NAN HUA PRIMARY SCHOOL
CONTINUAL ASSESSMENT 2 2015
PRIMARY FOUR
SCIENCE

Name : _____ ( )

Class : Primary 4 / ____

Date : 25 August 2015

Duration : 1 hr 30 min

Parent's Signature : _____

MARKS	
Sect A:	/ 40
Sect B:	/ 40
Total :	**/ 80**

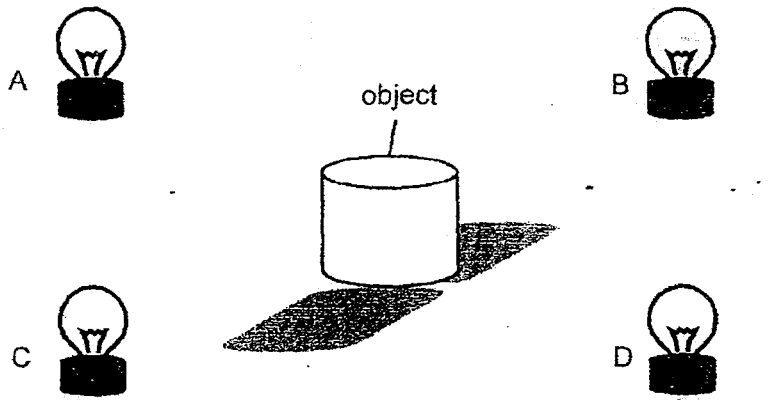
Section A: (20 x 2 marks = 40 marks)
For each question from 1 to 20, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

1. Which one of the following is/ are **not** source(s) of light?

   A fire
   B stars
   C mirror
   D diamond

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

2. Study the diagram below.



An object is placed at the centre of four light bulbs, A, B, C and D. Which light bulb(s) is/ are switched on to form the shadows shown in the diagram.

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

3. Ronald wanted to classify the following into matter and non-matter.

A Salt
B Light
C Oxygen
D Shadow

Which of the following consists of only non-matter?

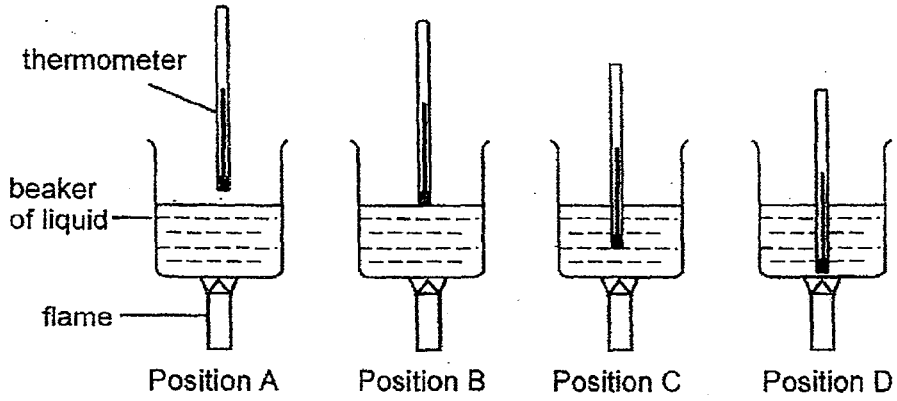
(1) A and B only
(2) A and C only
(3) B and D only
(4) B, C and D only

4. Kathy listed down the properties of solid and liquid in the table below. Which of the properties are true about solid and liquid?

	Solid	Liquid
A	Cannot be compressed	Can be compressed
B	Floats on water	Does not float on water
C	Has a definite shape	Takes the shape of the container
D	Has definite volume	Has definite volume

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

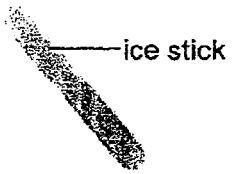
5. Four laboratory thermometers are held at positions A, B, C and D to measure the temperature change of a liquid as shown below.



At which position should the thermometer be held so as to give the best measurement of the temperature of the liquid?

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

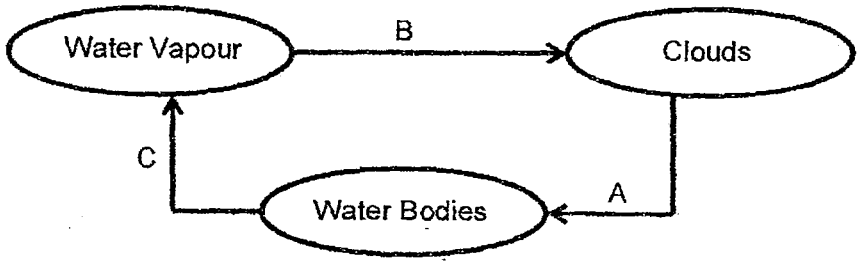
6. Jane wants to bring an ice stick to her friend who lives 10 minutes away from her house. She finds a sheet of tissue paper, a piece of newspaper, a cotton handkerchief and a piece of bubble wrap in her house.



Which is the best material for wrapping the ice stick so as to slow down the change in state of the ice?

