

SA2

NANYANG PRIMARY SCHOOL

PRIMARY 5 SCIENCE

**SEMESTRAL ASSESSMENT 2
2004**

BOOKLET A

Date : 2 November 2004

Duration : 1 h 45 min

Name : _____ ()

Class: Primary 5 ()

Marks Scored:

| | | |
|--------------------|--|------------|
| Booklet A : | | 60 |
| Booklet B : | | 40 |
| Total : | | 100 |

Parent's signature:

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FOLLOW ALL INSTRUCTIONS CAREFULLY.**

Booklet A consists of 14 printed pages.

Booklet B consists of 13 printed pages including this cover page.

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. Jane was blindfolded and asked to describe an object that was placed inside a black box. She put her hand into the box and started to describe the object. "It is soft and furry. It vibrates and sings when I squeeze it." How many senses did Jane use when she made her observations?

(1) 1
(3) 3

(2) 2
(4) 4

- ✓ 2. What will happen when our large intestine does not function properly?

- A Digestive juice cannot be added to digest the food.
✓ B Water cannot be reabsorbed from the undigested food.
C The digested food cannot pass through the blood vessels.
✓ D The undigested food cannot be passed out to the rectum.

(1) A only

(2) C only

(3) B and D only

(4) A, B and D only

- ✓ 3. Which of the following statements are true about our heart?

- ✓ A The heart is made of muscles.
✓ B Our heart lies near the middle of our chest and is protected by our ribs.
✓ C The only function of the heart is to transport oxygenated blood to all parts of our body.
✓ D When we exercise, the heart beats faster to help carry away carbon monoxide and other unwanted substances.

(1) A and B only

(2) A and C only

(3) B and C only

(4) B and D only

- ✓ 4. Marcus exercises using dumb-bells regularly. In order to lift the dumb-bells with his arm, his _____ must work together.

- (1) ribs and skeleton
(2) muscles and skull
(3) skeleton and skull
(4) muscles and bones

✓5.

Which one of the following statements is true about how muscles work?

- (1) While one muscle contracts to pull the joints, the other muscle relaxes.
- ~~(2)~~ While one muscle relaxes to pull on the bone, the other muscle contracts.
- ~~(3)~~ While one muscle relaxes to pull the joints, the other muscle contracts.
- (4) While one muscle contracts to pull on the bone, the other muscle relaxes.

✓6.

Which of these organisms are made up of only one cell?

- A Moss
- ~~B~~ Yeast
- ~~C~~ Amoeba
- ~~D~~ Rod-shaped bacterium

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

✓7.

Study the description of four children, Brian, Chloe, Rachel and Joel below.

- Brian has curly hair.
- Chloe can roll her tongue.
- Rachel walks very quickly.
- Joel has a few decayed teeth.

Based on the above descriptions, which children are considered to have inherited traits?

- (1) Brian and Chloe only
- (2) Brian and Joel only
- (3) Chloe and Rachel only
- (4) Joel and Rachel only

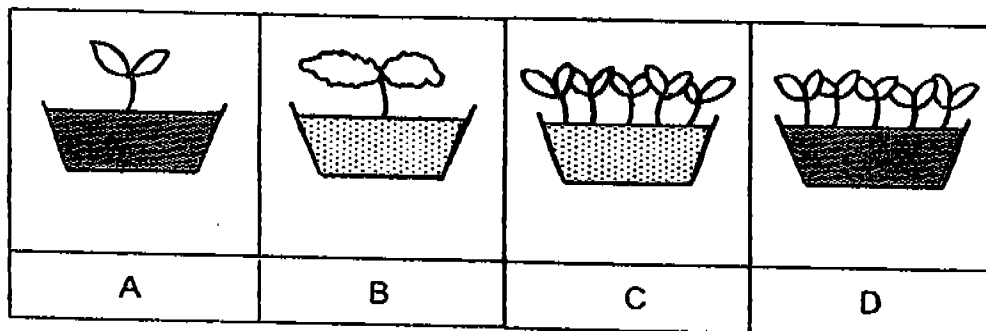
8.

In which of the following animals do internal fertilization occur?

- ~~A~~ Bird
- ~~B~~ Turtle
- C Frog
- ~~D~~ Giraffe

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

9. The diagram below shows four pots of plants. Laura wanted to find out how overcrowding could affect the way plants grow. She kept the plants in the same place and gave them the same amount of water daily for ten days.



Key:



Clayey soil

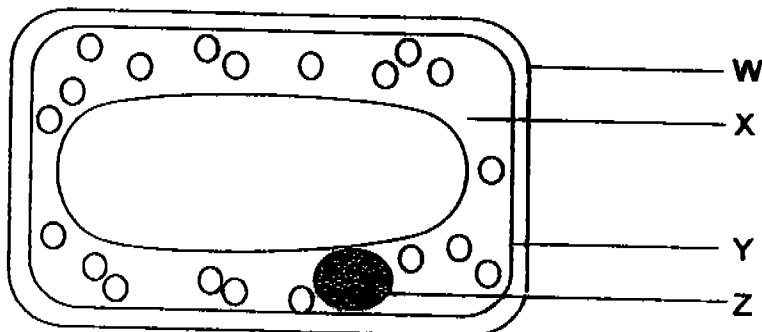


Garden soil

Which two pots should Laura use for her experiment to ensure a fair test?

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

10. The diagram below shows a plant cell.



Which one of the following statements best describes what would happen if part W was removed?

- A The cell would burst.
 B Part X would remain in the cell.
 C Part Y would produce new part W for the cell.
 D There would be no genetic material in the cell.

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

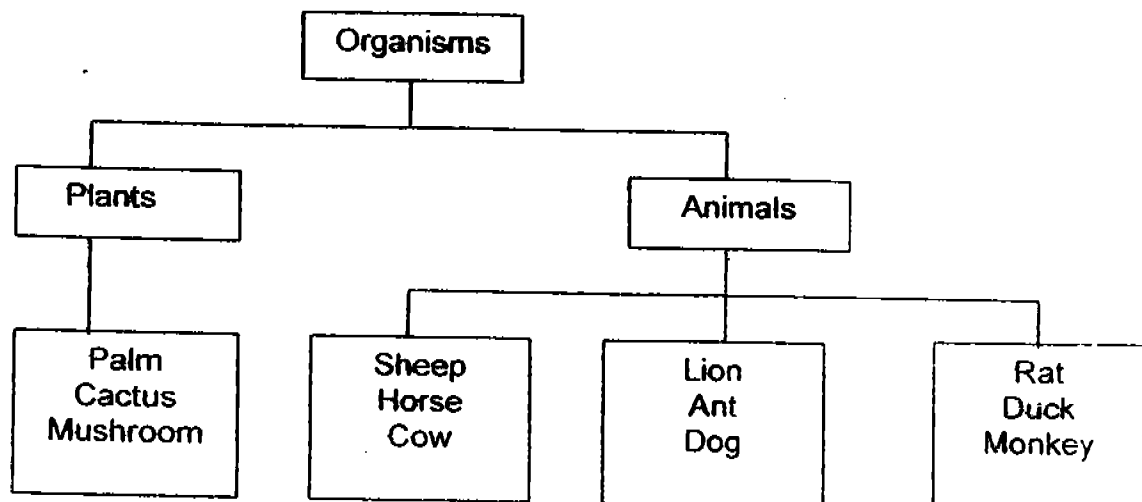
11. Which one of the following is the correct method of magnetising an iron nail into a magnet?

