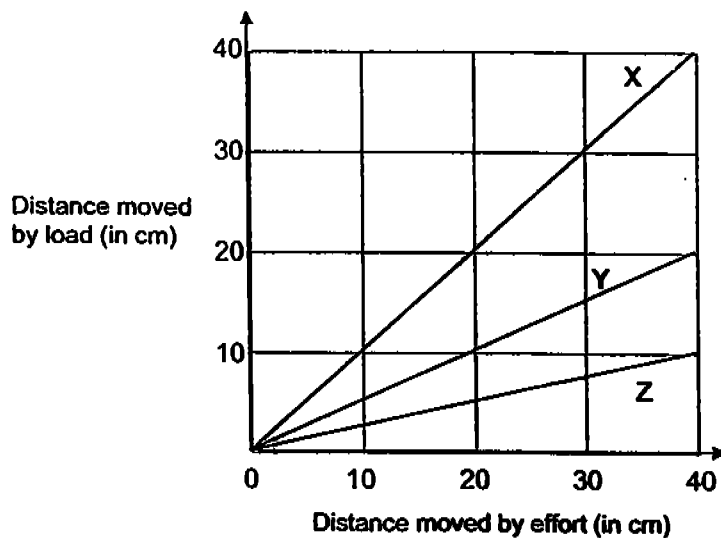


Single Movable Pulley



Pulley System

The following graphs – X, Y and Z – show the relationship between the distance moved by the load and the distance moved by the effort.

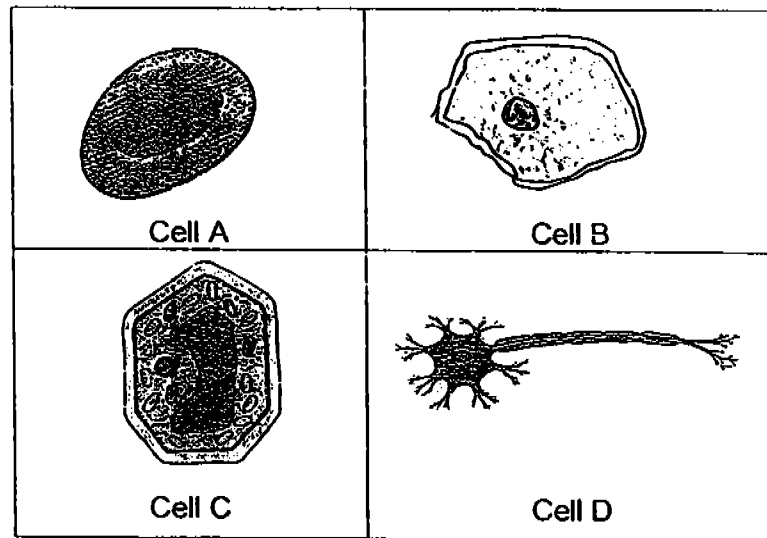


(a) Which types of pulley systems do the graphs X and Y represent? [1]

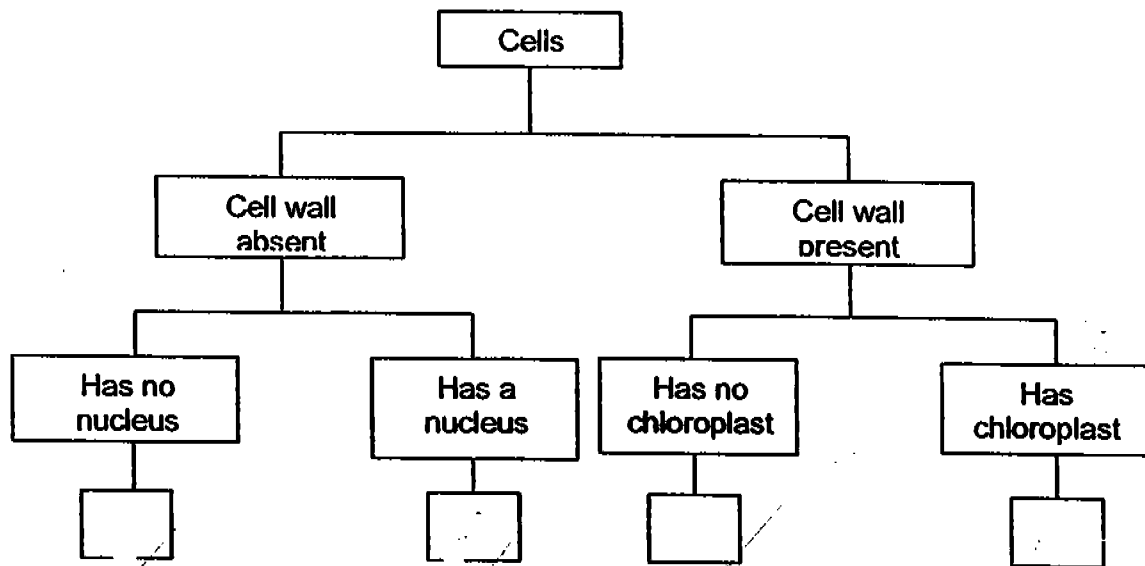
- (i) Graph X represents the _____
 (ii) Graph Y represents the _____