(1) Newspaper
(2) Bubble wrap
(3) Tissue paper
(4) Cotton handkerchief

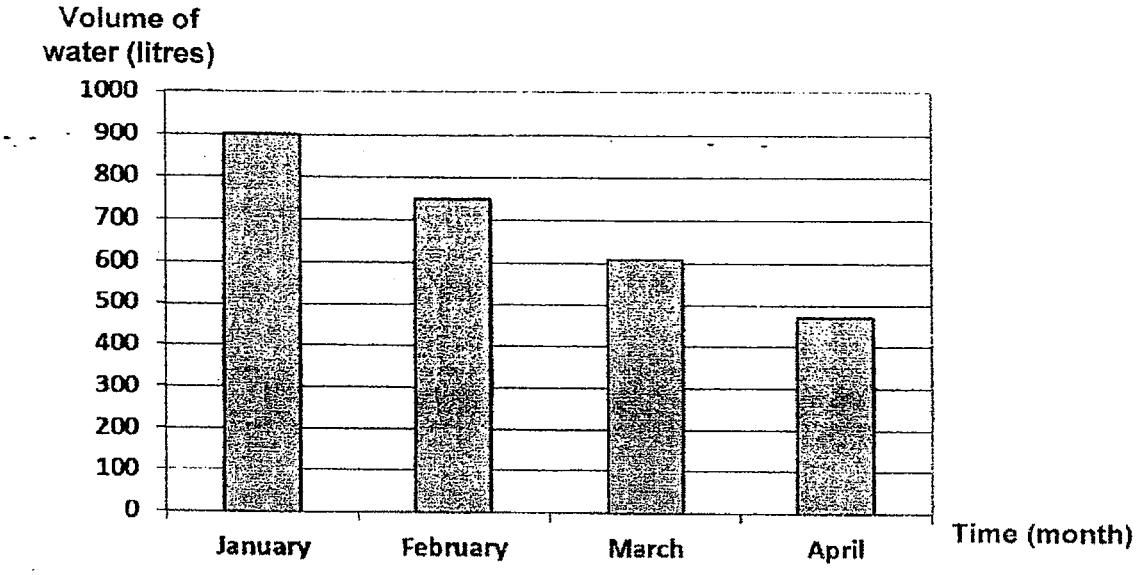
7. Study the water cycle diagram below. A, B and C are processes occurring in the water cycle.



Which of the following letters, A, B or C, correctly represent evaporation and condensation?

	Evaporation	Condensation
(1)	A	B
(2)	B	C
(3)	C	B
(4)	B	A

8. The chart below shows the household water consumption of the Tan family over 4 months.



Based on the chart above, which one of the following activities could have contributed to the change in the Tan's household water consumption?

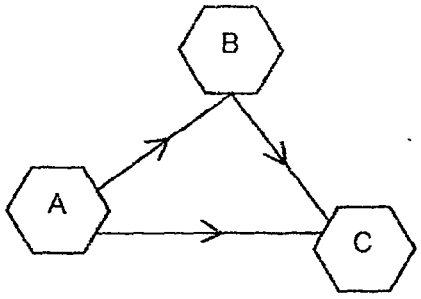
(1) Using a cup when brushing teeth

(2) Leaving the tap on when soaping their hands

(3) Washing the dishes and vegetables under a running tap

(4) Washing on a half load rather than full load when using the washing machine

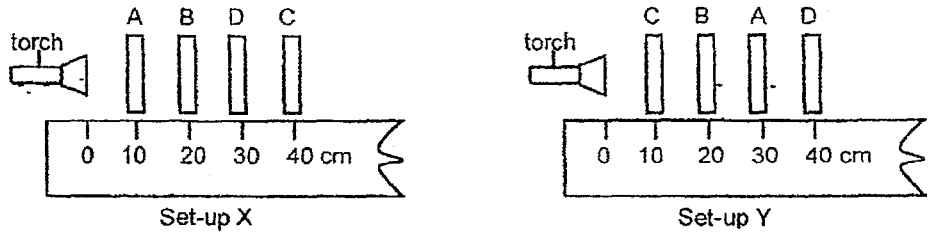
9. In the diagram below, the path of light is indicated by the arrows.



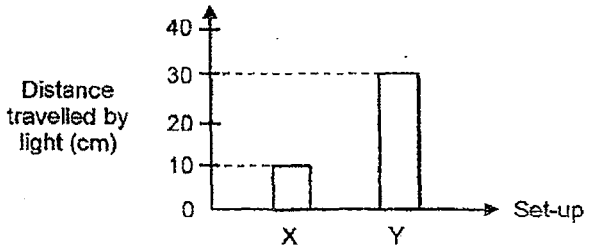
Choose the option that best fits A, B and C.

	A	B	C
(1)	Eyes	Object	Light source
(2)	Eyes	Light source	Object
(3)	Light source	Eyes	Object
(4)	Light source	Object	Eyes

10. An experiment was conducted to investigate whether light can pass through four sheets, A, B, C and D, made of different materials. The sheets were arranged in two set-ups, X and Y, as shown below.



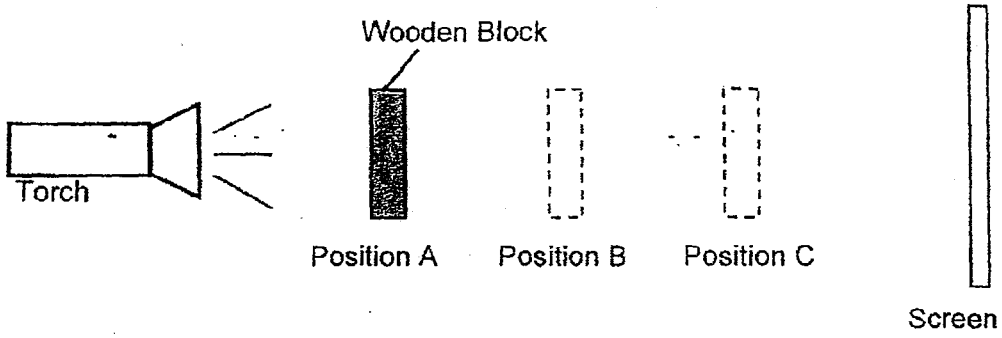
The distance travelled by the light for each set-up was measured and the results are shown in the chart below.



Which one of the following correctly describes the properties of sheets A, B, C and D?

	Allow light to pass through	Does not allow light to pass through	Not possible to tell
(1)	A	C	B and D
(2)	B	C and D	A
(3)	A and C	B	D
(4)	B and C	A	D

11. Danny placed a piece of wooden block at Position A and measured the height of the shadow cast on the screen as shown in the diagram below.

