METHODIST GIRLS' SCHOOL (PRIMARY)

Founded in 1887

CONTINUAL ASSESSMENT 2014
PRIMARY 4
SCIENCE

BOOKLET A

Total Time: 1 h

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.
Follow all instructions carefully.
Answer all questions.

Name: _____

Class: Primary 4 _____

Date : 6 March 2014

This booklet consists of 12 printed pages excluding this page.

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For each question from 1 – 15, 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 marks)

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1. Study the classification diagram shown below.

Which of the following are the most suitable headings for the two groups?

	GROUP X	GROUP Y
(1)	Lays one egg at a time	Lays many eggs at a time
(2)	Lays eggs in water	Lays eggs on land
(3)	Eggs with shell	Eggs without shell
(4)	Eggs do not need to be incubated	Eggs need to be incubated

(Go on to the next page)

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2. The animals below share common characteristic(s).

What is /are the common characteristic(s)

A : They lay eggs.
B : They grow and eventually die.
C : They feed on the same type of food.
D : They respond to changes around them.

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

(Go on to the next page)

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3. How are the young of the grasshopper and the butterfly similar?

A : They moult
B : They turn into pupae.
C : They have no wings.
D : They resemble their parents.

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

4. Raju wants to grow a long bean plant from seeds. Which of the following are needed for the seed to germinate?

A : air
B : water
C : warmth
D : sunlight
E : carbon dioxide

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

(Go on to the next page)

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5. Study the classification chart below.

Which of the following correctly shows what P, Q, R and S most likely represent?

	P	Q	R	S
(1)	Lion	Cactus	Duckweed	Hydrilla
(2)	Earthworm	Sunflower	Hydrilla	Pine
(3)	Grass	Ladder fern	Whale	Tapegrass
(4)	Rabbit	tapegrass	Duckweed	Hydrilla

(Go on to the next page)

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6. The pictures show the different stages in the growth of a plant. What is the correct order of growth?

(1) C,A,D, B

(2) C,A, B ,D

(3) C,D, A, B

(4) C,D, B, A

7. Two identical seeds were placed in a dish as shown below.

After a few days, only the seed in dish B germinated.
What are the most likely conditions that caused this result in both dishes?

	Dish A	Dish B
(1)	Placed in a sunny place and watered daily	Placed in the refrigerator and watered daily
(2)	Placed in a sunny place without any water	Placed in a dark cupboard and watered daily
(3)	Was put in a pot of boiled water	Placed in a container of alcohol
(4)	Was wrapped in cling wrap and not watered	Was put into an airtight container and not watered.

(Go on to the next page)

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8. The diagram below shows a swimming board.
What characteristics must the material for making the swimming board have?

A : It must be light.

B : It must be flexible.

C : It must be waterproof.

D : It must float on water.

(1) C only

(2) A and D only

(3) B ,C and D only

(4) A, C and D only

(Go on to the next page)

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9. A scientist discovered W, X, Y and Z while doing an experiment. He set out to determine if the four things could be classified as matter.

The results were tabulated in the table below.

	Volume (cm^3)	Mass (g)
W	5	0
X	7	10
Y	8	15
Z	0	21

Based on the results that the scientist obtained, which of the four items are matter?

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

(Go on to the next page)

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10. Which of the following are **not** matter?

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

11. Samy half-filled the communicating flask with water.

Which one of the following correctly shows the apparatus when it is tilted?

(Go on to the next page)

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12. Peter hangs a magnet from a spring as shown in Diagram 1. He then puts a second magnet directly below the first. What would he observe?

Diagram 1

Diagram 2

(1) The spring stretches more in Diagram 2.

(2) The spring stretches less in Diagram 2.

(3) The magnets will attract each other.

(4) The spring is of the same length as in Diagram 1.

(Go on to the next page)

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13. Candy wanted to find out which of the three metal bars, AB, CD and EF are magnets. She hung each bar from a string and brought them near to each other. Her results are shown below.

Which one of the following is correct?