(b) For Graph Z, what can you conclude about the distance moved by the load and the distance moved by the effort? [2]

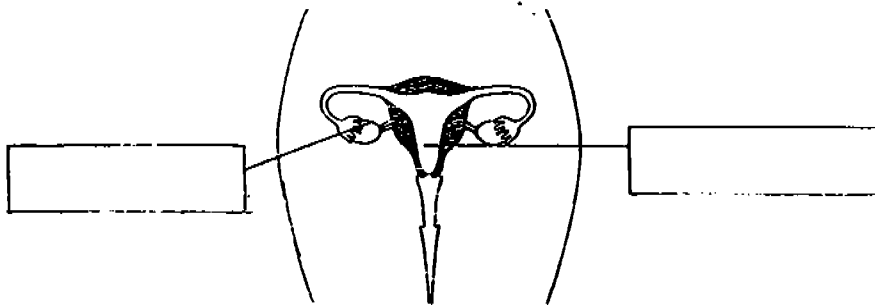
37. The diagram below shows four plant and animal cells.



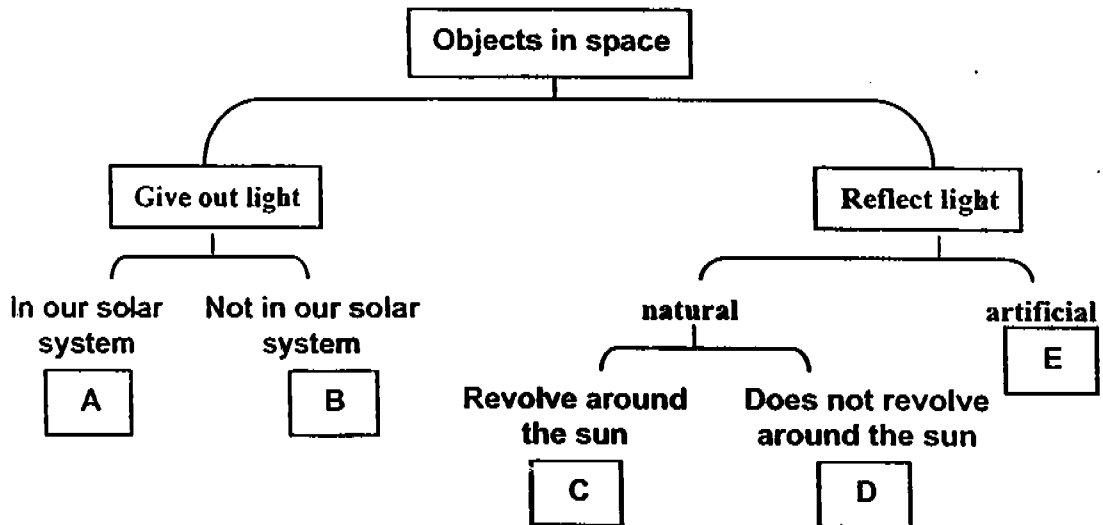
Complete the classification chart below by putting the cells in the correct boxes. Write the letters A, B, C or D in the boxes provided. [2]



38. The diagram below shows the female reproductive system. Label the parts in the diagram below. [2]



39. Study the classification diagram carefully.



Using the classification diagram, complete the table below by writing A, B, C, D and E in the correct boxes to identify the objects in space. [2½]