- (1) Stroking a magnet with the iron nail repeatedly along its entire length in the same direction.
- (2) Stroking the iron nail with a magnet repeatedly along its entire length in the same direction.
- (3) Stroking a magnet with the iron nail repeatedly along its entire length in different directions.
- (4) Stroking the iron nail with a magnet repeatedly along its entire length in different directions.

12. The Sun appears to move across the sky because the _____.

- (1) Earth rotates on its own axis
- (2) Earth revolves round the Sun
- (3) Sun revolves round the Earth
- (4) Sun is spinning on its own axis

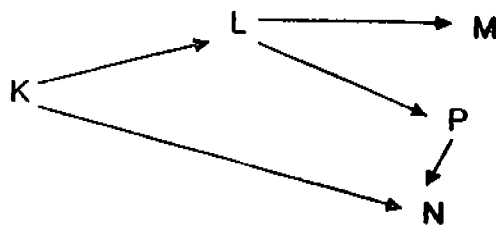
13. Aminah classified some organisms into groups as shown below.



Which two of the organisms were classified wrongly?

- (1) palm and duck
- (2) dog and monkey
- (3) cactus and sparrow
- (4) mushroom and ant

14. Study the food web below carefully.



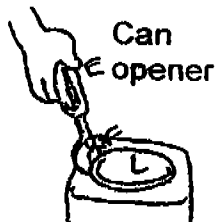
Which of the following statements are correct?

- A M is an omnivore.
- B N is both a predator and a prey.
- ☒ C Without K, all the animals will die eventually.
- ☒ D Without P, the population of M will increase.

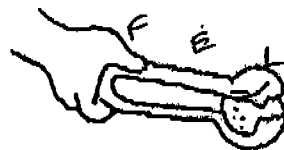
- | | |
|------------------|------------------|
| (1) A and B only | (2) A and C only |
| (3) B and D only | (4) C and D only |

15. Which of the following simple machines use an effort smaller than the load?

A

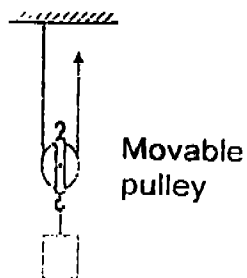


B



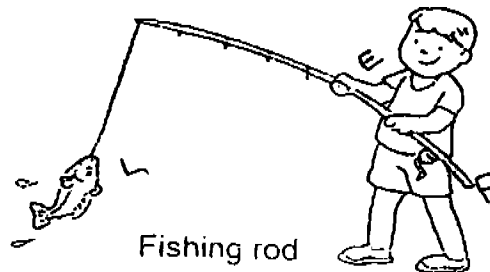
Ice tongs

C



Movable pulley

D

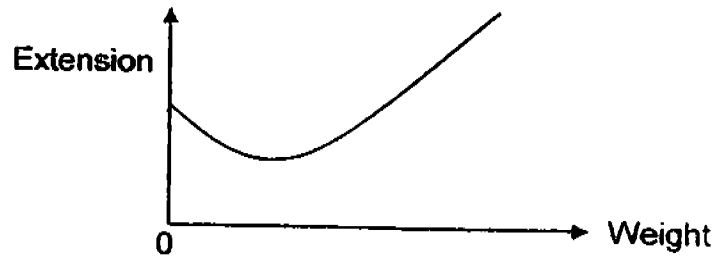


Fishing rod

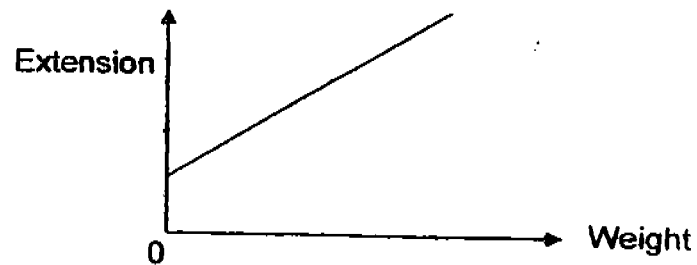
- | | |
|------------------|-------------------|
| (1) A and C only | (2) B and C only |
| (3) B and D only | (4) A, B, C and D |

16. Which one of the following graphs correctly represents the relationship between the weight of the load and extension of a spring?

(1)



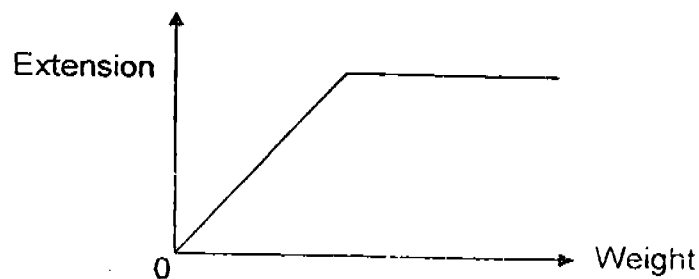
(2)



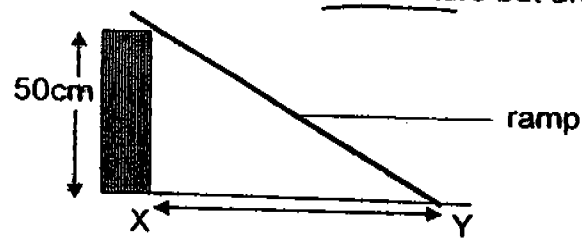
(3)



(4)



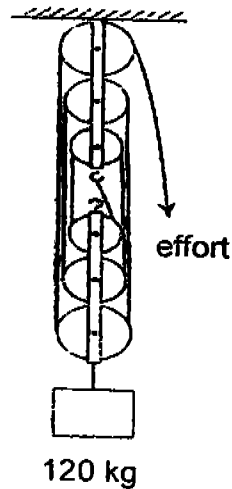
17. Four ramps A, B, C and D are used to move a box up to a height of 50cm. The ramps have the same texture but are different in lengths.



Which one of the ramps requires the most force to move a box of 30kg load up the slope?

| | Ramp | Length of XY (cm) |
|-----|------|-------------------|
| (1) | A | 40 |
| (2) | B | 55 |
| (3) | C | 70 |
| (4) | D | 80 |

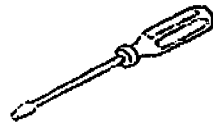
18. Study the pulley system below.



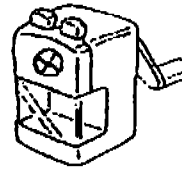
What is the smallest effort needed to lift the load?

