

Methodist Girls' School (Primary)

2004 End-of-Year Examination

SA2

Primary 4

SCIENCE

BOOKLET A

Name: \_\_\_\_\_ ( )

Class: \_\_\_\_\_

Total time for Booklets A and B : 1 hour 30 minutes

Booklet A: 60 marks

Methodist Girls' School (Primary)

2004 End-of-Year Examination

Primary 4

SCIENCE

BOOKLET B

Name: \_\_\_\_\_ ( )

Class: \_\_\_\_\_

Section A : / 60

Section B : / 40

**Total : / 100**

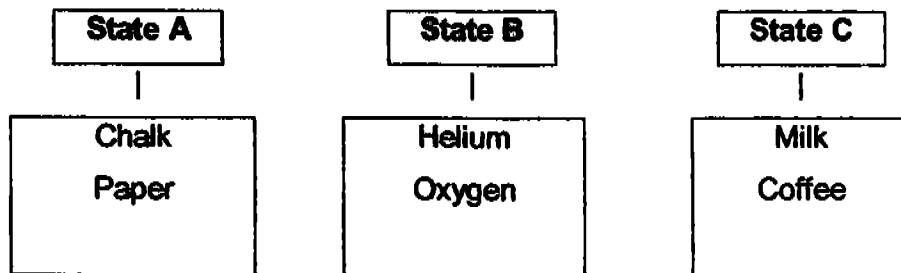
Total time for Booklets A and B : 1 hour 30 minutes

Booklet B: 40 marks

**Section A: Multiple-choice questions**

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) and shade the corresponding number in the OAS provided.

1. Study the classification chart below.



Which of the following can be placed according to the states shown above?

	<u>State A</u>	<u>State B</u>	<u>State C</u>
(1)	Ink	Carbon dioxide	Tea leaves
(2)	Ice cubes	Light	Water vapour
(3)	Pen	Steam	Mercury
(4)	Chalk	Kerosene	Sugar cubes

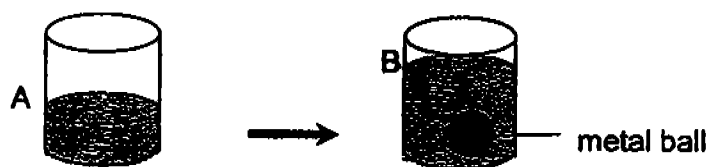
2. Which of the following statements on the properties of solids, liquids and gases is/are true?

- A: Not all of them can be seen.
- B: All of them can be compressed.
- C: Only gases do not have fixed shapes.
- D: Both liquids and gases do not have fixed volume.

- (1) A only.
- (2) A and D only.
- (3) A, C and D only.
- (4) All of the above.

Go to page 2...

3. An experiment was set up as shown below. At the start of the experiment, the water level was at A. After a pupil dropped a metal ball into the beaker of water, the water level rose to B. What does this show?



- (1) Water can be compressed.  
(2) Water does not have a definite volume.  
(3) The metal ball takes up space and can be compressed.  
(4) The metal ball takes up space and has a definite volume.
4. Water falls from the sky as rain. Where does it go to?
- A: It collects in ponds and reservoirs.  
B: It collects in rivers and seas.  
C: It goes into the soil.  
D: It is absorbed by the plants.
- (1) A and B only  
(2) B and D only  
(3) A, B and C only  
(4) All of the above.
5. Which of the following statements about the water cycle is not correct?
- (1) Rain falls when the clouds get too heavy.  
(2) Water vapour condenses to form clouds.  
(3) Evaporation of water takes place all the time.  
(4) Water vapour gets warmer as it rises.

Go to page 3...

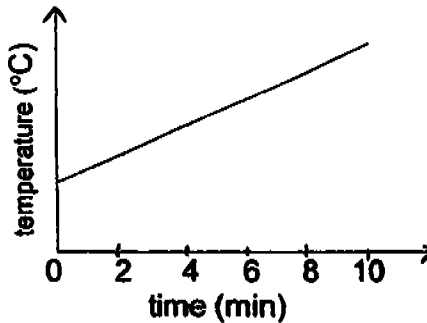
6. Which of the following processes take place due to heat gain?

- A. Water evaporating
- B. A wet towel drying up
- C. Hot milk cooling down
- D. Frozen meat being thawed

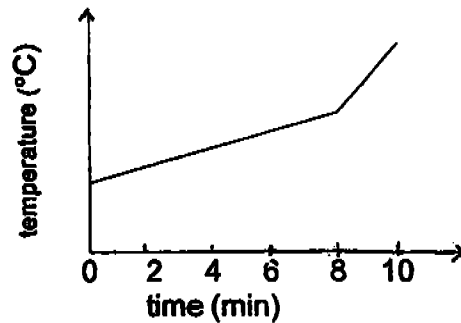
- (1) A and B
- (2) B and C
- (3) A, B and D
- (4) All of the above

7. Sarah heated a beaker of tap water. She measured the temperature of water for 10 minutes. The water boiled after 8 minutes and she left it to boil. She then sketched a line graph to show the results. Which one of the following is possibly the graph?