	AB	CD	EF
(1)	Not a magnet	Magnet	Magnet
(2)	Not a magnet	Not a magnet	Magnet
(3)	Magnet	Not a magnet	Magnet
(4)	Magnet	Magnet	Not a magnet

(Go on to the next page)

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14. A torch is shone at the two objects as shown below.

What will be the shape of the shadow seen on the screen?

(Go on to the next page)

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15. Study the following set-up carefully.

Which one of the following line graphs shows the correct relationship between the distance of the pen from the light source and the length of its shadow?

(1)

(2)

(3)

(4)

-End of Booklet A-

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METHODIST GIRLS' SCHOOL (PRIMARY)

Founded in 1887

CONTINUAL ASSESSMENT 2014
PRIMARY 4
SCIENCE

BOOKLET B

Total Time: 1 h

INSTRUCTIONS TO CANDIDATES

Answer all questions.
Write your answers in this booklet.

Name: _____

Class: Primary 4. _____

Date: 6 March 2014

Booklet A	**/ 30**
Booklet B	**/ 20**
TOTAL	**/ 50**

This booklet consists of 9 printed pages excluding this page.

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Answer all the questions.
The number of marks available is shown in brackets ( ) at the end of each question or part question. (20 marks)

---

16. Badawi placed a slice of damp bread into a plastic bag as shown below. He poked a few holes in the plastic bag and placed it on his dining table. After a few days, he saw mould growing on the bread.

a) Why did he poke holes in the plastic bag? (1m)

_____

_____

b) What would he observe on the bread after a few days if he had used a slice of toasted bread? (1m)

_____

_____

(Go on to the next page)

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17. The diagram shows the life cycle of a butterfly.

a) Name an animal which has a life cycle that resembles the life cycle shown above. (1m)

b) At which stage of its life cycle is the butterfly considered a pest to the gardener? Give a reason for your answer. (2m)

(Go on to the next page)

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18. Study the plant below carefully.

For each of the following statements, tick (√) the correct box to indicate if the statement is "True", "False" or "Not Possible to tell". (2m)

	Statement	True	False	Not possible to tell
(1)	The plant is an adult plant.			
(2)	The plant has reached its maximum height.			
(3)	The plant has a network vein pattern.			
(4)	Some flowers on the plant will not develop into fruits.			

(Go on to the next page)

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19. Meena attempts to pour 30 ml of water quickly into each of the two glass conical flasks as shown below. Water does not flow into Flask A quickly while all the water flows into Flask B quickly.

a) Why does water flow into Flask B quickly and not in Flask A? (1m)

_____

_____

b) State one way to make water flow into Flask A quickly. (1m)

_____

_____

(Go on to the next page)

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20. Mariam placed a ball of plasticine into a beaker of water and she noticed that the water level rose to 180cm.

She took the plasticine out of the water. She noted the reading, which was 150 cm³.

a) What is the volume of the stone? (1m)

_____

b) She next cut the plasticine into two and placed both parts back into the water again. What will the new reading in the beaker be? (1m)

_____

c) What property of the plasticine can she conclude from the experiment? (1m)

_____

_____

(Go on to the next page)

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21. Study the classification chart below.

a) Based on the classification chart above, write down the characteristic of Substance X. (1m)

_____

_____

b) Based on the information given in the chart above, state one difference in the characteristic between rubber band and ammonia. (1m)

_____

_____

(Go on to the next page)

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22. Su Li carried out an experiment in a dark room. She arranged four pieces of paper in a straight line. She then switched on her torch and a bright triangular patch of light is seen on Sheet R only.

Put a tick (√) in the correct box for each statement . (2m)

	Statement	True	False	Not possible to tell
(a)	Sheet P is transparent.			
(b)	Sheet Q is opaque.			
(c)	Sheet R does not allow light to pass through.			
(d)	Sheet S is transparent			

(Go on to the next page)

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23. Hamid wanted to find out how much light was able to pass through the different materials. He connected a ~~datalogger~~ to a computer to carry out his experiment.

The results are tabulated below.