- | | |
|----------|----------|
| (1) 20kg | (2) 30kg |
| (3) 40kg | (4) 60kg |

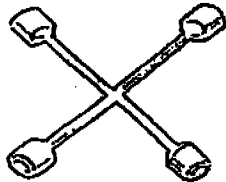
✓ 19. Which of the following are examples of a wheel and axle?



✓ A Screwdriver



✓ B Pencil sharpener



✓ C Cross-spanner

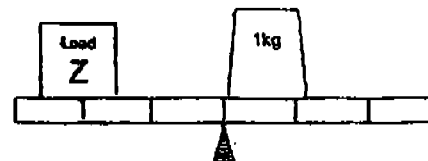
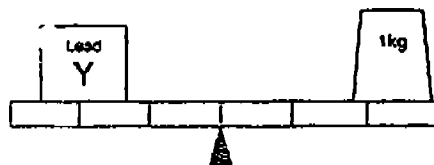
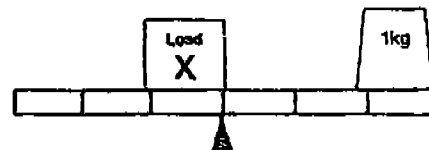
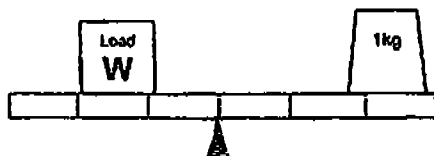


D Crowbar

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

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

✓ 20. Study the levers below.



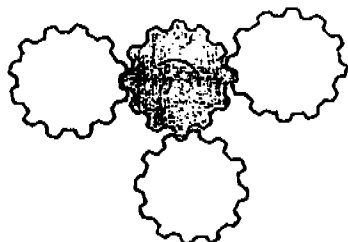
Arrange the loads W, X, Y and Z in descending order of their weights.

- (1) X, W, Y, Z
(3) Z, Y, W, X

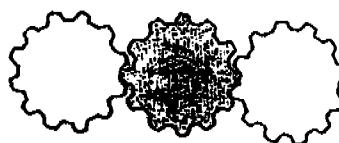
- (2) W, X, Y, Z
(4) Y, X, Z, W

21. The diagrams below show four gear systems. Which one of the systems has exactly two other gears turning in the same direction as the driving gear?

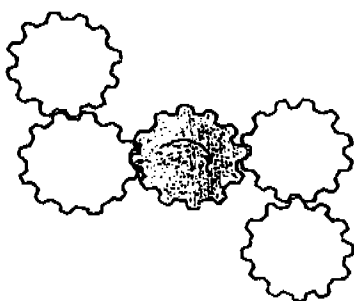
(1)



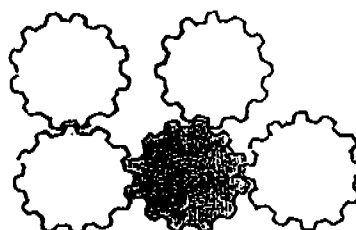
(2)



(3)

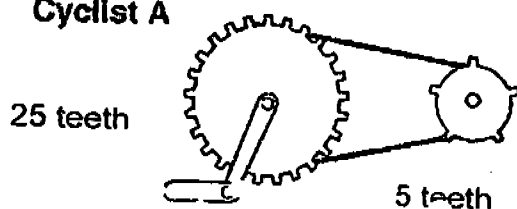


(4)

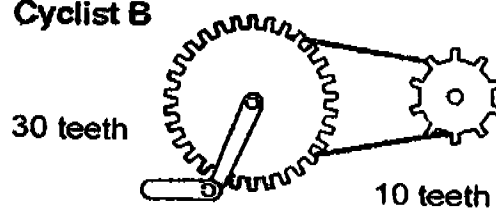


22. Study the four bicycle gears are shown below.

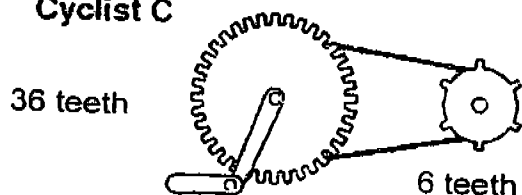
Cyclist A



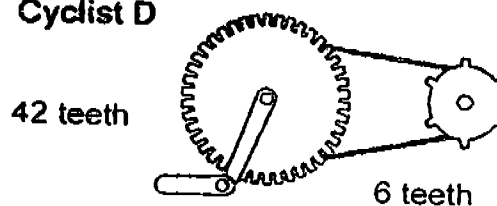
Cyclist B



Cyclist C



Cyclist D



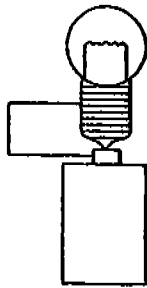
Which one of the gear systems will allow a cyclist to travel the furthest if the same effort is used?