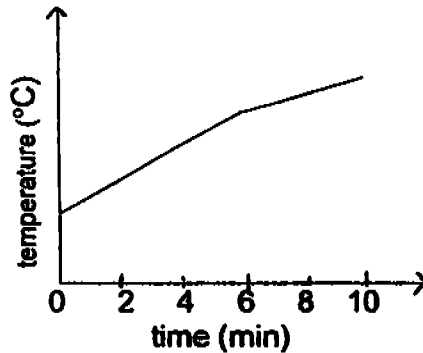
(1)



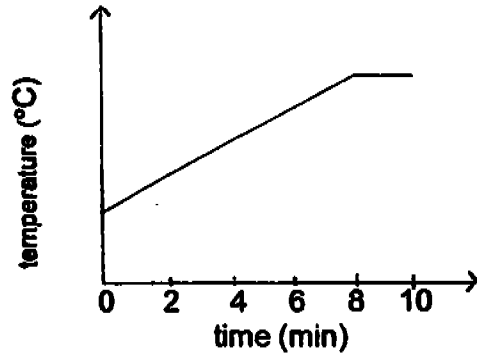
(2)



(3)



(4)

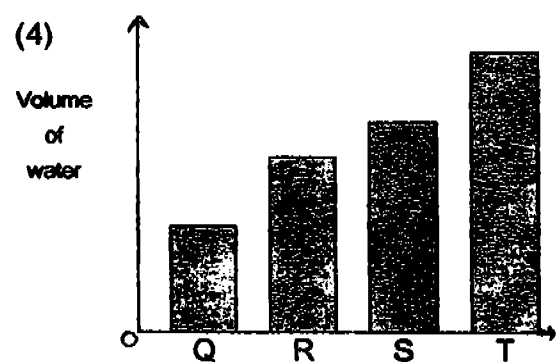
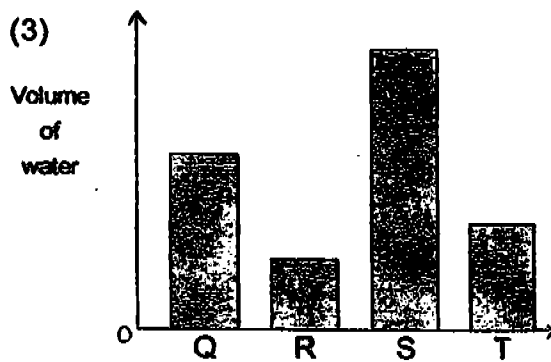
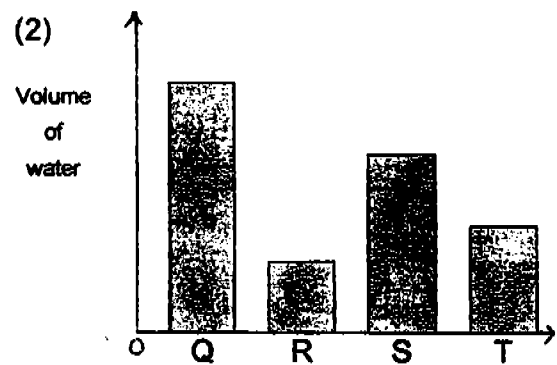
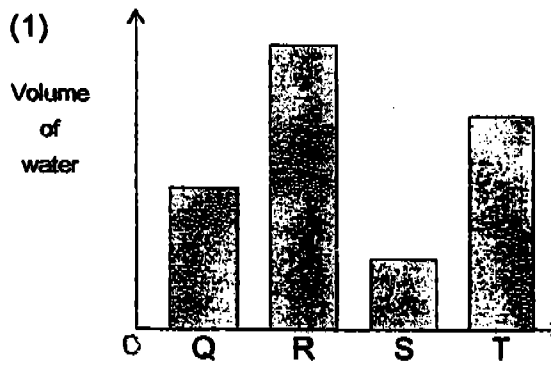


Go to page 4...

8. Four identical containers were filled with 20 ml of water each. The four containers were left in four different places with different conditions as shown in the table below.

Q	windy and cloudy 3
R	windy and sunny 1
S	cloudy but not windy 4
T	sunny but not windy 2

Which one of the following graphs shows the volume of the water in Q, R, S and T after 8 hours?



Go to page 5...

9. Which of the following examples shown below gives out heat as well as light?



(Not switched on)

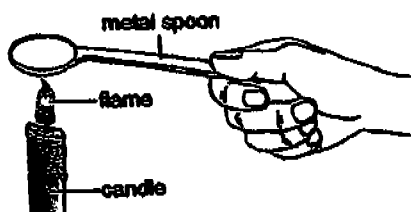
A

B

C

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

10. Ali held a metal spoon over a candle flame to see if it would burn.



This was not a wise thing to do because the heat from the flame may

\_\_\_\_\_.

- (1) make the spoon so hot that it bursts into flames
- (2) be conducted through the air and burn his hands
- (3) make the hot wax run down the spoon to his hands
- (4) travel through the metal spoon and burn his fingers

Go to page 6...

11. Study the diagram below carefully.



The bottle of hot milk was left in the basin to cool down in a room of temperature 27°C.

Which one of the following sets of data best describes the temperature of the water in the basin over time?