Sun	
Moon	
Uranus	
Stars in the night sky	
Telecommunication Satellites	

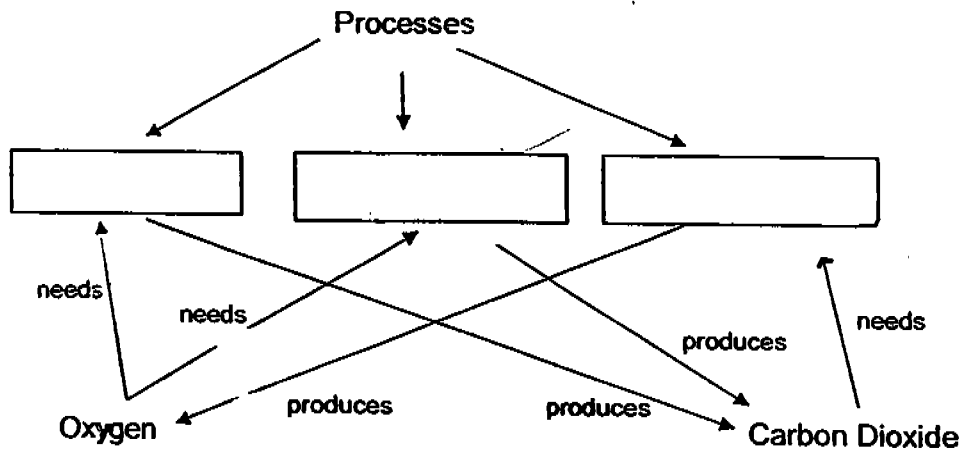
40. Ravi studied the melting and boiling points of 4 substances, A, B, C and D. He noted his findings in the table below.

Substance	Melting point	Boiling point
A	0°C	100°C
B	-20°C	10°C
C	80°C	200°C
D	-1°C	102°C

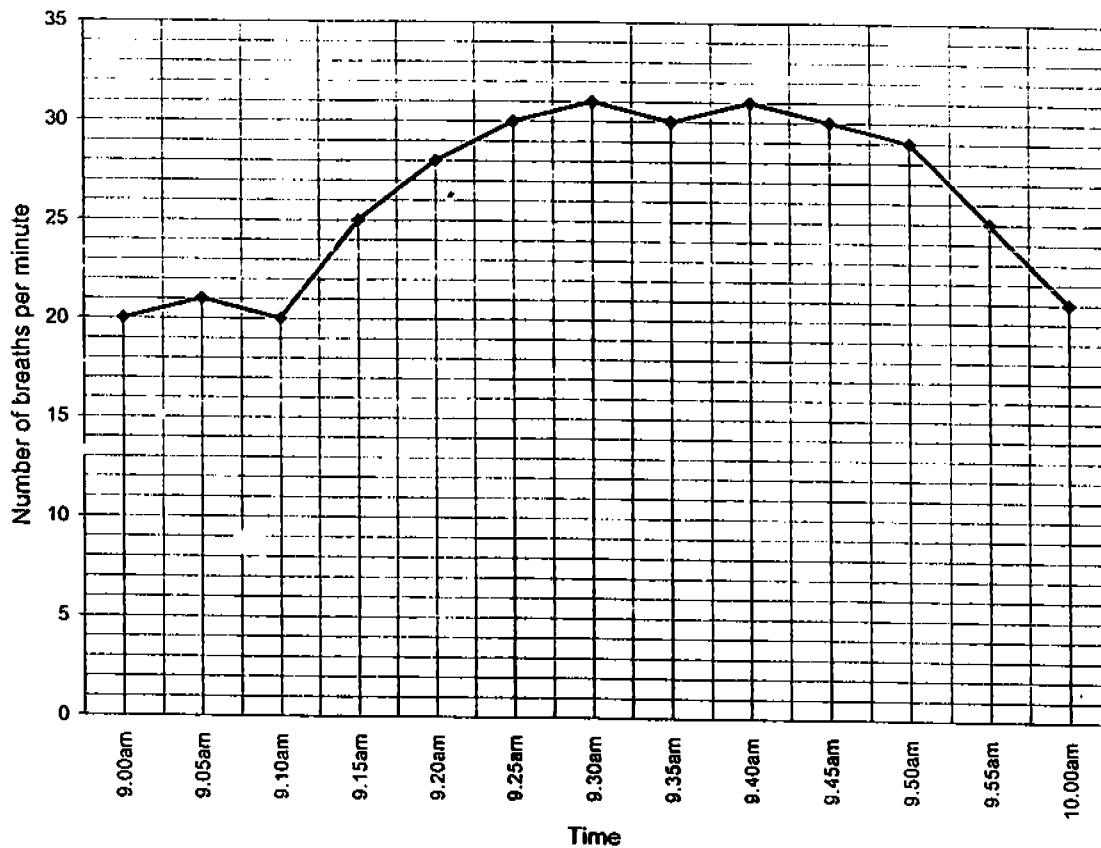
(a) Which substance (A, B, C or D) is a solid at room temperature? [1]

(b) Which of the substances is likely to be pond water? Why? [1½]

41. Combustion, Respiration and Photosynthesis are three processes that involve carbon dioxide and oxygen. Complete the concept map below by writing these processes in the boxes provided. [2]



42. The graph below shows John's breathing rate from 9.00am to 9.55 am. During this period of time, John did some jogging.