- (1) Cyclist A
(3) Cyclist C

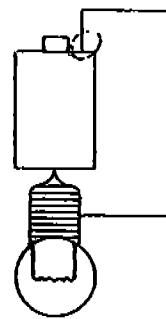
- (2) Cyclist B
(4) Cyclist D

23. In which of the following circuits will the bulb light up?

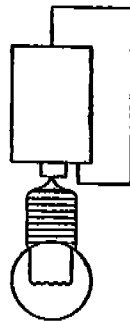
☒ A



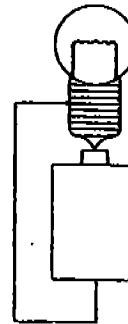
☒ B



☐ C



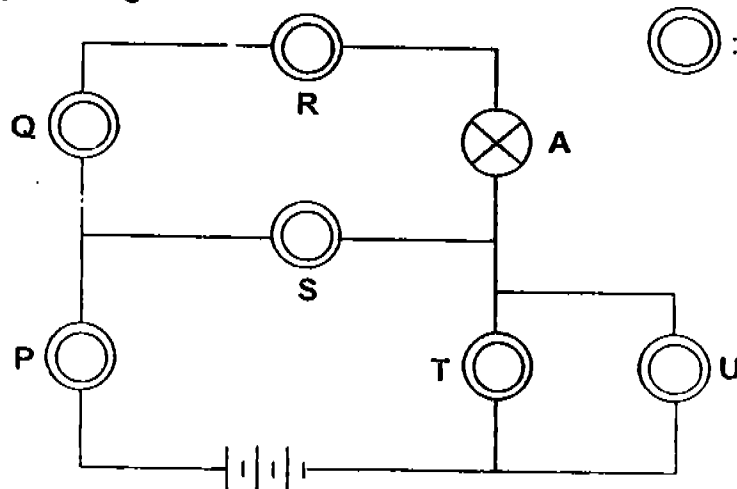
☒ D



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

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

24. Study the diagram below.



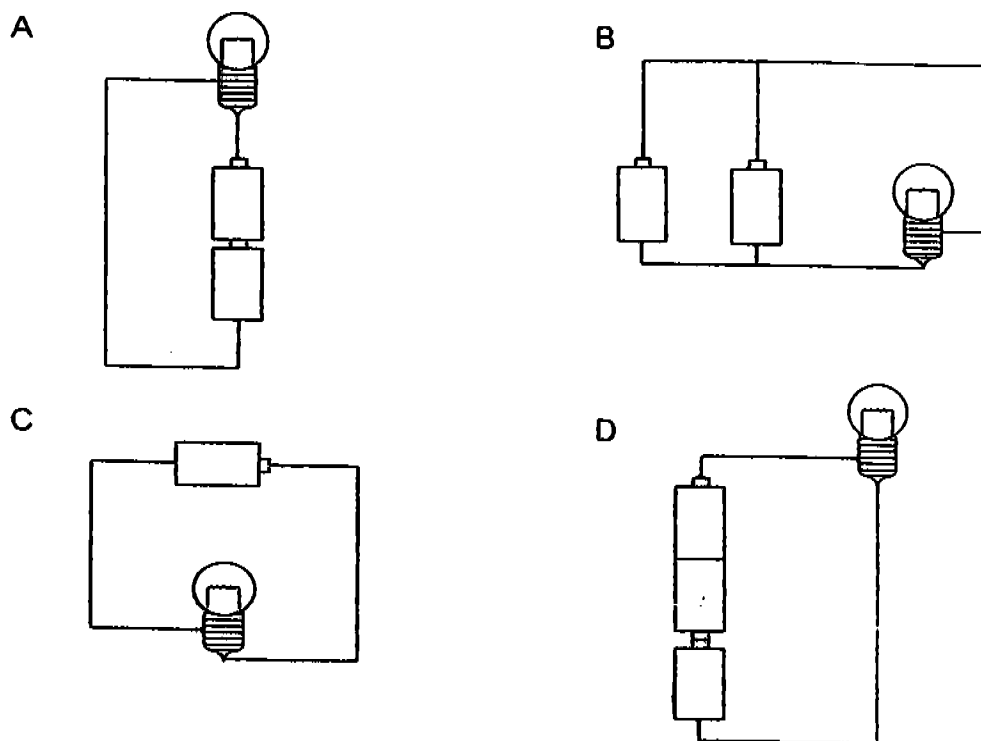
 : represents a bell

Which of the following bells will continue to ring even if Bulb A fuses?

- (1) Q and R only
(3) P, S, T and U only

- (2) P, S and T only
(4) P, Q, R, S, T and U

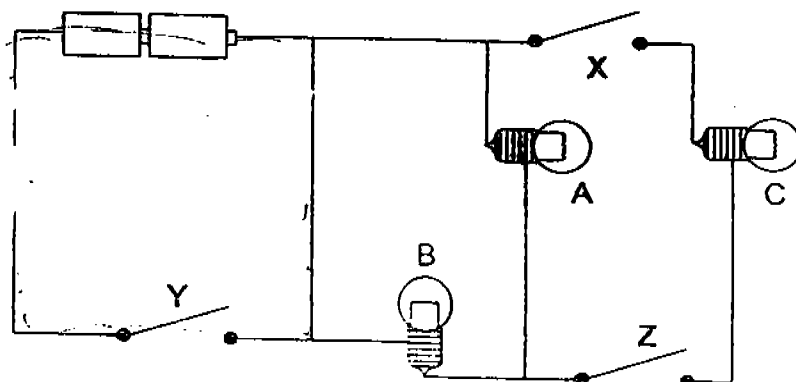
25. Study the circuits below. Identical bulbs, batteries and wires are used to set up the circuits.



In which of the above circuits will the bulbs light up with the same brightness?

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

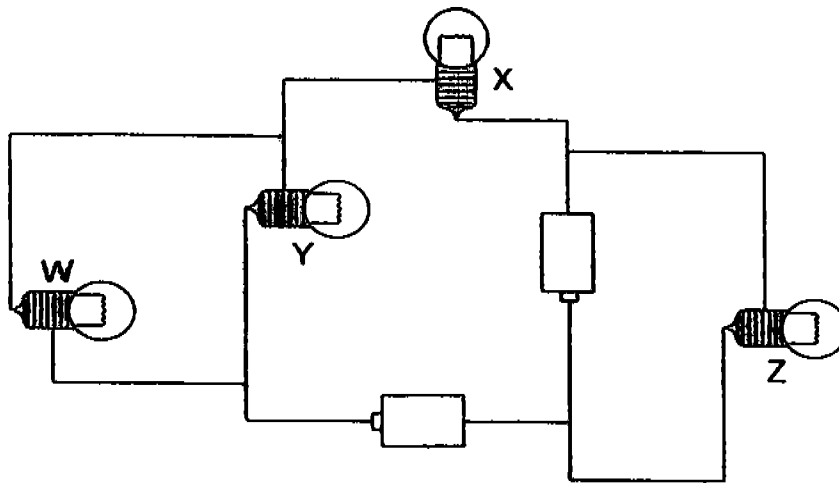
26. Study the circuit below.



If switches X and Y are closed, which bulbs will light up?

- | | |
|------------------|-----------------------|
| (1) A and B only | (2) B and C only |
| (3) A and C only | (4) None of the bulbs |

27. Faris set up the circuit below.



When one of the bulbs in the circuit became faulty, only bulb Z lit up. Which bulb was faulty?

- | | |
|-------|-------|
| (1) W | (2) X |
| (3) Y | (4) Z |

28. The brightness of a bulb depends on _____.

- ☐ A the number of wires used in a circuit.
- ☒ B the number of bulbs used in a circuit.
- ☒ C the number of batteries used in a circuit.
- ☒ D the arrangement of the batteries in a circuit.

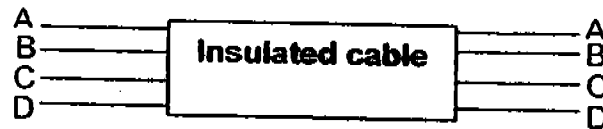
- | | |
|---------------------|---------------------|
| (1) A, B and C only | (2) A, B and D only |
| (3) A, C and D only | (4) B, C and D only |