	<b>Milk in the bottle</b>	<b>Water in the basin</b>
(1)	gains heat	gains heat
(2)	loses heat	loses heat
(3)	gains heat	loses heat
(4)	loses heat	gains heat

12. We see roses as red in colour because the roses \_\_\_\_\_.

- (1) reflect all the light
- (2) absorb all the light
- (3) absorb the red colour and reflect all other colours
- (4) absorb all colours and reflect only the red colour

Go to page 7...

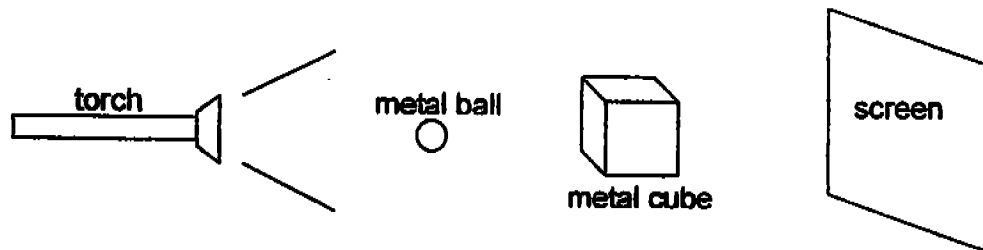


13. Which of the following gives off its own light?

- A: Moon
- B: Sun
- C: Stars
- D: Diamonds





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

14. A screen, a metal ball, a metal cube and a torch are placed as shown in the setup below.



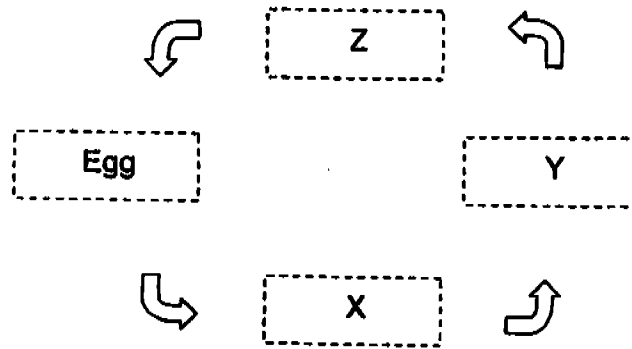
When the torch is switched on, a shadow is formed on the screen.

Which one of the following shows the correct shadow formed on the screen?

- (1)  screen
- (2)  screen
- (3)  screen
- (4)  screen

Go to page 8...

15. The diagram shows the different stages in a life cycle of a butterfly.



What do the stages X, Y and Z represent?

	X	Y	Z
(1)	adult butterfly	pupa	caterpillar
(2)	pupa	caterpillar	adult butterfly
(3)	caterpillar	pupa	adult butterfly
(4)	adult butterfly	caterpillar	pupa

16. The air we breathe out contains more \_\_\_\_\_ than the air we breathe in,

- A: oxygen  
 B: moisture  
 C: carbon dioxide

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

Go to page 9...

17. Which one of the following gives the correct order in which oxygen is transported in our body?

- (1) all parts of the body → heart → lungs → heart
- (2) heart → lungs → other parts of the body → heart
- (3) heart → other parts of the body → lungs → heart
- (4) heart → other parts of the body → heart → lungs

18. Which of the following is/are carried by blood?

- A. Water
- B. Oxygen
- C. Carbon dioxide
- D. Digested food

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

19. When we eat food, it passes through our body from one part to another. These parts, in order, are \_\_\_\_\_.

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

Go to page 10...

20. The human circulatory system consists of the \_\_\_\_\_ .

- A: heart
- B: lungs
- C: blood vessels
- D: blood

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

21. Which one of the following are functions of stomata?

- A: The exchange of gases in the plant takes place through these openings.
- B: Excess water vapour can leave through them, helping to draw water up the plant.
- C: They transfer food made in the leaves to the roots.
- D: They absorb minerals and transport them to the other parts of the plants.

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

Go to page 11...

22. Ivan compared a plant and a salmon as shown in the table below:



	<u>Plant</u>	<u>Fish</u>
A:	Does not take in oxygen	Take in dissolved oxygen
B:	Has tiny tubes	Has blood and blood vessels
<input checked="" type="checkbox"/> C:	Has stomata	Has gills
D:	Has leaves to make food	Does not need to take in food

In what way is the transport system of a plant and fish similar?