Materials tested	Reading on the computer
White envelope	3
Ceramic mug	0
Tracing paper	8
Spectacle lens	12

a) Arrange the materials from the most opaque to the least opaque. (1m)

_____

b) What would be the most likely reading on the computer if a piece of metal ruler is tested? Give a reason. (1m)

_____

(Go on to the next page)

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24. Danny coiled some wire around an iron rod and a steel rod. The ends of the wires were connected to an electrical circuit.

a) When he closed the switch, what do you think will happen to the two rods? (1m)

_____

_____

The two rods were placed 5cm above a pile of steel paper clips before the switch was closed. The number of paper clips attracted to each rod was recorded.

Number of tries	Iron rod	Steel rod
1st trial	16	9
2nd trial	14	10
3rd trial	15	8

b) Why did Danny repeat the experiment three times? (1m)

_____

_____

-End of Paper-

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ANSWER SHEET

EXAM PAPER 2014

SCHOOL : MGS (PRIMARY)
SUBJECT : PRIMARY 4 SCIENCE

TERM : CA1

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
2	4	3	1	1	3	2	4	4	4	1	2	3	2	3

16. a) To draw air to enter the bag.
b) He could see no change.

17. a) Moth
b) At the larva stage. At this stage, the caterpillar eats a lot of leaves and destroys plants.

18. 1) True
2) Not possible to tell
3) True
4) Not possible to tell

19. a) In Flask B, there is a gap for the air to escape and the water to flow in. In flask A, the air cannot escape for water to flow in.
b) Loosen the stopper

20. a) 30
b) The new reading will remain the same as the plasticine has a definite volume.
c) Plasticine has a definite volume.

21. a) Substance X is a coloured liquid.
b) Rubber band is elastic but ammonia is not. Ammonia has a small but rubber band does not.

22. a) False
b) False
c) True
d) Not possible to tell

23. a) Ceramic mug, white envelope, tracing paper, spectacle lense
b) 0. Metal is an opaque object and does not allow light to pass through.

24. a) They will become electromagnets.
b) To ensure that the results of the experiments are consistent and reliable.

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Rosyth School
Topical Test 2014
SCIENCE
Primary 4

Total Marks: 40

Name: _____

Class: Pr 4 _____ Register No. _____ Duration: 50 min

Date: 3 March 2014 Parent's Signature: _____

Instructions to Pupils:

1. Do not open the booklet until you are told to do so.
2. Follow all instructions carefully.
3. This paper consists of 2 Parts, Part I and Part II.
4. For questions 1 to 10, write your answers in the brackets given in Part I.
5. For questions 11 to 17, write your answers in the spaces given in Part II.

	Maximum	Marks Obtained
Part I	20 marks	
Part II	20 marks	
Total	40 marks	

* This booklet consists of 13 pages.

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Part I (20 Marks)

For each question from 1 to 10, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4) and write your answer in the bracket provided.

1. Ali wanted to find out if air, food and water are needed for living things to survive. He placed a grasshopper into each of the set-up below.

   In which of the set-ups would the grasshopper survive the longest?

( )

2. Joshua observed some animals over a period of time. He recorded his observations in the table as shown below. A tick (√) shows that the animal has the characteristic and a cross (X) shows that the animal does not have the characteristic.

Observation	Animal A	Animal B	Animal C	Animal D
It has feelers.	X	√	X	√
It has 6 legs.	X	X	X	√
Part of its life cycle is in water.	X	√	√	√

Which one of the following animals best describes a mosquito?

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

( )

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3. In the diagram below, A, B, C and D represent the different developmental stages in the life cycle of a flowering plant.

stage A stage B stage C stage D

Which of the following shows the correct order of developmental stages in the life cycle of a flowering plant?

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

( )

4. Which one of the following shows the correct order of stages in the life cycle of a housefly ?

(1)

(2)

(3)

(4)

( )

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5. Selina set up an experiment as shown below. Set-up A and Set-up C were placed in the cupboard while Set-up B and Set-up D were placed near the window.