29. Insulators of electricity are very important because _____.

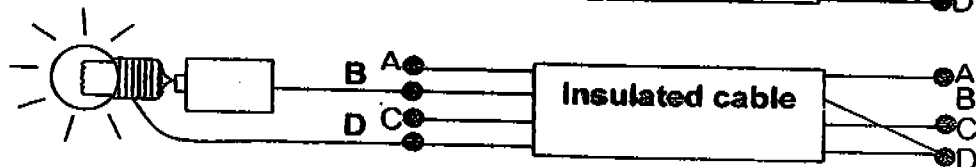
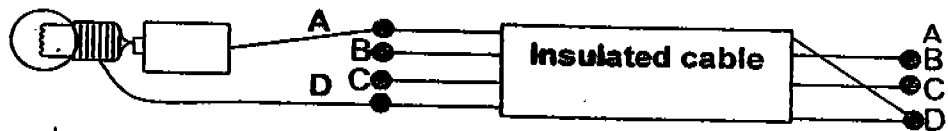
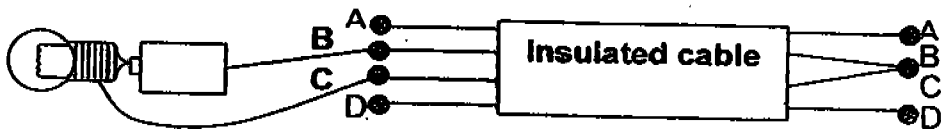
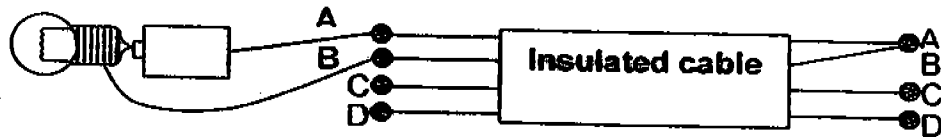
- ☐ A they heat up very quickly
- ☒ B they help to conduct electricity effectively
- ☒ C they protect us from getting electric shocks

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

30. Sheila wanted to test which of the copper wires in an insulated cable was/were broken. She used a simple circuit tester made up of a bulb connected to a battery to test the wires in the cable. She twisted the ends of the two copper wires together and connected the corresponding ends to the circuit tester.



The diagrams below show the results she obtained.



Which copper wire(s) in the cable was/were broken?

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

NANYANG PRIMARY SCHOOL

PRIMARY 5 SCIENCE

SEMESTRAL ASSESSMENT 2 2004

BOOKLET B

Date : 2 November 2004

Duration : 1 h 45 min

Name : _____ ()

Class: Primary 5 ()

Marks Scored:



| | |
|-------------|-----|
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| Booklet B : | 40 |
| Total : | 100 |

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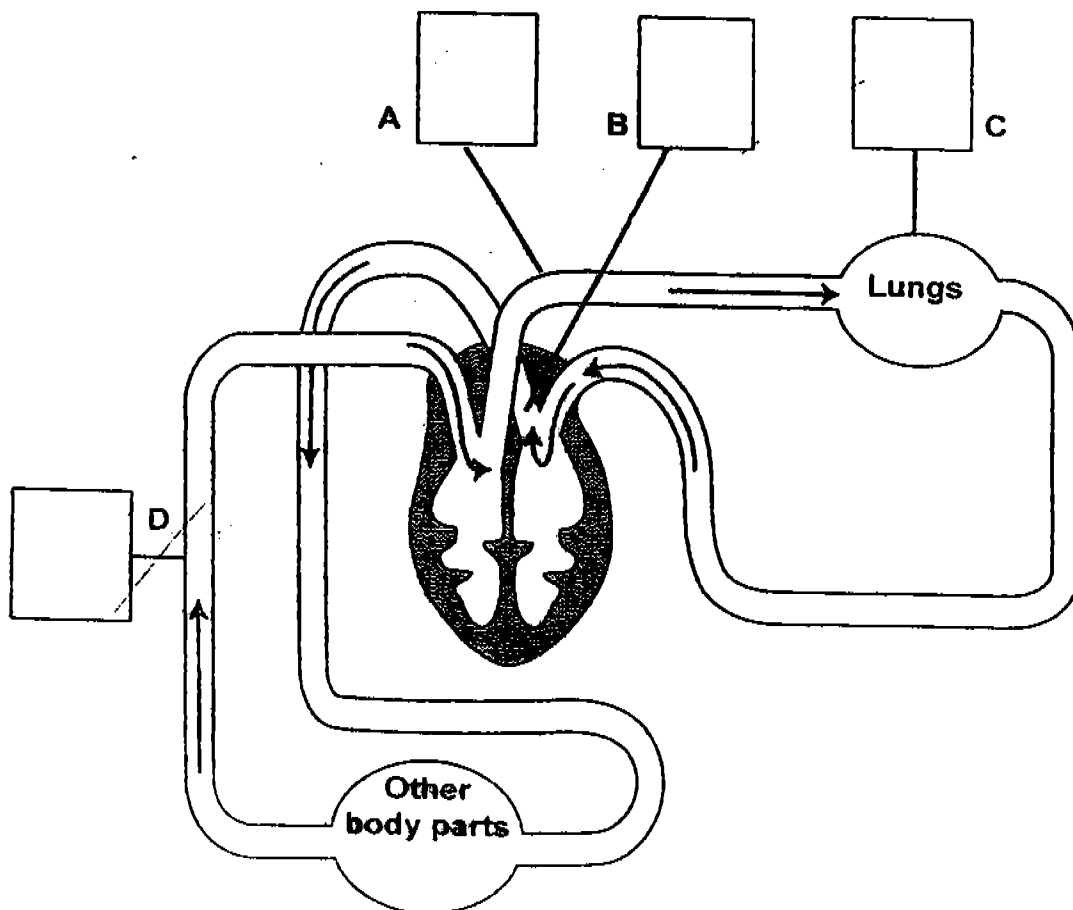
Booklet B consists of 13 printed pages including this cover page.

Section B (40 marks)

31.

The statements below describe the events related to the human circulatory system. Only **four** of the statements can be used to correctly label the diagram below. Write down the numbers of these four statements in their correct boxes. (2 m)

| | |
|----|--|
| 1. | Carbon dioxide in the blood is exchanged for oxygen. |
| 2. | The heart pumps blood rich in oxygen to the rest of the body. |
| 3. | Blood rich in unwanted substances and carbon dioxide flows back to the heart. |
| 4. | The heart pumps blood rich in carbon dioxide to the lungs. |
| 5. | During circulation in the body, the blood obtains glucose from the other body cells. |



32. The table below shows the names of ³ parts of the human skeleton. Tick the correct column(s) to describe the joints found in them.

(2 m)

| | Movable joints | Immovable joints |
|-------|----------------|------------------|
| Elbow | | |
| Knees | | |
| Skull | | |

33. Hashid is given a bar magnet and a bar F made of an unknown material as shown below.



Bar F



magnet

He is asked to determine whether bar F is a magnet. Describe the steps he should take to show that.

(2m)

34. Susan conducted an experiment as shown below. A toy car made of steel was placed on an iron sheet. She then moved the magnet under the iron sheet in the direction as shown by the arrow in Figure 1.