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

23. The leaf in the picture has \_\_\_\_\_.

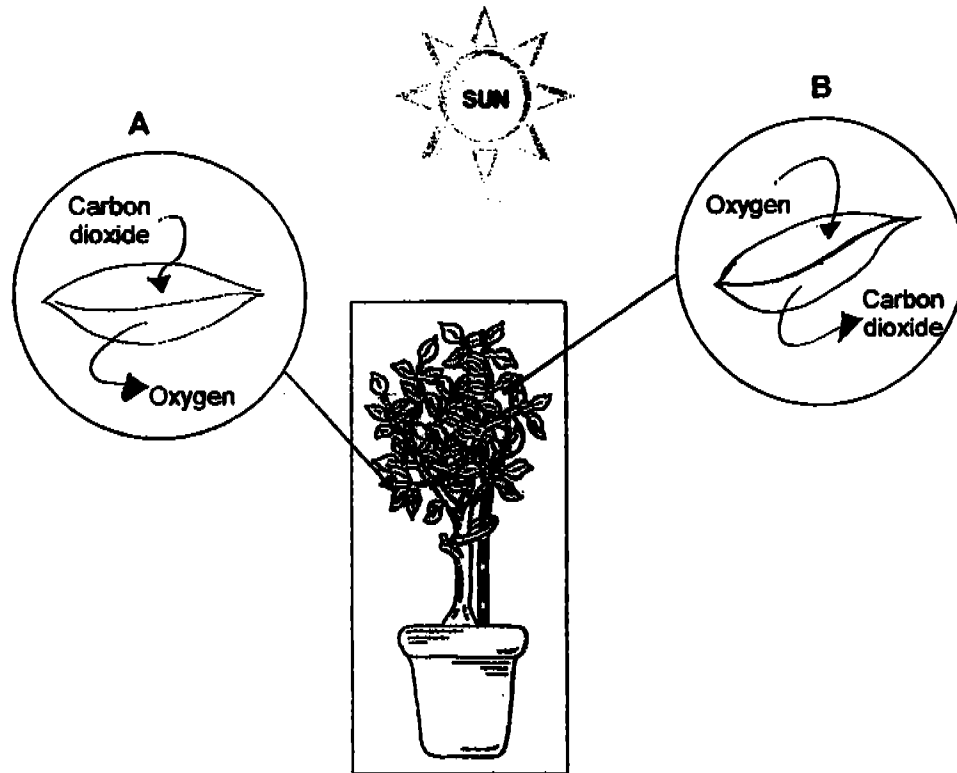
- A. entire edge
- B. toothed edges
- C. lobed shaped



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

Go to page 12...

24. Study the diagram below.



Which one of the following is true of processes A and B?

- (1) A and B take place all the time.
- (2) A takes place all the time.
- (3) B takes places all the time.
- (4) A takes place only at night.

25. Which of the following materials is a material that was 'never alive'?

- (1) Silk
- (2) Clay
- (3) Cotton
- (4) Leather

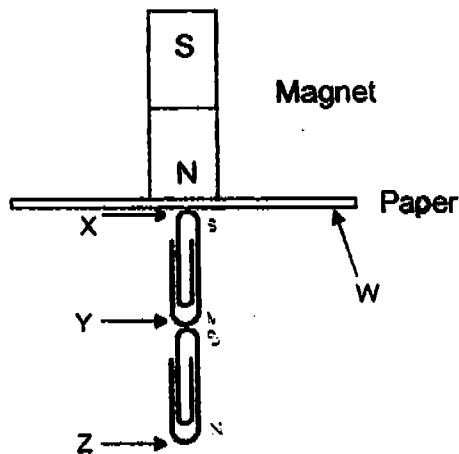
Go to page 13...

26. Which of the following statements are not true?

- A. Not all magnets are made of iron.
- B. All forms of magnets have two poles.
- C. All forms of magnets are natural magnets.
- D. Like poles of magnets attract while unlike poles repel.

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

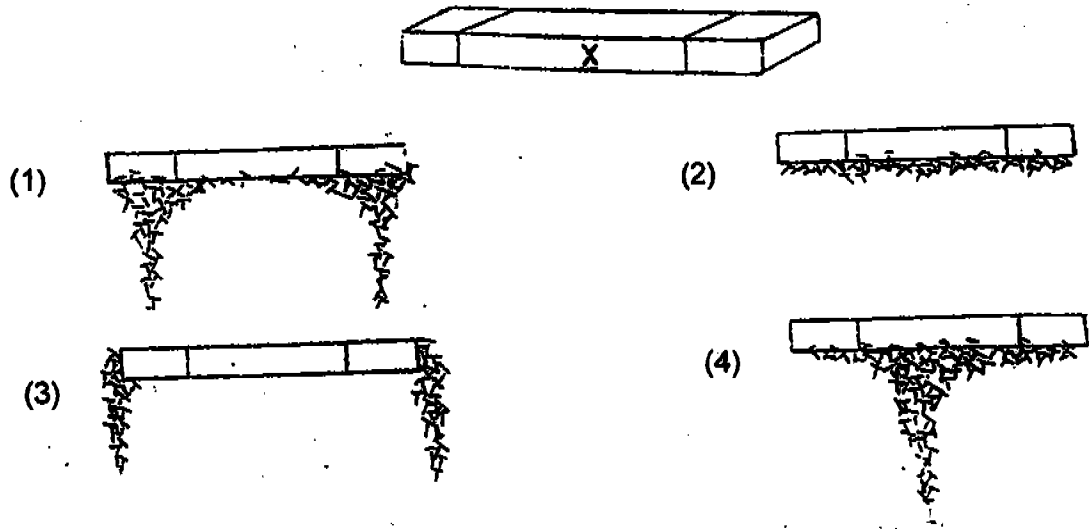
27. Study the diagram below. Which of the parts labelled are N-poles?