Based on the graph, 4 statements were made about John's breathing rate. Refer to the table below. Put a tick in the correct boxes to indicate if the statement is True, False or Not Possible to Tell. [2]

Statements	True	False	Not Possible to Tell
Between 9.10 am to 9.25am, John's breathing rate increased from 20 breaths to 30 breaths per minute.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
From 9.40am onwards, John's rate of breathing decreased at a constant rate.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The dip in John's rate of breathing at 9.35am was because he had stopped to tie his shoelaces.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
At 10am, his breathing rate was the same as it was at 9 am.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

43. Andrew wanted to find out what type of soil is suitable for growing the balsam plant. He set up an experiment by planting a balsam plant in 6 different pots (A, B, C, D, E and F). The conditions of each set-up is shown in the table below.

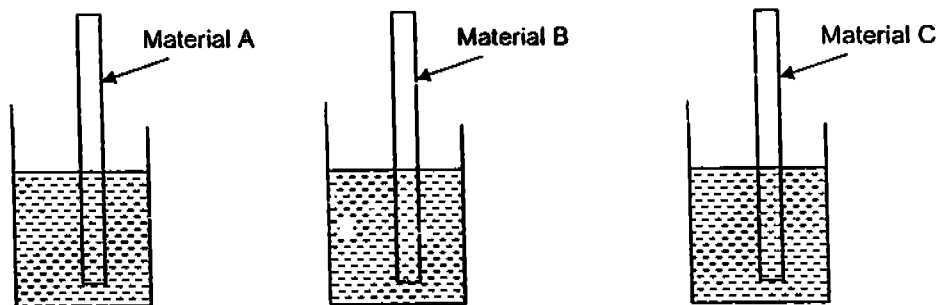
Conditions	Pot A	Pot B	Pot C	Pot D	Pot E	Pot F
Size of pot	1000 cm ³	500 cm ³	800 cm ³	500 cm ³	500 cm ³	800 cm ³
Type of soil	sandy	loamy	loamy	sandy	clayey	Loamy
Amount of water used everyday	250 cm ³	250 cm ³	350 cm ³	250 cm ³	250 cm ³	350 cm ³

- (a) For his experiment to be a fair one, which of these pots should Andrew use for comparison? [1]

- (b) Name 2 other variables that should be kept constant. (Do not mention the variables already included in the question) [1]

44. When the Sun heats up the Earth, water in various places _____ heat and _____. The water vapour rises and _____ heat when it reaches the cooler atmosphere in the sky and so it _____ into water droplets. The water droplets form clouds and later fall as rain. [2]

45. Three rectangular strips were cut from different materials. The strips were then dipped into three similar beakers containing the same amount of coloured water as shown in the set-up below.



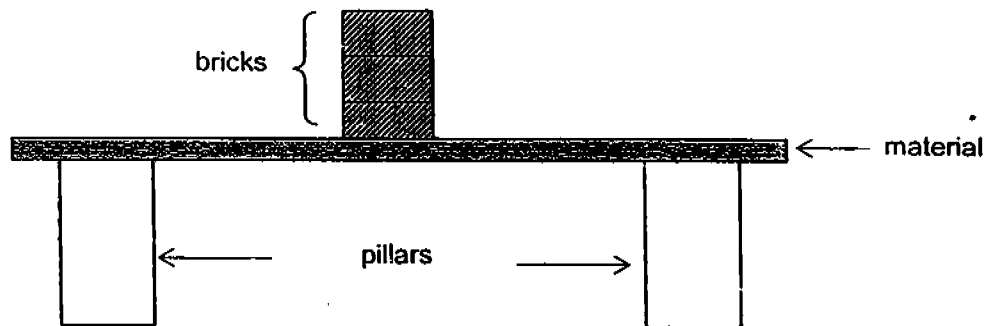
At regular time intervals, the strips were removed and the height of coloured water on the strips were measured. The measurements are shown below.