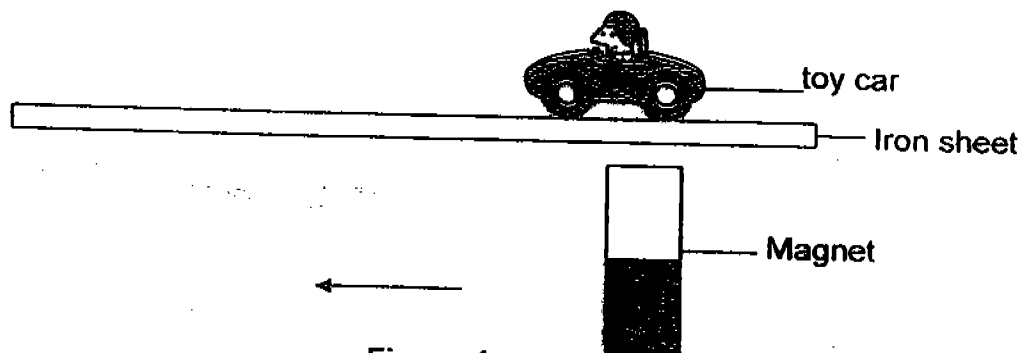


Figure 1

- (a) She noticed that the toy car did not move. Explain why. (1m)

- (b) . She repeated the experiment as shown below in Figure 2. This time, she moved the magnet which was touching the iron sheet.

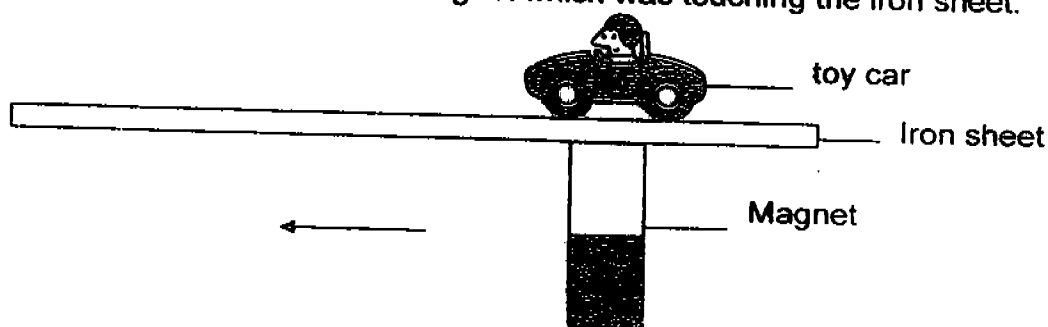
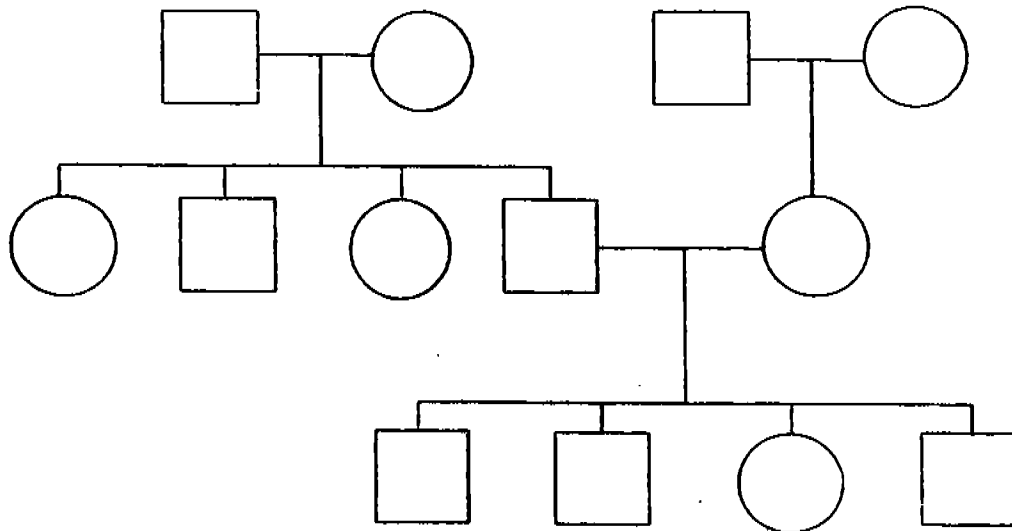


Figure 2

- (i) Describe what Susan would observe. (1m)

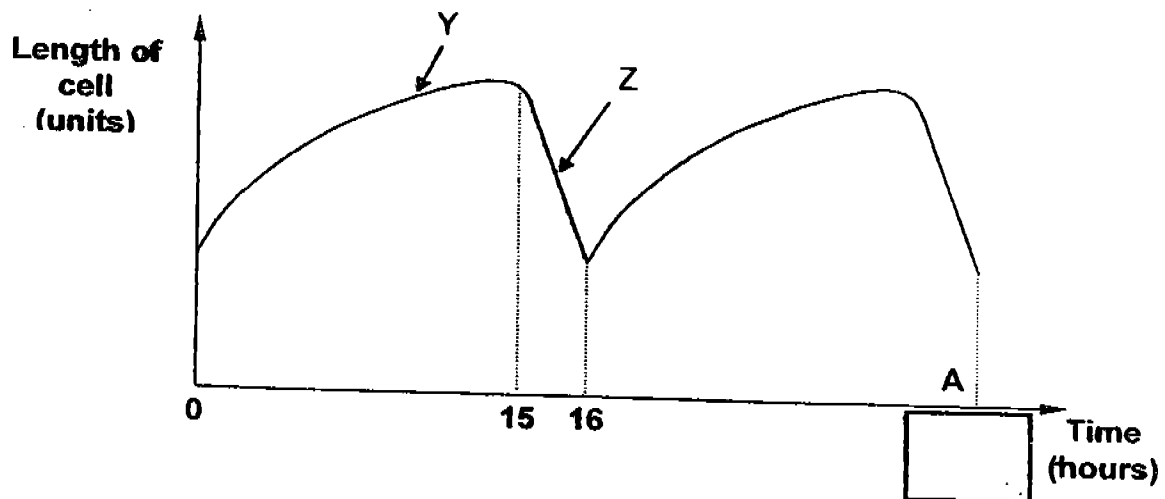
- (ii) Explain your observation for part (i). (1m)

35. Study Alicia's family tree below.



- (a) Alicia has three brothers. Label using the letter 'A' in the family tree above to show where Alicia should be. (1 m)
- (b) Her paternal grandfather is colour-blind. Colour-blindness is a disease that affects all males if their father suffers from it. How many people in the family tree suffer from this disease? (1 m)
- (c) How many children does her maternal grandparents have? (1 m)

36. Muhammad measured the length of an animal cell over a period of time. He plotted the results in a graph as shown below.