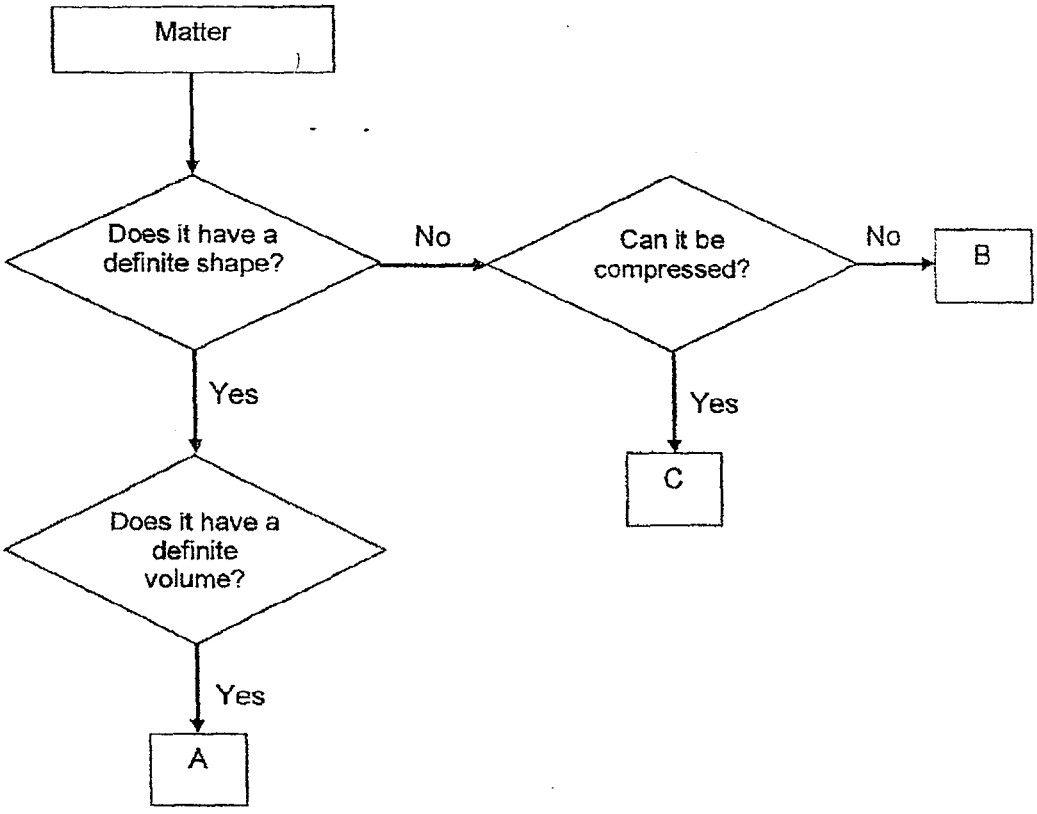


He repeated the experiment by placing the wooden block at Position B and Position C.

Which one of the following would most probably be his measurements of the shadows at the various positions?

	Height (cm) of shadow when wooden block is at Position		
	A	**B**	**C**
(1)	7	14	21
(2)	14	21	7
(3)	21	7	14
(4)	21	14	7

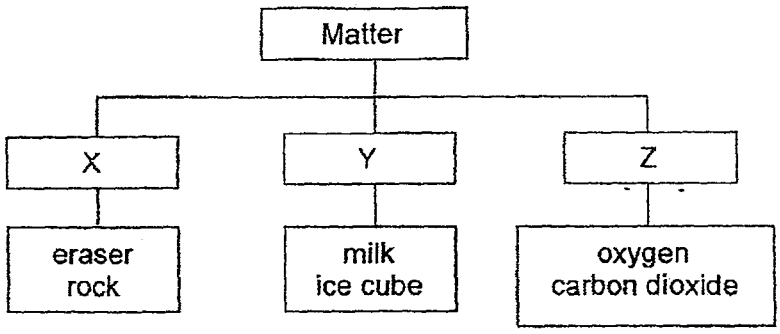
12. Study the flowchart below.



Based on the information given in the flowchart, which one of the following correctly represents A, B and C?

	A	B	C
(1)	Milk	Cooking oil	Book
(2)	Air	Coin	Milk
(3)	Book	Cooking oil	Air
(4)	Coin	Milk	Cooking oil

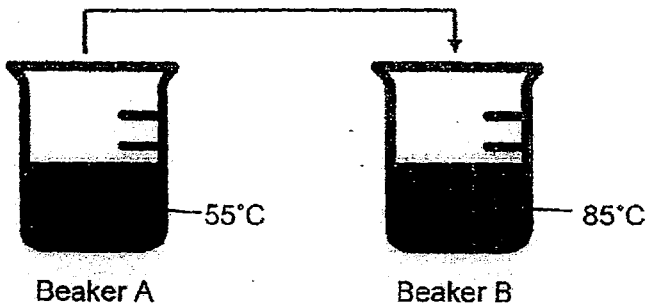
13. The classification chart below shows how different states of matter are grouped.



Which of the following is wrongly grouped?

(1) rock
(2) eraser
(3) ice cube
(4) carbon dioxide

14. The diagram below shows two beakers, each containing 100 cm^3 of water at different temperature.



What will immediately happen to the water in beaker B when water in beaker A is poured into it?

(1) The temperature of water in beaker B will decrease, and then increase.
(2) The water in beaker B will gain heat and increase in temperature to 140°C.
(3) The temperature of water in beaker B will decrease to 55°C, and then to the temperature of the surroundings.
(4) The temperature of water in beaker B will decrease to a temperature higher than 55°C but lower than 85°C.

15. Michael placed a balloon over the mouth of a flask as shown in Diagram 1. After a while, he placed the flask in a container of hot water as shown in Diagram 2.