Time (minutes)	Height of coloured water on A (cm)	Height of coloured water on B (cm)	Height of coloured water on C (cm)
1	10	10	10
2	11	11	10
3	12	13	10
4	12.5	14	10

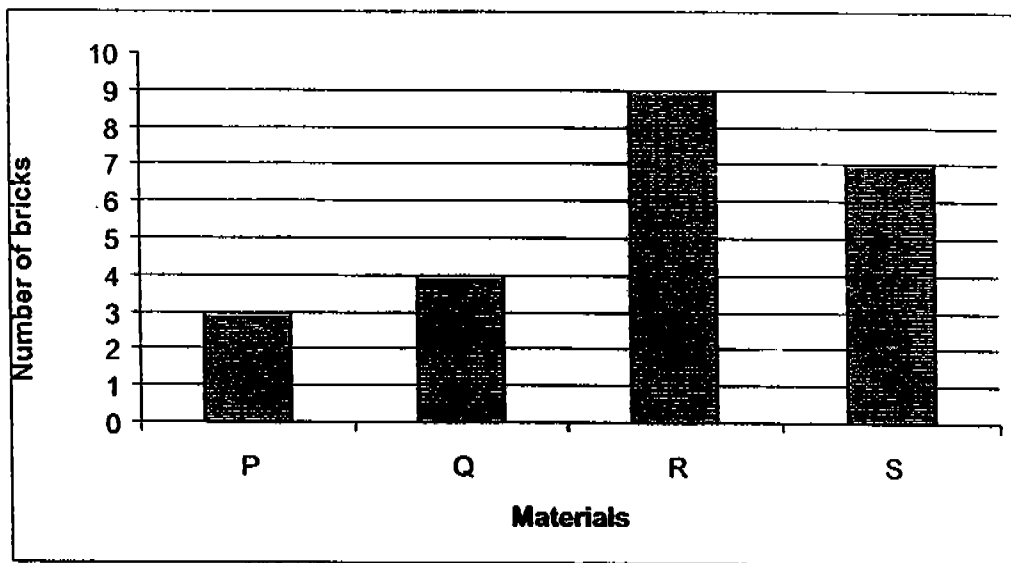
What is the aim of this experiment?

[2]

46. Gandalf placed a piece of material, Material P, over two pillars. Bricks were stacked on the material until it broke.



He repeated the experiment on 3 other different materials (Q, R and S) of the same length and noted the number of bricks required to break each material. The graph below represents his observation.



- (a) Which material (P, Q, R or S) requires the most number of bricks to break it? [1]

- (b) What is the aim of this experiment? [1]

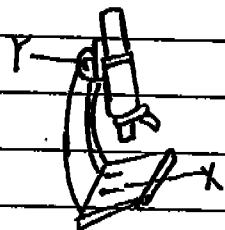
~ END OF PAPER ~

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- | | | | |
|-----|---|-------|-------|
| 1) | 3 | 11) 3 | 21) 3 |
| 2) | 1 | 12) 2 | 22) 2 |
| 3) | 2 | 13) 3 | 23) 1 |
| 4) | 4 | 14) 3 | 24) 3 |
| 5) | 4 | 15) 1 | 25) 2 |
| 6) | 2 | 16) 3 | 26) 3 |
| 7) | 4 | 17) 3 | 27) 4 |
| 8) | 3 | 18) 3 | 28) 4 |
| 9) | 2 | 19) 3 | 29) 3 |
| 10) | 2 | 20) 4 | 30) 3 |

BOOKLET B -

- 31) a) The moon does not have an atmosphere, air or water.
 b) Man made satellites can take pictures of areas around the world and can transmit handphone signals.
- 32) a) The time taken for a planet to make a revolution around the sun is more if the planet is further away from the sun.
 b) I would talk about 295 days to make a revolution around the sun.



- 33) 34) a) Gear A - anti-clockwise
 Gear B - Clockwise
 Gear C - anti-clockwise
 Gear D - anti-clockwise
- 34) b) Gear b should be replaced.
 c) The replacement gear should have eight teeth.
- 35) a) The smaller the diameter, the more effort needed to lift a load.
 b) It helps us to load from a different direction to increase a faster speed.
- 36) a) i) effort ii) load
 b) The distance more it greater.

- 37) A D B C

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38) Ovaries , womb .

39)

A
D
C
B
E

40) a) Substance C .

b) Substance D . Water freezes and build at a high temperature .

41) Combustion , respiration , photosynthesis .

42)

TRUE
 FALSE
 NOT POSSIBLE
 FALSE

43) a) pot B , pot E and pot D should be used .

b) The amount of Sunlight and water .

44) gains , evaporates , loses , condenses .

45) To check which of the materials absorbed the most water .

46) a) material R .

b) To check which of the materials is the strongest .