After three days, she observed that the seeds in Set-up C and Set-up D had grown into seedlings but seeds in Set-up A and Set-up B had not grown into seedlings.

Based on the experiment, which factor is needed for seeds to grow into seedlings?

(1) Presence of light
(2) Presence of water
(3) Cotton wool
(4) Warmth

( )

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6. An adult butterfly has just laid an egg on a leaf. The stages A, B, C and D below show the development of a butterfly.

A: Caterpillar hatched from the egg.
B: Caterpillar stopped eating and changed into a pupa.
C: Caterpillar ate a lot of leaves and moulted a few times.
D: A butterfly came out of the pupa and soon laid eggs to start the cycle again.

Arrange the stages in order.

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

( )

7. Timothy sorted out some mealworm beetles into four boxes M, N, O and P, according to the stages of their life cycles that they were in. Each box contained 5 mealworm beetles. He placed 20g of appropriate food and water into each box. The amount of food left after three days was then recorded in the table below.

Box	Amount of food left (g)
M	20
N	11
O	20
P	0

Which of the following correctly identifies the stages of the mealworm beetles in each box?

	M	N	O	P
(1)	egg	larva	pupa	adult
(2)	egg	adult	pupa	larva
(3)	larva	adult	egg	pupa
(4)	pupa	egg	adult	larva

( )

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8. Which of the following is not a matter?

(1) ice	(2) music
(3) deflated baloon	(4) empty container

( )

9. The pictures below show a piece of clay before and after it was reshaped.

Before reshaping After reshaping

What change(s) has taken place when the piece of clay was reshaped?

A: Its mass has changed.
B: Its shape has changed.
C: Its volume has changed

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

( )

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10. Study the diagram below.

Ryan put a piece of plasticine into a measuring cylinder with some water. He observed that the volume of water rose to 50ml.

Then, he took out the piece of plasticine and rolled it into a ball. He then placed the plasticine into a displacement can as shown below.

What is the volume of water collected in the beaker?

(1) 15ml
(2) 20ml
(3) 25ml
(4) 50ml

End of Part I

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Part II (20 Marks)

For questions 11 to 17, write your answers in the space provided.

11. Study the flow chart below.

(a) Based on the flow chart, state two similarities between U and V? [1m]

_____

_____

(b) Do you think S is an animal? Support your answer. [1m]

_____

_____

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12. Gopal was trekking in the jungle when he found an animal that he had never seen before. He brought it back and kept the animal in a container with holes. He then made his observations over a month.

OBSERVATIONS

- It has a pair of wings but cannot fly.
- Its body is covered with greyish feathers.
- When he touched the animal, it moved away.
- The fruit and water left for the animal were all finished.
- After 3 weeks, there were several eggs in the container too.

(a) Based on the observations, which group of animals does it belong to? Give one evidence to support your choice. [2m]

_____

_____

(b) Why do you think Gopal placed the animal in a container with holes and gave it fruit and water? [1m]

_____

_____

(c) Based on Gopal's observation, state one characteristic of a living thing that can be observed. [1m]

_____

_____

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13. The diagram A, B, C, D, E and F below shows the development of the frog.

(a) Arrange the letters to show the correct sequence in the development of the frog. The first box has been completed for you. [1m]

(b) What will happen if all the frog eggs are eaten by other animals? [1m]

_____

_____

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14. Derek kept a cockroach nymph in a container as shown in the diagram below.

After some time, some brown-coloured dried skin was found inside the container.

(a) What has caused the brown coloured dried skin to be there? [1m]

_____

_____

(b) In the space below, use the boxes to draw the life cycle of a cockroach. [1m]

(c) Do you think a cockroach is an insect? Support your answer. [1m]

_____

_____

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15. The following diagrams show the life cycles of a plant and a dragonfly.

(a) Give one similarity between the life cycles of a plant and a dragonfly. [1m]

_____

_____

(b) Give one difference between the life cycles of a plant and a dragonfly. [1m]

_____

_____

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16. Benedict placed Bean R on some wet cotton wool in a glass bottle. He made sure that the cotton was kept damp.