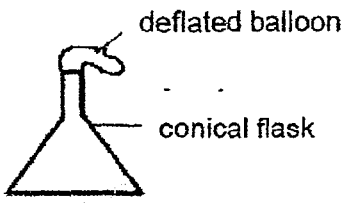


Diagram 1

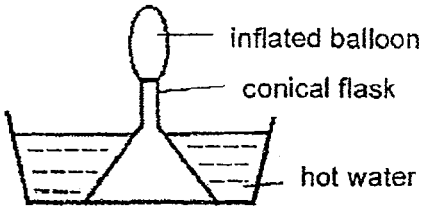
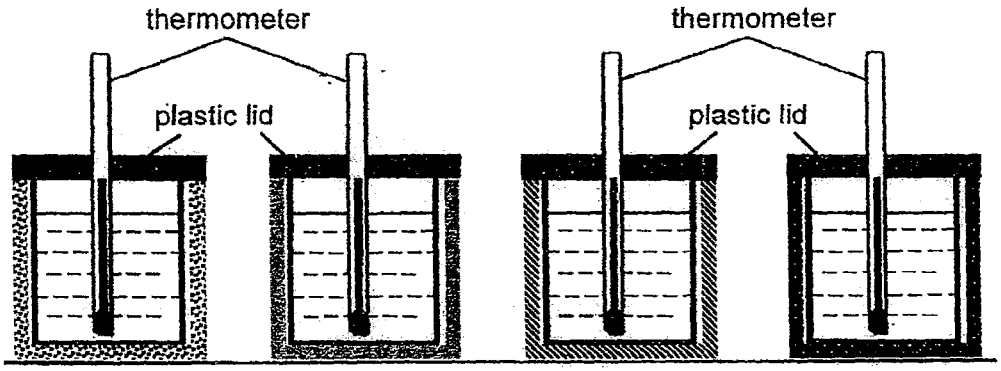


Diagram 2

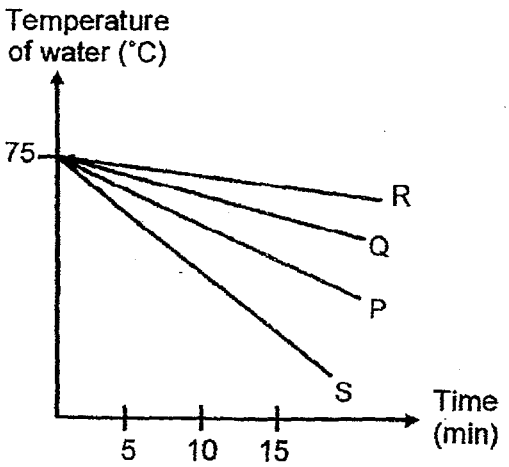
What causes the balloon in Diagram 2 to inflate?

(1) The flask gains heat from the hot water and expands.
(2) The balloon gains heat from the hot water and expands.
(3) The air in the flask gains heat from the hot water and expands.
(4) The air in the flask gains heat from the hot water and contracts.

16. Benny conducted an experiment using set-ups A, B, C and D as shown below. He wrapped the four identical glass beakers with materials P, Q, R and S respectively. He filled all four beakers with the same amount of hot water at 75°C.



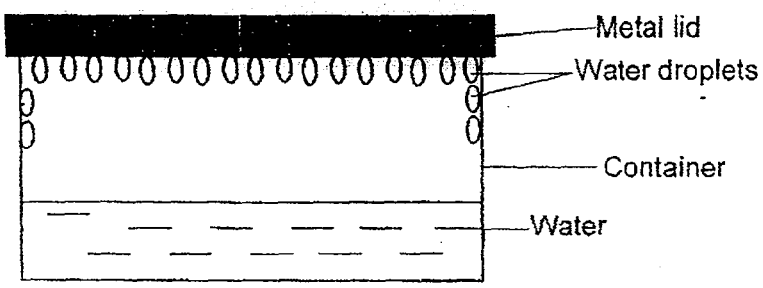
Benny measured the temperatures of the water in all four beakers over a period of 15 minutes and plotted his results as shown in the graph below.



Based on his observations, which material would be most suitable to make a winter jacket?

(1) P
(2) Q
(3) R
(4) S

17. Lucas poured some water into the container shown below. He then placed a metal lid over the container and left it in his living room. At the end of 20 minutes, Lucas observed that there were water droplets on the inner surface of the metal lid.



What conclusions can Lucas make based on the experiment above?

A The water in the container was cooler than the metal lid.

B The water vapour in the container lost heat to the metal lid.

C The water vapour in the surrounding air condensed on the metal lid

D The lower surface of the metal lid was cooler than the water vapour in the container.

(1) A and B only

(2) A and D only

(3) B and C only

(4) B and D only

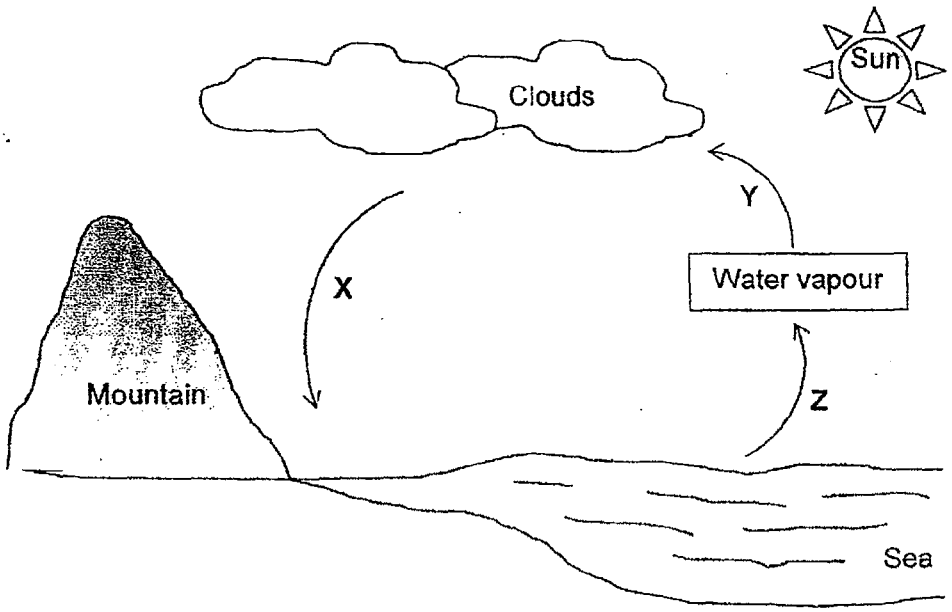
18. Jamie recorded the states of Substances W, X, Y and Z at different temperature.