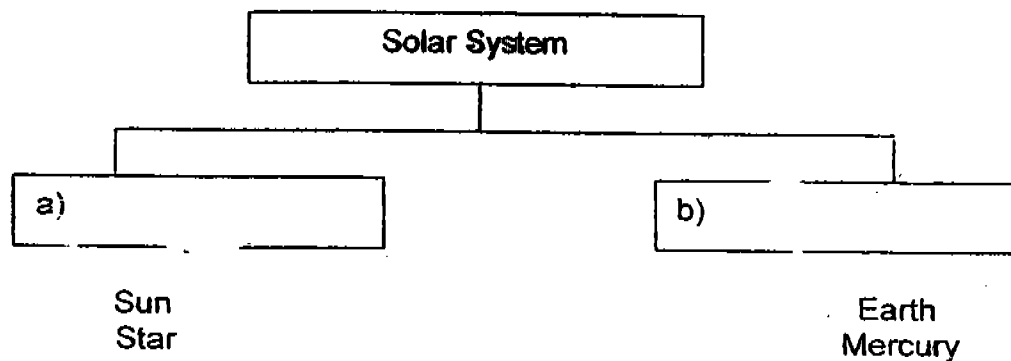


- (a) Describe the change in the length of the cell over time. (1 m)
- _____
- _____
- (b) The part labelled Z in the graph shows a drop in the length of the cell. Name the process that has occurred here. (1 m)
- _____
- (c) Describe the function of the process named in (b). (1 m)
- _____
- (d) Muhammad noted that process Z occurred again at point A. Fill in the correct value in the box provided above. (1 m)
- _____
- _____

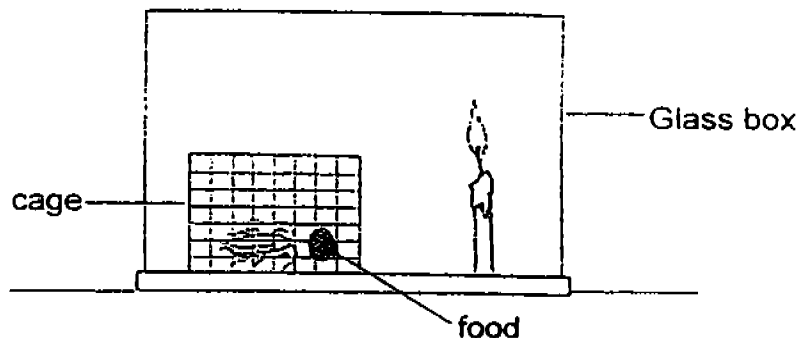
37. Fill in the blanks below with appropriate word(s). (2m)

A cycle is a _____ that repeats itself. An example of a cycle caused by the Earth rotating on its own axis is _____

38. Study the classification table below. Give a suitable heading to each of the boxes. (2m)

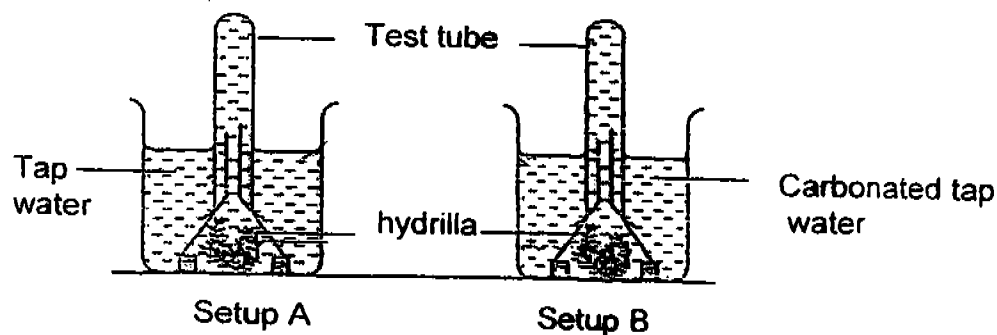


39. Amos set up an experiment as shown below.



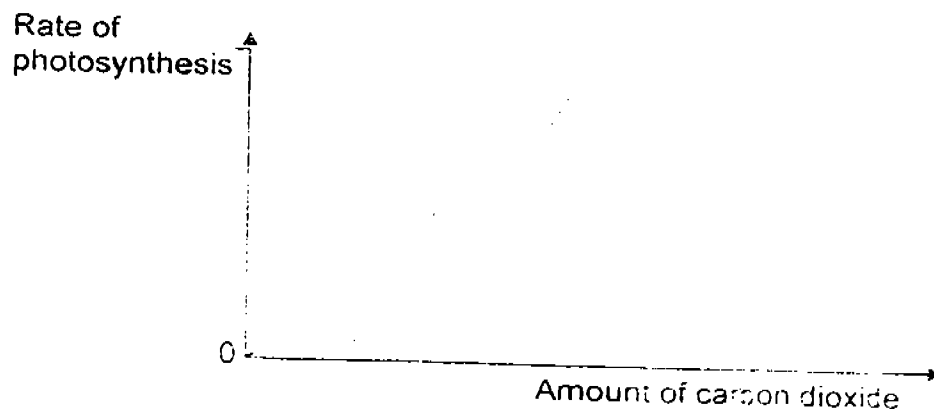
After one day, he noticed that the cockroach died. Explain his observation. (2m)

40. Anna carried out an experiment as shown below. She placed both the setups A and B by the window. She hypothesised that the more carbon dioxide a plant is given, the higher its rate of photosynthesis.



- (a) What should Anna measure to show that her hypothesis is correct? (2m)

- (b) Draw a line graph below to show the relationship between the amount of carbon dioxide and the rate of photosynthesis of the plant. (2m)



41. Sam conducted an experiment as shown below. He hammered a nail into a wooden block and wound a rubber band round the nail. He then lifted the wooden block by the rubber band as shown in Figure 1. Next, he pulled the same block up on a glass surface using the rubber band as shown in Figure 2. He recorded the extension of the length of the rubber band in both setups.

Figure 1

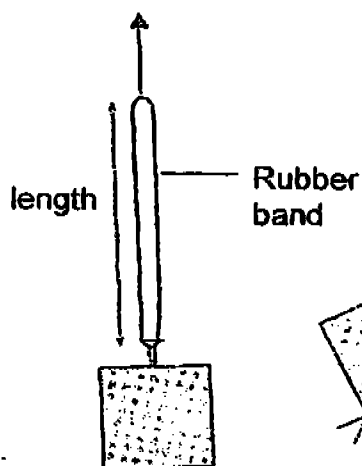
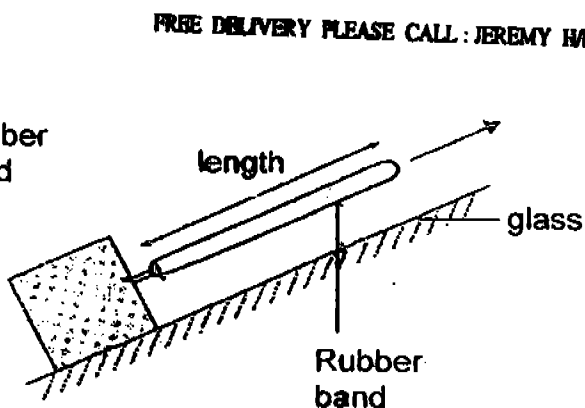


Figure 2

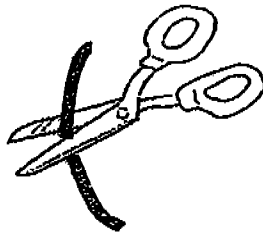


- (a) What observations would Sam make about the rubber band in both the experiments? (1m)

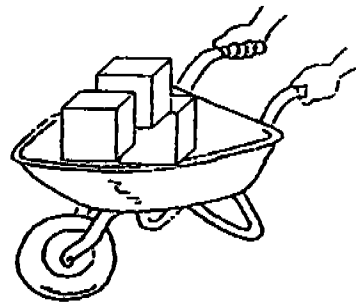
Sam conducted the above experiment in Figure 2 several times and found the average extension.