After a few days, Benedict observed roots and shoots growing out of the bean.

(a) Draw and label the roots and the shoot of Bean R in the diagram below. [2m]

(b) In which direction will the roots grow? Give a reason for your answer. [2m]

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Year: 2014

Level: Primary 4

School: Rosyth School

Subject: Science

Semester: CA1

Part I:

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
1	4	4	3	2	4	2	2	2	2

Part II:

Q11) a) Both U and V lay eggs and cannot make its own food.

b) No, an animal does not make its own food but hunts for food.

Q12) a) Birds, it has greyish feathers and birds have feathers.

b) He wants the animal to survive as living things need air, food and water to survive.

c) Living things respond to changes.

Q13) a)

b) The frog will not continue and will stop as no same kind will reproduce.

Q14) a) The cockroach nymph shed his skin.

b)

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c) Yes, it has six legs and a pair of feelers.

Q15) a) Both life cycles have three stages.

b) The life cycle of a plant begins with a seed while the life cycle of a dragonfly begins with and egg.

Q16) a)

b) The roots will grow downwards. It holds the seedling firmly to the wet cotton wool.

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NAN HUA PRIMARY SCHOOL
CONTINUAL ASSESSMENT 2, 2014
PRIMARY FOUR
SCIENCE

Name : _____( )

Class : Primary 4 / ____

Date : 26 August 2014

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 **not** a source of light?

   (1) Fire
   (2) Fossil fuel
   (3) Lighted bulb
   (4) Sun.

2. Peter's basketball was filled with air but he still could pump more air into it. The basketball did not become bigger. It became harder instead.

   What property of air does it show?

   (1) Air takes up space.
   (2) Air can be compressed.
   (3) Air has a definite volume.
   (4) Air has no definite shape.

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3. Study the diagram below.

The arrows indicate the path of light. Which of the following correctly represents A, B and C?

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

4. Study the classification chart below.

Which one of the following correctly shows what P, Q and R could be?

	P	Q	R
(1)	table	stone	air
(2)	paper	cooking oil	watch
(3)	sea shell	water	oxygen
(4)	plasticine	key	water vapour

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5. Some ice cubes are added to a beaker of hot tea as shown in the diagram below.

Which of the following changes are most likely to take place?

A The ice cubes lose coldness to the hot tea.
B The ice cubes gain heat from the hot tea.
C The hot tea changes from liquid to solid state.
D The ice cubes changes from solid to liquid state.

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

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6. Mrs Lim poured some hot soup into 4 identical containers of similar size and shape which were made of different materials. Based on her observation, she plotted the graph as shown below.

Which one of the containers should Mrs Lim choose to keep the soup hot for the longest possible time?

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

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7. The diagram below shows a simple water cycle.

What do the processes X and Y represent?

	X	Y
(1)	Evaporation	Condensation
(2)	Evaporation	Melting
(3)	Condensation	Evaporation
(4)	Freezing	Condensation

8. Which one of the following will **not** help in conserving water?

(1) Installing automatic taps in toilets.
(2) Collecting rainwater for domestic use.
(3) Using ice in place of water to cool machines in factories.
(4) Collecting water from rinsing vegetable to water plants.

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9. The diagram below shows a vest that is worn by a traffic police officer when carrying out his duties on the road.

Why are reflectors placed on the vest?

(1) To absorb heat energy from the Sun to keep the traffic police officer warm.

(2) To enable the traffic police officer to see the images of the on-coming vehicles in the reflectors.

(3) To give out light at night so that the traffic police officer could see the surrounding area better.

(4) To reflect light from the surrounding light sources at night so that the drivers can notice the traffic police officer wearing the vest.

10. Yong En wants to find out if light can pass through some materials. He carried out the following experiment in a dark room.

Sheet A, B, C and D are arranged in a straight line. Sheet A has a circular hole as shown above. When the torch is switched on, a bright circular patch of light is observed on Sheet C.