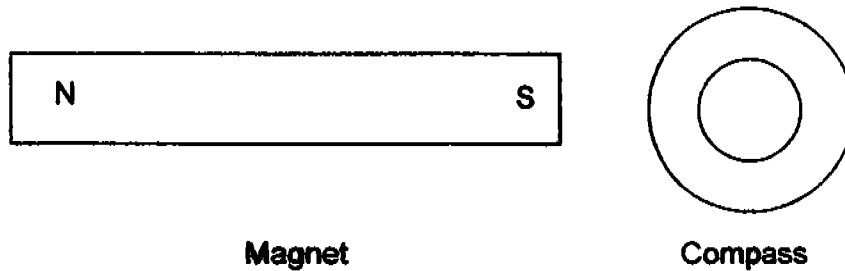
- (1) W and Y only
- (2) X and Z only
- (3) Y and Z only
- (4) W, Y and Z only

Go to page 14...

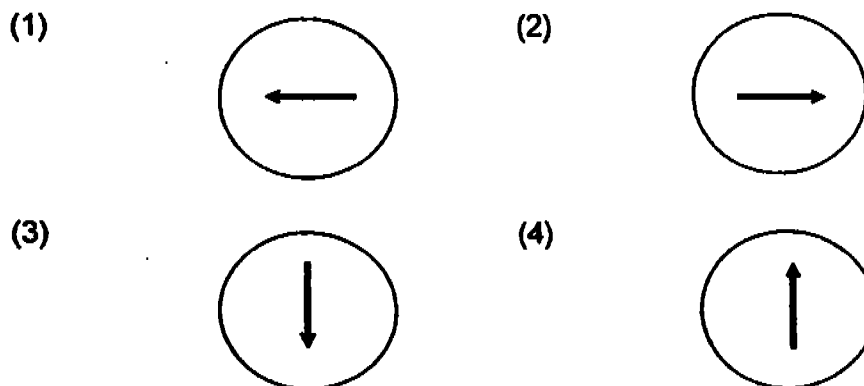
28. Adam lowered a bar of magnet into a heap of iron filings. He then lifted the magnets up and recorded what he saw. Which one of the following diagrams would show how the iron filings were attracted to the magnet?



29. A small compass is placed beside a bar magnet as shown below.



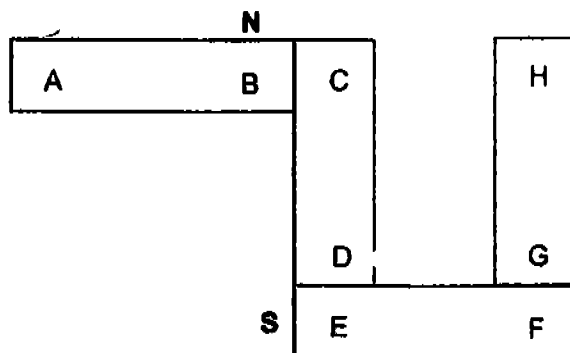
In which direction will the compass needle point?



Go to page 15...

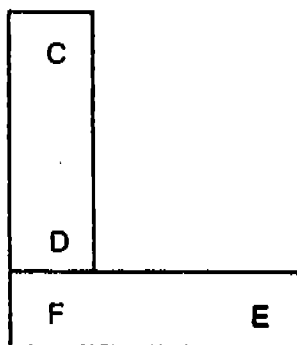


30. Four pieces of magnets are put together and their ends are marked as shown in the diagram below.

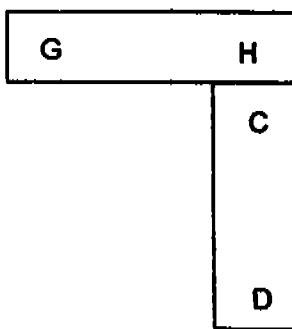


Which one of the following diagrams shows a correct interaction when 2 of the magnets are brought close together?

(1)



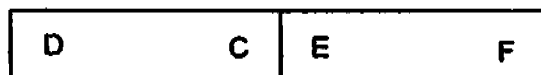
(2)



(3)



(4)



— End of Section A —


NAME : \_\_\_\_\_

DATE : \_\_\_\_\_

CLASS : \_\_\_\_\_

SUBJECT :

Empty box for subject name.

EXAMPLE: IF YOU THINK THE 2ND OPTION IS THE CORRECT ANSWER SHADE THE OVAL LIKE THIS :  


WRITE

SHADE OVALS

I  
N  
D  
E  
X  
  
N  
U  
M  
B  
E  
R

1



21



41

2



22



42

3



23



43

4



24



44

5



25



45

6



26



46

7



27



47

8



28



48

9



29



49

10



30



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11



31

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12



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38

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19



39

59

20



40

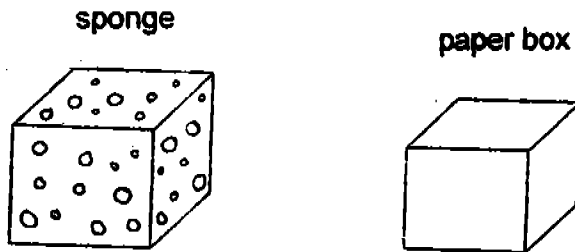
60

SCORE: 56/60 ( 93.33% )

**Section B: Open-ended questions (40 marks)**

**Read the questions carefully and write the answers in the blanks provided.**

26. Karen wants to pack a piece of sponge of sides 4 cm each into a paper box of sides 3cm.



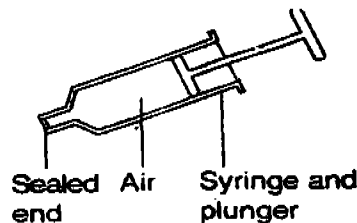
Do you think it is possible for her to do so? Explain your answer. [2 marks]

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27. Study the diagram below.