	30°C	50°C	90°C
W	liquid	gas	gas
X	solid	liquid	gas
Y	solid	solid	liquid
Z	liquid	liquid	gas

Based on the information given above, which of the following substances are likely to have boiling point that is above 50°C?

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

19. Study the diagram below. X, Y and Z shows the processes in the water cycle.



Which of the following statement(s) is/are correct?

A Water loses heat in Process Z.

B Water vapour loses heat in Process Y.

C Water changes from a liquid to a gas in Process X.

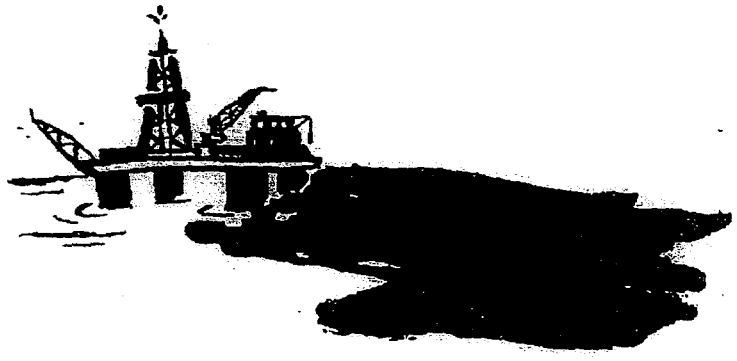
(1) A only

(2) B only

(3) B and C only

(4) A, B and C

20. Oil spills from ships can cause harm to the environment.



Which of the following are the effects of oil spills?

A Some aquatic animals will die due to the lack of oxygen.

B The people in the town will experience breathing difficulties.

C Birds will have difficulties flying if they are caught on the layer of oil spills.

D Some sea mammals can no longer swim or float as their fur clump together.

(1) A and B only

(2) B and C only

(3) B and D only

(4) A, C and D only

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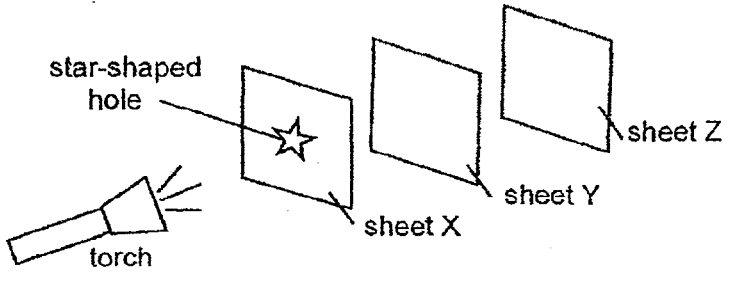
Name : _____( )

Class : Primary 4 / ___

MARKS
/ 40

Section B: (40 marks)
Write your answers to questions 21 to 34.
The number of marks available is shown in brackets [ ] at the end of each question or part-question.

21. Sally conducted an experiment in a dark room with the set-up shown below.



She arranged three sheets made of different materials, X, Y and Z, in a straight line. When the torch was switched on, Sally observed that a bright patch of light in the shape of a star was seen on Sheet Z only.

(a) From Sally's observation, describe the properties of Sheet X and Sheet Y. [1]

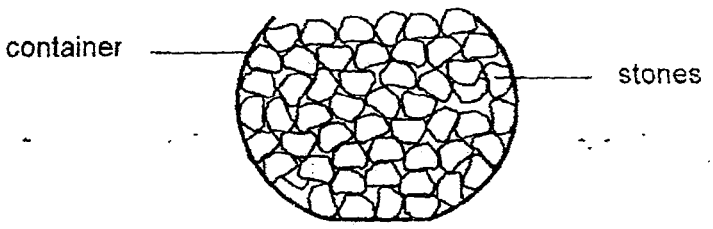
Materials	Degree of transparency
Sheet X	
Sheet Y	

(b) State one property of light as shown above. [1]

_____

Score	/ 2

22. Kelly filled the container to its brim with 250cm^3 of stones as shown below



(a) Identify the state(s) of matter found in the above container. [1]

_____

(b) Tick (✓) the box that shows the most likely volume of the container. [1]

Volume of Container	Tick (✓) the correct volume
Less than 250cm^3	
Equals to 250cm^3	
More than 250cm^3	

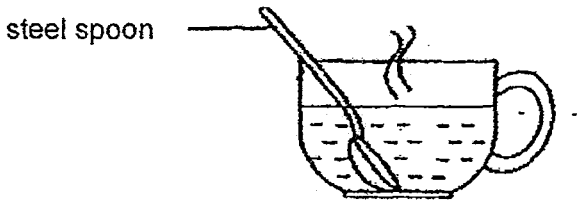
(c) Kelly wanted to fill the container with some water without removing the stones. Will she be able to do it? Give a reason for your answer. [1]

_____

_____

Score	/3

23. Faith used a steel spoon to prepare a cup of Milo with boiling water.



cup of hot Milo

(a) How does the handle of the spoon feel when she touches it? [1]

_____

_____

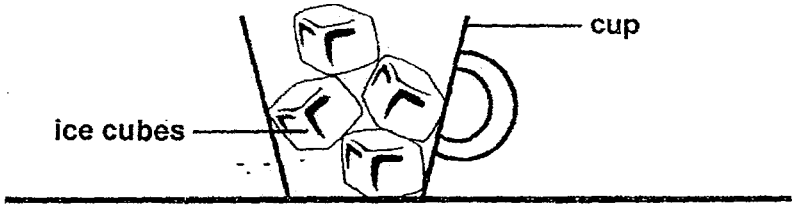
(b) Give a reason for your answer in (a). [1]

_____

_____

Score	/ 2

24. Arjun conducted an experiment in the school science room. He placed some ice cubes in a cup and left it on a table in the science room, as shown below.