Which one of the following correctly describes the properties of the materials that Sheet A, B, C and D are made of?

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

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11. Mrs Tan has a jade pendant as shown below.

Different shadows are formed when she shines her torch on it.

Which of the following could possibly be the shadows of the pendant?

A B C D

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

12. A ball of plasticine is pressed under a heavy piece of wood.

What change will the plasticine undergo?

(1) Change in size
(2) Change in mass
(3) Change in shape
(4) Change in volume

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13. The diagram below shows a glass cup that is half-filled with milk.

Which of the following statements are true for both X and Y?

A They have mass.
B They occupy space.
C They have definite volume.
D They have a definite shape.

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

14. Mary heated a beaker of water. At one point in the experiment, she added some ice cubes into the beaker of water. She plotted the temperature change of the water in the graph shown below.

At which point of the graph, A, B, C or D, were the ice cubes added to the beaker of water?

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

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15. The picture below shows a metal ball and a metal ring. The ring was just big enough for the ball to pass through at the start of the experiment.

What can be done to the metal ball and metal ring apparatus to prevent the ball from passing through the metal ring?

A Dip the ring in hot water.

B Dip the ball in cold water.

C Dip the ring in cold water.

D Heat the ball over the Bunsen burner.

(1) A only

(2) D only

(3) A and B only

(4) C and D only

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15. Which of the following statement(s) is/are true about the human digestive system?

A Food is not digested in the mouth and gullet.
B Digestive juices are produced in the small intestine.
C Water is absorbed from undigested food in the large intestine.

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

16. The diagram below shows a horseshoe magnet with different parts labelled A, B, C and D.

If part A can attract 5 pins, which of the following best represents the number of pins attracted by parts B, C and D of the horseshoe magnet?

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

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17. Mala used a magnet to hold a sheet of paper on the surface of a refrigerator. She noticed that the magnet can only hold up to 6 sheets of the same type of paper.

Which one of the following best explains her observation?

(1) The magnet can attract up to 6 sheets of paper.
(2) The refrigerator and the paper are made of magnetic material.
(3) The magnetism of the magnet cannot pass through 6 sheets of paper.
(4) The magnetism of the magnet can only pass through a maximum of 6 sheets of paper.

18. Which of the following path of light correctly shows how Jane sees the clouds?

(1) From Jane's eyes to Sun to clouds.
(2) From Jane's eyes to clouds to Sun.
(3) From Sun to Jane's eyes to clouds.
(4) From Sun to clouds to Jane's eyes.

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20. The graphs below show the number of water plants in Ponds A, B, C and D respectively with respect to the amount of pollution over a period of 5 months.

Which pond contains water that is most polluted?

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

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NAN HUA PRIMARY SCHOOL
CONTINUAL ASSESSMENT 2 2014
PRIMARY FOUR
SCIENCE

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. Susan was walking in an underground tunnel. There were mirrors placed at certain corners of the tunnel. Susan was able to spot Mr Kong before bumping into him.

(a) **Draw arrows** to show the path of light that enables Susan to see Mr Kong. [1]

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

_____

Score	2

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22. May carried out the following experiment as shown in the diagram below. She filled up the container with 12 styrofoam balls and a balloon that has a straw attached to it.

(a) May pumped air into the balloon through the straw.
State 2 observations that May will make when she pumped air into the balloon through the straw. [2]

i) _____

ii) _____

(b) What property of the styrofoam balls does this show? [1]

_____

_____

Score	/ 3

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23. A metal spoon is placed in a bowl of ice-cream as shown in the diagram below.

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

_____

_____

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

_____

_____

Score	/ 2

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24. Siew Meng filled a measuring cylinder with $50cm^3$ of water. He then placed a rock into the measuring cylinder and took down the new reading.

(a) What is the volume of the piece of rock? [1]

(b) Based on the above activity, what is one similarity between the property of the rock and the water? [1]

Score	/ 2

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25. The graph below shows the water consumption pattern of different activities at a residential home.