Can the plunger be pushed in any further? Explain your answer. [2 marks]

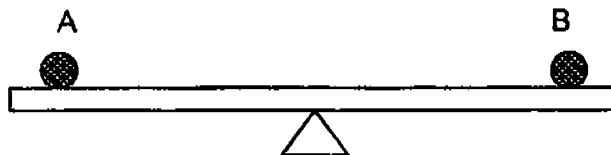
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Go to page 17...

28. Eliza carried out an experiment with 2 identical balls of cotton thread (A and B), a ruler and a triangular support.



At first, the balls of cotton thread balanced each other. Then, one of the balls, B, was soaked in water.

- (a) If Eliza put B back to the same position, what would most likely be observed?  
[1 mark]

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- (b) What could Eliza conclude from this experiment? [1 mark]

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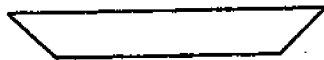
Go to page 18...

29. Sheryl placed two similar dishes of water at different places. There is the same amount of water in each of these dishes initially. After a day, she discovered that one dish had less water than the other.

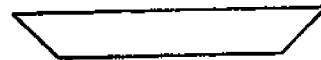
Location :

In a closed metal cabinet  
placed at a corner of a classroom.

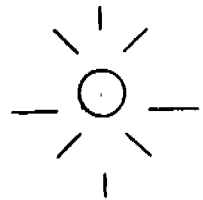
Under the hot sun outside the classroom.



*Dish A*



*Dish B*



- (a) Which dish would contain less water? [1 mark]

\_\_\_\_\_

- (b) Explain your answer for (a). [2 marks]

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Go to page 19...



30. (a) How are clouds formed? [2 marks]

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(b) How does the wind affect the rate of evaporation? [1 mark]

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31. In 1989, a huge oil spill from the Exxon Valdez tanker spread over 1600km of the Alaskan coast.

State 2 possible consequences of such an oil spill. [2 marks]

(i) 

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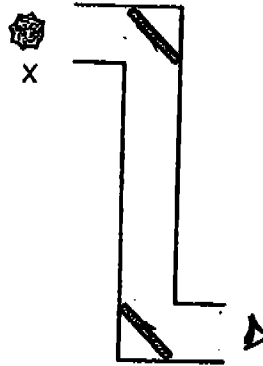
(ii) 

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Go to page 20...

32. A periscope can reflect and change the direction of light.

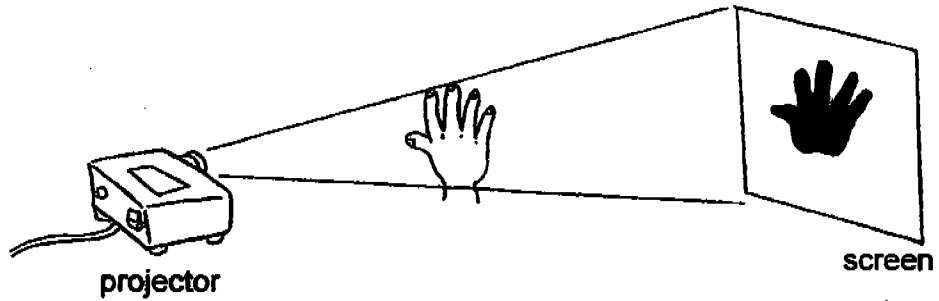


Ravi can see X with a periscope. Draw lines with arrows in the above diagram to show how light falling on X is reflected to Ravi's eye.

(Note: Use lines to represent the path of light and arrows to show the direction of light.) [1 mark]

Go to page 21...

33. Glen placed his hand in front of a projector as shown in the following set-up.



(a) Why was the shadow of Glen's hand cast on the screen? [1 mark]

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(b) What happens to the shadow if Glen moves his hand nearer to the screen? [1 mark]

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34. Study the following items. Classify them in the table below. [2 marks]