- (b) Explain why he repeated the same experiment a few times. (1m)

42a. Study the diagrams shown below.



Scissors

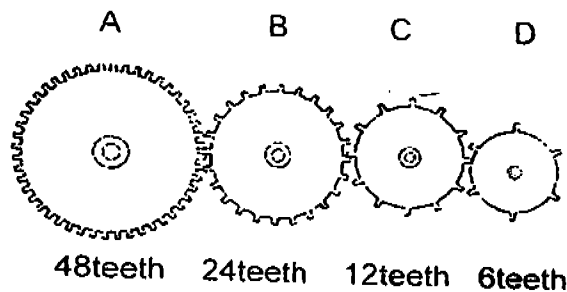


Wheel barrow

- (i) State a similar advantage in using both the machines. (1m)

- (ii) State a similar disadvantage in using both the machines. (1m)

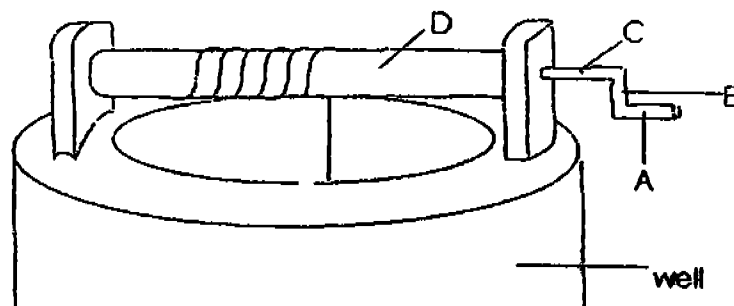
- (b) Four gears, A, B, C and D have been arranged to form a gear train as shown below.



- (i) If Gear A turns 2 rounds, how many rounds would Gear C turn? (1m)

- (ii) In order for Gear D to move thrice faster, how many teeth must Gear D have? (1m)

43. Farmer Lim draws water from a well using the windlass as shown below.



He wants to make his work easier. What are two changes he can make to the windlass? (2m)

44. Complete the circuit below by drawing wires to connect the 3 batteries to light up the bulb with the maximum brightness. (2 m)



45. Roxanne carried out an experiment to identify conductors of electricity. She set up an open circuit and used four different objects, W, X, Y and Z, to complete the circuit, one at a time. She tabulated her results as follows.

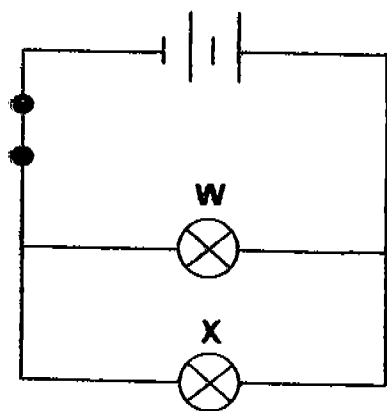
| Objects | Results |
|---------|---------------------------|
| W | The bulb lights up |
| X | The bulb is dim |
| Y | The bulb did not light up |
| Z | The bulb lights up |

In the space provided, put a tick in the correct column for each statement.

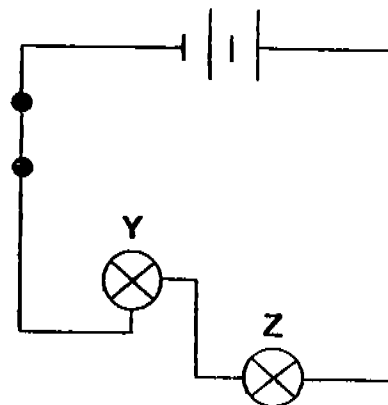
(2 m)

| | Statements | True | False | Not possible to tell |
|-----|--|------|-------|----------------------|
| (a) | Object Y is a conductor of electricity. | | | |
| (b) | Object X is a poorer conductor of electricity than W. | | | |
| (c) | If object W was replaced with object Z, the brightness of the bulb will be the same. | | | |
| (d) | If object W was placed in series with object X in the same circuit, the bulb will be brighter. | | | |

46. Study the two circuit diagrams below.



Circuit A



Circuit B

- (a) What would happen to bulbs W and Z in circuits A and B respectively if bulb X and bulb Y were removed? (1 m)

Bulb W: _____

Bulb Z : _____

- (b) Which type of circuit, A or B, is usually used in connecting lamps in homes? Why? (1 m)

SA2

1) 2

28) 4

31) A : 4 B : 2 C : 1 D : 3

2) 3

29) 3

32)

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

3) 1

30) 3

4) 4

33) He should use the magnet and try to attract Bar F. If it repels, it is a magnet. If it attracts, it could be a magnet or some metal, so the only way to prove it is to see if it repels.

5) 4

6) 4

7) 1

34) a) Magnetism cannot pass through the iron sheet.

8) 2 -

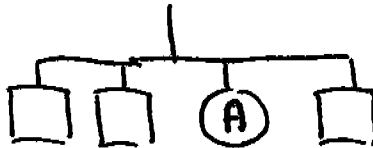
b) i) The toy car moved.

9) 2

ii) The iron sheet became a temporary magnet.

10) 2

35) a)



11) 2

12) 1

b) 6 people could be affected

13) 4

c) 1 child.

14) 4

36) a) It increases until the 15th hour and then drops.

15) 1

b) The process is cell division.

16) 4

c) Replace the dead cell.

17) 1

d) 32

18) 1

37) pattern

19) 3

day and night.

20) 1

39) The cockroach has no oxygen to respire as the candle used up the oxygen of breathing.

21) 3

22) 4

38) a) give off own light

23) 3

b) reflect the light

24) 3

40) a) If there is a lot of oxygen, the plant is making food faster than the other plant used as a control.

25) 4

26) 4

b)

27) 2



41) a) The length of rubber band in figure 2 will be shorter than figure 1.

b) He could have used different amount of forces so he wanted to find the average.

42) a) i) They both use smaller effort to overcome a bigger load.

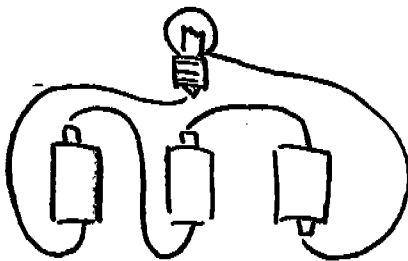
ii) Both travel a longer distance than the load.

b) i) 8

ii) 4 teeth.

43) B is longer/D narrower.

44)



45)

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

46) a) Bulb W : Will still light up..

Bulb Z : Will not light up.

b) Allow you to control electrical bulbs independently.