(a) Study the graph carefully and identify **two** activities that consume more water as compared to the rest. [1]

i) _____

ii) _____

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

Activity	Tick (√)
Use running water to wash the dishes instead of a water-efficient dishwasher.	
Take a shower instead of a bath.	
Install water-saving devices such as a half-flush water cistern.	

Score	/ 2

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26. Jane carried out the following experiment to investigate the degree of transparency of clear glass and materials X, Y and Z to light.

The bar graph below shows the result that Jane collected.

(a) Based on the above results, write down the materials, X, Y and Z, in the classification table below. [1½]

Group A	Group B	Group C
Rubber	Clear Plastic Sheet	Frosted glass

(b) Provide suitable headings for Groups A, B and C respectively. [1½]

Group A: _____

Group B: _____

Group C: _____

Score	/ 3

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27. Elton conducted an experiment to find out how the amount of light reflected by Material A is affected by the distance that Material A is away from the light source. He set up his experiment as shown in the diagram below.

He placed Material A at different distances away from the light source and used a light sensor to determine the amount of light that was reflected. He recorded the results in the table below.

Distance away from the light source (cm)	Amount of light that was reflected by material A (lux)
10	300
30	200
80	100

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

_____

(b) State one constant variable (variable kept the same) in this experiment? [1]

_____

(c) What is the relationship between the distance of Material A from the light source and the amount of light was reflected? [1]

_____

_____

Score	/ 3

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Section B: (40 marks)
Write your answers to questions 31 to 44.The number of marks available is shown in brackets [ ] at the end of each question or part question.

31. Look at the diagram below and tick (√) the correct box(es).

It is an insect because it _____. [2]

☐ can crawl

☐ has six legs

☐ has eyes

☐ has three body parts

Score	/ 2

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32. The diagram below shows the human digestive system.

Identify the part where

a) digestion first takes place : Part _____ [1]

b) digestion is completed : Part _____ [1]

Score	/ 2

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33. The diagram below shows how David sees the statue of the Merlion.

The sun gives off _____ and the statue of the Merlion _____ the light into David's eyes. [2]

34. Roy had a fever. He used an instrument to measure his temperature.

a) What is the instrument called? [1]

_____

b) What is Roy's temperature? [1]

_____

Score	/ 4

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35. Study the diagrams below and tick (√) the correct box for part (a) and (b).

a) Block X._____ block Y. [1]

☐ is lighter than

☐ has the same mass as

☐ is heavier than

b) Block Y _____ block Z. [1]

☐ is lighter than

☐ has the same mass as

☐ is heavier than

Score	/ 2

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36. Eric conducted an experiment to investigate a property of material using 3 different sheets of materials, A, B and C.

Material A Material B Material C

He placed sheets of the same material together to tear them. Then he recorded the maximum number of sheets of the same material that he can tear together at one go in the table below.

Maximum number of sheets of material that Eric can tear together at one go when placed together	8	2	25

a) What property of material was Eric investigating? [1]

_____

b) State two variables that must be kept the same in order to ensure a fair test. [2]

_____

_____

c) Which material should Eric choose to make a paper bag to carry heavy books? Explain your answer. [1]

_____

_____

Score	/ 4

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33. The diagram below shows the water cycle.

(a) In the table below, put a tick (✓) in the appropriate box to indicate if there is heat gain or heat loss in the water when it goes through Processes A and B respectively. [2]

Process	Heat gain	Heat loss
A		
B		

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

_____

_____

Score	/ 3

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34. Cindy heated a beaker of ice cubes and recorded the changes in its temperature over some time.

(a) How long did it take for the ice cubes to melt completely? [1]

_____

(b) At which point (A, B, C, D, E, F, G or H) in the graph did the water start to boil? [1]

_____

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

_____

(d) Cindy noticed that there was less water left in the beaker at the end of 35 minutes explain didthe volume of water decrease? [1]

_____

END OF PAPER

Score	/ 4

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ANSWER SHEET

EXAM PAPER 2014
SCHOOL : NAN HUA PRIMARY SCHOOL
PRIMARY : P4
SUBJECT : SCIENCE
TERM : CA2

SECTION A

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

Q18	Q19	Q20
2	1	4

SECTION B

21. a)

b) Light will be reflected by shiny surfaces.