Arjun used a thermometer to measure the temperature of the ice cubes every minute, for ten minutes. He recorded the temperature in the table shown below.

Time (minutes)	Temperature (°C)
1	0
2	0
3	0
4	0
5	0
6	8
7	19
8	26
9	26
10	26

(a) What is the process that is taking place between the first minute and the fifth minute? Give a reason for your answer. [2]

_____

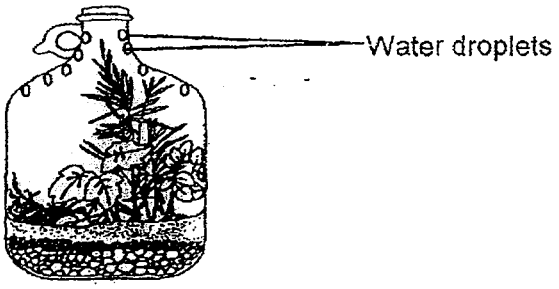
_____

(b) Based on the table above, what is the room temperature of the school science room? [1]

_____

Score	
	3

25. Caleb set up a terrarium which is a collection of small plants growing inside a transparent sealed container. He does not have to water the plants as the water in the terrarium goes through a similar process in the water cycle. He noticed some water droplets forming on the inner surface of the container as shown below.



(a) What do the water droplets represent in the water cycle? [1]

_____

_____

(b) Why is the water cycle important for the survival of living things? [1]

_____

_____

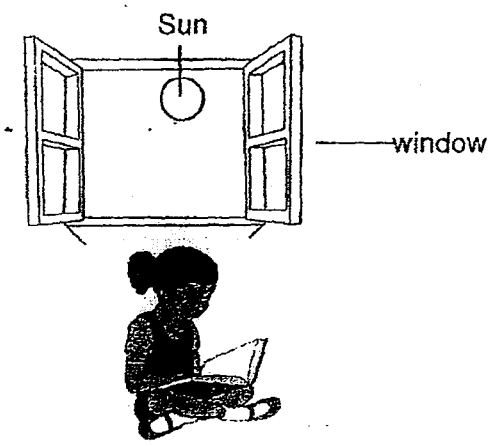
(c) Water conservation refers to saving and using water wisely as it is one of the Earth's natural resources.

Put a tick (√) in the respective boxes that show activities which help to conserve water. You may tick more than 1 box. [2]

Activity	Tick (√)
Take shorter showers.	
Repair any leakages in pipes immediately.	
Use the water from washing rice to water the plants.	
Use running water to thaw meat or other frozen food.	

Score	/ 4

26. Jasmine was reading a storybook in her room with the window opened as shown in diagram below.



Jasmine looked out of the window and she was able to see the Sun.

(a) Describe how Jasmine was able to see the Sun. [1]

_____

_____

Jasmine sat near the window to read a storybook.

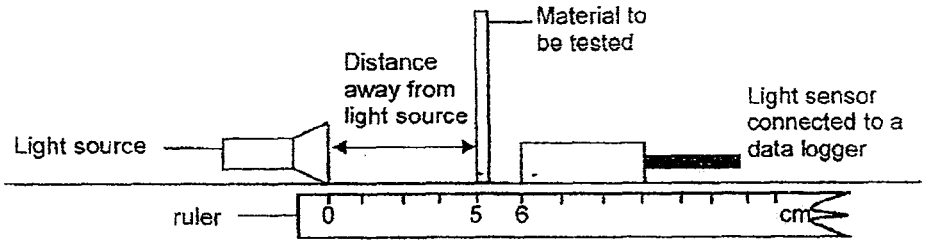
(b) Describe how she was able to read the storybook in the room. [1]

_____

_____

Score	
	2

27. Andy set up an experiment as shown below.



He wanted to investigate the amount of light passing through three different materials, A, B and C, of similar size and thickness with a light sensor connected to a data logger.

Object placed between torch and data logger	Amount of light measured (units)
No material (Light from the torch)	250
Material A	250
Material B	0
Material C	80

The table above shows the amount of light passing through the three materials.

(a) What is the independent variable (variable changed) in this experiment? [1]

_____

Andy wanted to choose a material to make a display cabinet for his trophies.

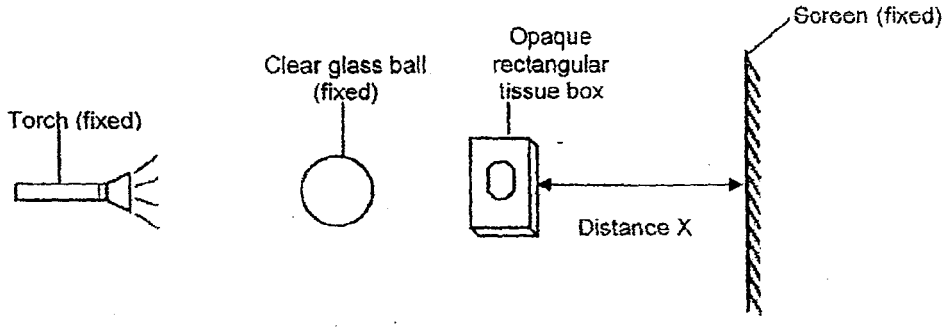
(b) Which material should he choose to make the display cabinet? Give a reason for your answer. [2]

_____

_____

Score	
	3

28. Max arranged a torch, a clear glass ball and an opaque rectangular tissue box in a straight line in front of a screen as shown below.



The positions of the torch, clear glass ball and the screen are fixed.

When the torch was turned on, a shadow was formed on the screen.