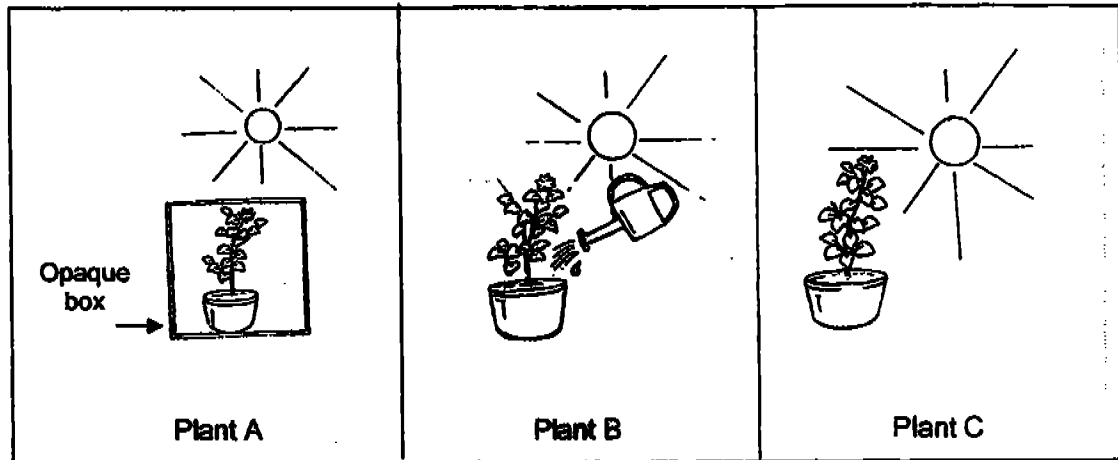
heat	wind	light	shadow
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A form of energy	Not a form of energy

to page 22...



35. Plants A, B and C are of the same kind. All three pots are placed in the garden. However, Plant A is placed in an enclosed, opaque box. Plants A and B are watered everyday whereas Plant C is not given any water. The plants are left in the garden for a week.



- (a) Which plant will grow the best? [1 mark]

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- (b) Explain your answer in (a) [2 marks]

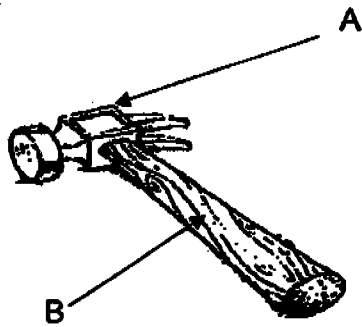
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Go to page 23...

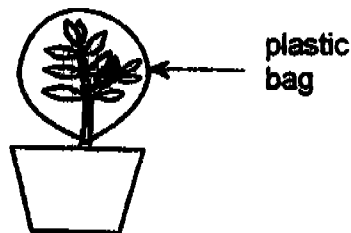
36. Name two different materials that are usually used to make the hammer.  
[1 mark]



(a) \_\_\_\_\_

(b) \_\_\_\_\_

37. Aiman tied a plant in a plastic bag as shown. He checked the bag the next day.



- (a) What do you think he would observe the next day? [1 mark]

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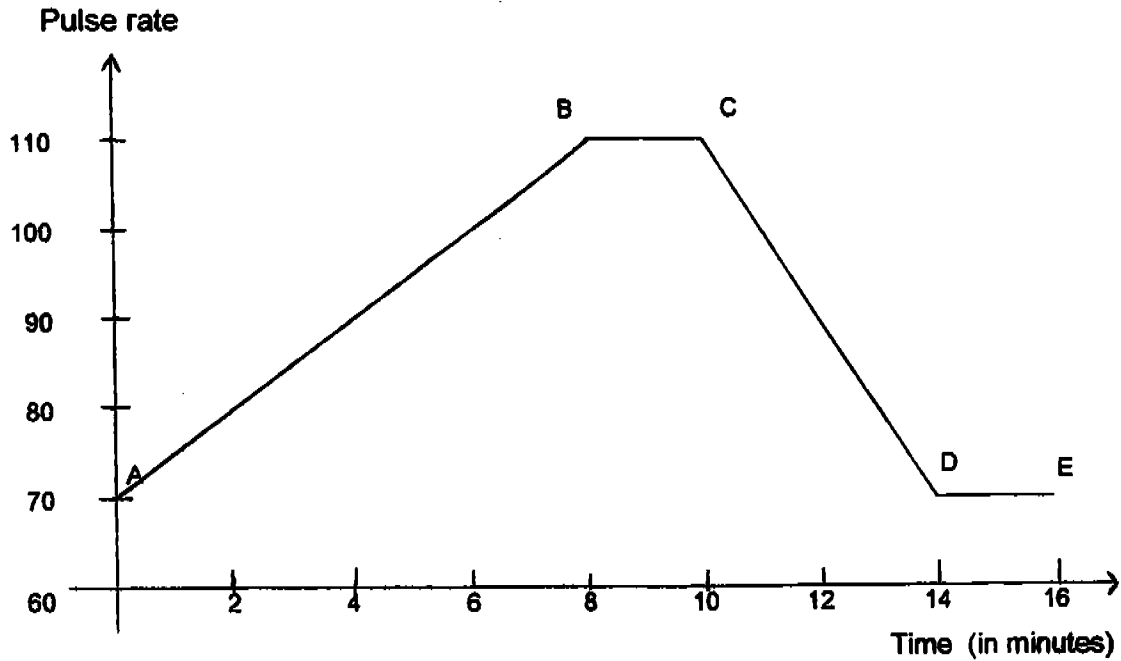
- (b) Explain his observation. [1 mark]

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Go to page 24...

38. The graph below shows the pulse rate of Angela over a period of time. She exercised for a short while during this period. The information is recorded in the graph below.



- (a) Look at the graph carefully. What is Angela's normal pulse rate? [1 mark]

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- (b) What does CD represent? [1 mark]

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Go to page 25...

39. Write true (T) or false (F) for the following. [3 marks]

- (a) Our windpipe removes the oxygen in the air flowing through it. ( )
- (b) Air enters our body through our nose or mouth. ( )
- (c) Blood vessels in our lungs take in oxygen only. ( )
- (d) When we breathe in, only oxygen is taken into our lungs. ( )
- (e) The air we breathe out contains more oxygen than the air we breathe in. ( )
- (f) When we breathe in, air travels through our windpipe before entering our lungs. ( )

40. Mr Ravi wants to take his family for a holiday. He decides to travel to a place that has very low temperatures.

(a) What kind of clothing should Mr Ravi and his family take with them? [1 mark]

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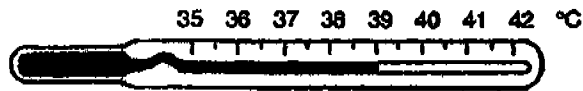
(b) Explain your answer in (a). [2 marks]

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41.



- (a) Daniel took his body temperature with the thermometer shown above. What was the reading shown in the thermometer? What does this show? [2 marks]

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- (b) He wanted to sterilise the bulb of the thermometer so he put it in boiling water. What would happen to the thermometer? Why? [2 marks]

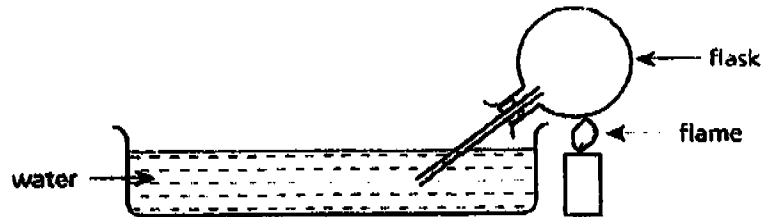
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Go to page 27...

42. Sufen inverted an empty flask attached with a hollow tube in a basin of water. She then heated the flask.



- (a) What did Sufen see after a while? [1 mark]

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- (b) Explain why that happened. [2 marks]

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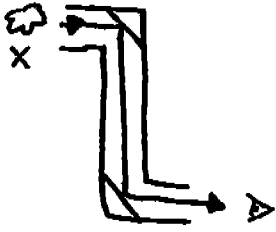
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--- End of paper ---

Have you checked your work?

METHODIST GIRLS SCHOOL (PRIMARY)  
2004 END OF THE YEAR EXAMINATION  
PRIMARY 4 SCIENCE

S/A 2

- 1) 3            28) 1    29) 1    30) 2
- 2) 1            26) Yes. The sponge has air spaces in it. Therefore, it can be compressed.
- 3) 4            27) Yes. Air can be compressed.
- 4) 4            28) a) B will go down at the balance.  
                  b) Water has mass.
- 5) 4
- 6) 3            29) a) Dish B  
                  b) With the sun, the water in Dish B would take a shorter time to evaporate than the water in Dish A because heat increases the speed of evaporation. On the other hand, Dish A is placed in a metal cabinet where there is not enough heat to make it evaporate more quickly.
- 7) 4
- 8) 3
- 9) 3
- 10) 4
- 11) 4           30) a) The water from seas, rivers and lakes evaporate into water vapour. All living things produce water vapour by respiring. The water vapour in the air will then rise up into the sky. As it rises, the water vapour becomes colder. As a result, they will condense to form clouds.
- 12) 4
- 13) 2
- 14) 4           b) It makes evaporation faster.
- 15) 3
- 16) 2           31) i) Marine life is killed as the living things living in the water cannot survive the oil spill.
- 17) 2           ii) When the sea creatures die, humans like fishermen are not able to catch any sea creatures such as fish.
- 18) 4
- 19) 2           32) 
- 20) 3
- 21) 1
- 22) 2
- 23) 2           33) a) His hand had blocked the path of the travelling light. Therefore, a shadow is formed. The conclusion is that light travels in a straight line.
- 24) 3
- 25) 2           b) His shadow will become smaller.
- 26) 3
- 27) 3

- 34) Heat                      Shadow  
Light  
Wind
- 35) a) Plant B  
b) Plant B has water, sunlight and air for it to grow the best.
- 36) a) Metal  
b) Wood
- 37) a) He would observe tiny water droplets on the inner part of the plastic bag.  
b) Plants respire. It gives off water vapour. The water vapour condensed on the cool surface of the plastic bag.
- 38) a) 70 heartbeats  
b) It represents Angela resting, as her heartbeat has decreased.
- 39) a) F    b) T    c) F    d) F    e) F    f) T
- 40) a) They should wear thick clothing.  
b) Air is a poor conductor of heat, so the heat from our bodies cannot escape easily from the surrounding and we stay warm.
- 41) a)  $39^{\circ}\text{C}$ . It shows that Daniel has a fever.  
b) It will crack. The temperate range is only from  $35^{\circ}\text{C}$  to  $42^{\circ}\text{C}$ .
- 42) a) She will see air bubbles floating to the water.  
b) The flame caused the air in the flask to expand. As a result, the air had no place but to go through the tube. Hence, the air goes into the basin of water in the form of bubbles.