(a) In the box below, draw the shadow that he will observe on the screen. [1]

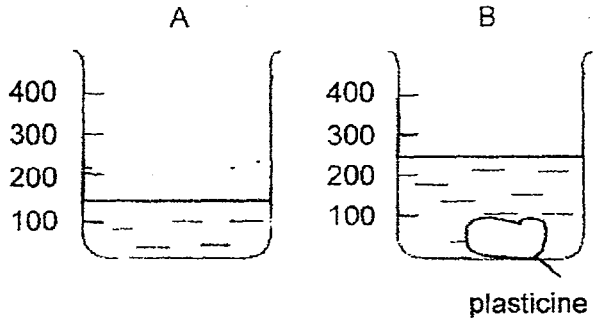
Max repeated the above experiment using different distances between the opaque rectangular tissue box and the screen. He recorded the height of the shadow formed on the screen in the table below.

Distance X (cm)	Height of shadow formed on the screen (cm)
4	9
6	11
8	13

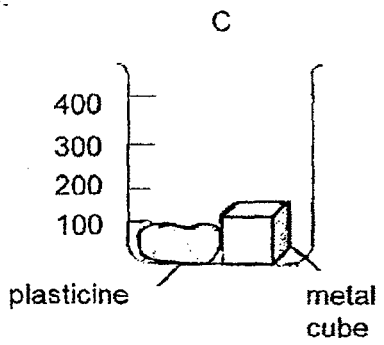
(b) Based on the information given in the table, what is the relationship between distance X and the height of shadow formed? [1]

Score 2

29. Jordan poured 150ml of water into a beaker as shown in diagram A. He then placed some plasticine in the beaker. The water level rose as shown in diagram B.



He then carefully placed a metal cube of volume 150cm^3 into the same beaker as shown in diagram C.



(a) In diagram C above, **draw the new water level** to show the volume of the water with the plasticine and the metal cube. [1]

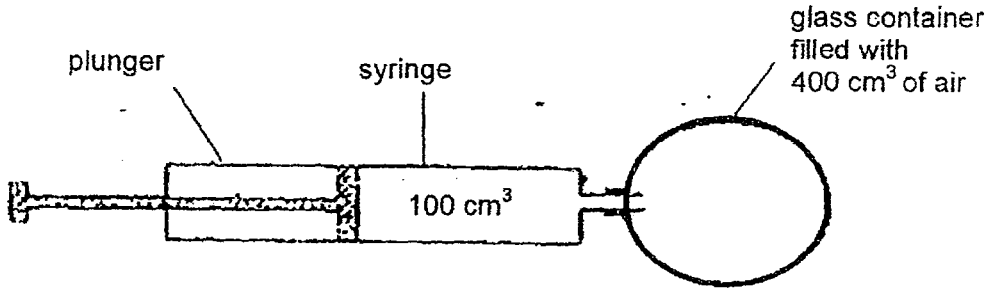
(b) Jordan then removed the plasticine and reshaped it into a ball. He then placed the plasticine ball back into the beaker together with the metal cube. Will the water level be higher, lower or the same as the water level you have drawn in (a)? Give a reason for your answer. [2]

_____

_____

Score	3

30. Melissa conducted an experiment as shown below. She connected a syringe containing 100 cm^3 of air to a glass container filled with 400 cm^3 of air. She then pushed the plunger all the way in.



Based on the diagram above, answer the following questions.

(a) What is the volume of air in the glass container **after** Melissa has pushed the plunger in? [1]

_____

(b) Explain your answer in (a). [1]

_____

_____

(c) Melissa did another experiment and filled the plunger with 50 cm^3 of Liquid X. She pushed the plunger all the way in and measured the volume of Liquid X and the volume of air in the container. Write the volume of Liquid X and volume of air in the table below. [2]

Volume of Liquid X (cm^3)	Volume of air (cm^3)

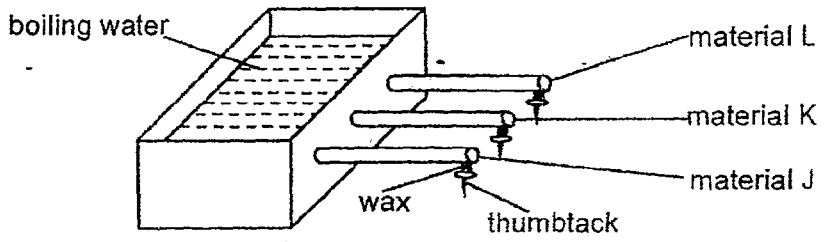
Score	
	4

31. Jerry went to the coffee shop to buy hot tea for his mother. Upon reaching the coffee shop, he saw Mr Samy pouring hot tea from one container into another, as shown in the diagram below. After a while, the hot tea became cool.

Explain how Mr Samy's action reduces the temperature of the hot tea more quickly than leaving the cup of hot tea on the table to cool. [2]

Score	/ 2

32. Wei Kang had three rods made of different materials, J, K and L. He wanted to find out which material of the rod is the best conductor of heat. He inserted one end of each rod into a container of boiling water and attached a thumbtack at the other end of each rod with an equal amount of wax as shown below.



He recorded the time taken for the thumbtacks to drop off in the table below.

	Material J	Material K	Material L
Time (min)	9	15	4

(a) Besides the amount of wax used, state another variable that he needs to keep the same to ensure a fair test. [1]

_____

(b) Arrange the materials, J, K and L, in order beginning with the best conductor of heat to the poorest conductor of heat. [1]

☐ ☐ ☐

Best conductor of heat

Poorest conductor of heat

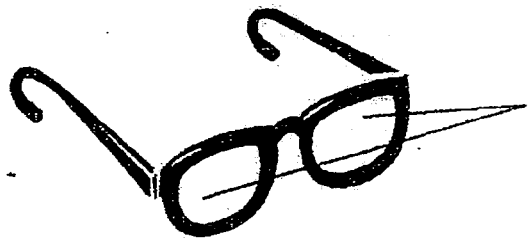
(c) Based on the table above, which material is suitable to make the handle of a kettle? Give a reason for your answer. [2]

_____

_____

Score	
	4

33. As Julian got off an air-conditioned bus, his glasses immediately 'fogged up' and he was not able to see clearly for a short period of time.



Glasses 'fogging' up (water droplets forming) when Julian stepped out of the air-conditioned bus

(a) Explain in detail what caused the "fogging" on Julian's glasses. [2]

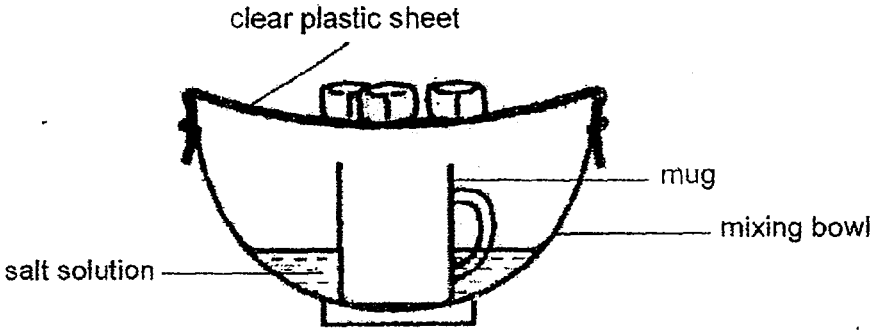
Julian decided to record the observations of his glasses 'fogging' up over a period of five days. He stepped out of the bus at 8 am every morning on his way to school. The amount of water vapour in the surrounding air was similar for the five days. He recorded the amount of fogging as "low", "medium" and "high".

Day	Temperature in the bus	Surrounding temperature	Fogging of glasses
Monday	18°C	30 °C	High
Tuesday	18°C	25 °C	Medium
Wednesday	18°C	21°C	Low
Thursday	18°C	20 °C	Low
Friday	18°C	28 °C	High

(b) Based on the results shown in the table above, explain why Julian experienced "low" fogging on his glasses on Wednesday and Thursday. [1]

Score	
	3

34. Cindy used the set-up below to illustrate a model of the water cycle. She left the set-up under the sun.



(a) What is the purpose of putting ice on the clear plastic sheet? [1]

_____

_____

_____

(b) Cindy observed some water droplets in the setup. <u>Draw</u> a few of the water droplets found in the set-up. [1]

(c) After that, the water droplets dripped down and were collected inside the mug. Cindy tasted the water and realized that it was not salty. Explain why the water was not salty.

[1]

_____

_____

Score	
	3

END OF PAPER

Answer Key

EXAM PAPER 2015

SCHOOL : NAN HUA

SUBJECT : P4 SCIENCE

TERM : CA2

ORDER CALL : MR GAN @ 92998971 92475053 86065443

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
3	2	3	3	3	2	3	1	4	4
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
4	3	3	4	3	3	4	4	2	4

21)a) Sheet X= Opaque Sheet Y= Transparent

b) Light Travels in a straight line.

22)a) Solid and Gas

b)More than 250cm$_3$

c) Yes, because the water can fill in the gaps between the rocks.

23)a) It will feel hot.

b) The spoon gained heat from the cup of milo so the handle of the spoon feel hot.

24)a) Melting. Melting takes place at 0℃.

b) 26℃

25)a) clouds/ rain

b)The water cycle provides a continuous supply of fresh water for living things to survive.

c)Take shorter showers.

Repair any leakages in pipes immediately.

Use the water from washing rice to water the plants.

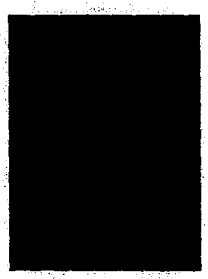
26)a) the sun gives out light which enters jasmine's eye.

b) The storybook reflects light from the sun into jasmine's eye.

27)a) Material of the object.

b) He choose material A. Material A allows light to pass through so he would be able to see the item inside the cabinet.

28)a)



b) As distance X increase, the height of the shadow increases.

29)a)

29)b)The same. As plasticine is a solid and solid has a definite volume, even if you make the plasticine into a ball, it will still have the same volume before it is made into a ball.

30)a) 400cm_3

b) Air can be compressed and glass has a fix volume.

Volume of liquid X (cm_3)	Volume of air (cm_3)
50cm_3	400cm_3

31) The exposed surface area is decreases when he pour the tea from one container into another, the amount of heat lose to the surrounding air increases.

32)a) Position of the thumbtsck/ the length of the rod.

b) L,J,K

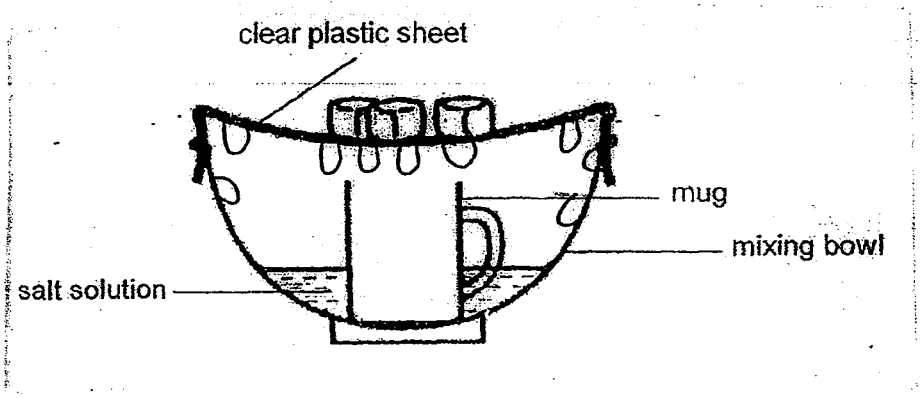
c) Material K. It conducts heat the slowest so the handle of the kettle can be held without scalding the hand.

33)a) Water vapour in the surrounding air that evaporate from the ground touches the cooler surface of his glasses loses heat and condenses to form water droplets.

b) The temperature difference is too close, the surrounding temperature nearer to the temperature of the bus so there is low fogging.

34)a) To cold down the plastic sheet so that condensation of water vapour can take place.

34)b)



c) Only the water in the salt solution evaporates to water vapour, leaving the salt behind, salt does not evaporate.