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22. a) i) The balloon will inflate a little.
ii) Some Styrofoam balls will drop out from the containers.
b) The Styrofoam balls occupy space.

23. a) It will feel cool.
b) The metal spoon loses heat to the ice cream and will feel cold after a while.

24. a) 20ml
b) The water and rock occupy space.

25. a) i) Bath
ii) Washing machine
b) Take a shower instead of a bath
Install water-saving devices such as a half-flush water cistern.

26. a) Z Y X
b) Opaque
Transparent
Translucent

27. a) The distance between the light source and Material A
b) The amount of light given off by the light source.
c) The further from Material A to the light source, the lesser amount of light reflected by Material A.

28. a)

b)i) Move the torchlight closer to the screen.
ii) Move the ball further away from the screen.

29. a) There is air in the flask and the air could not escape due to the stopper, which stopped the water from flowing in.
b)i) The water in the funnel will flow in.
ii) The water in the inverted beaker will flow out into the basin.
c) Air occupies space.

30. a) The ink indicator will go down into the flask.
b) The air in the flask contracts when it is cooled by the cold water.

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31. a) Beaker A
    b) Water vapour from the surroundings came into contacts with the cooler surface of the beaker and condensed to form water droplets.

32. a) The tissue paper
    b) After Lisa took the temperature, it had the least amount of heat after 10 minutes.
    c) Water will eventually drop till room temperature and remain constant.

33. a) Heat loss
    Heat gain
    b) Living things need water to survive and the water cycle ensures an unlimited supply of fresh water.

34. a) 5 minutes
    b) E
    c) Water boils at the temperature of 100°C
    d) At the start, water is already evaporating, thus the volume of water decreases.

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Rosyth School
Second Topical Test for 2014
SCIENCE
Primary 4

Total Marks: 30

Name: _____

Class: Pr 4 _____ Register No. _____ Duration: 30 minutes

Date: 21 August 2014 Parent's Signature: _____

Instructions to Pupils:
1. Do not open the booklet until you are told to do so.
2. Follow all instructions carefully.
3. This paper consists of 2 parts, Part I and Part II.
4. For questions 1 to 10, write the correct answer in the brackets provided.
5. For questions 11 and 12, give your answers in the spaces provided in Part II.

	Maximum	Marks Obtained
Part I	10 marks	
Part II	5 marks	
Total	15 marks	

* This booklet consists of 9 pages.

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Performance Task

	Maximum	Marks Obtained
Total	15 marks	

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Part I (10 MARKS)

For questions 1 to 10, four options are given. Make your choice (1, 2, 3 or 4) and write your answer in the bracket provided.

1. The diagram below shows the life cycle of Animal X. If Stage A is the adult stage, what are Stages B, C and D?

	Stage B	Stage C	Stage D
(1)	nymph	egg	larva
(2)	egg	larva	pupa
(3)	egg	pupa	larva
(4)	larva	egg	nymph

( )

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2. Study the flowchart below.

Which of the following statements are correct?

A : Insect Y lays eggs in water while Insect X does not lay eggs in water.

B : Insect W lays eggs in water while Insect Z does not lay eggs in water.

C : Insect Y has a 3-stage life cycle while Insect X has a 4-stage life cycle.

D : Insect Z has a 3-stage life cycle while Insect W has a 4-stage life cycle.

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

( )

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3. John placed three seeds into each of the four containers A, B, C and D as shown below. Each container provided a different condition for the seeds to germinate.

	Container A	Container B	Container C	Container D
	Moist cotton wool	Moist cotton wool	Moist cotton wool	Dry cotton wool
	Placed in the freezer	Placed in the freezer	Placed near the window	Placed near the window

In which of the above container(s) would the seeds germinate after two days?

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

( )

4. The diagram below shows a sharp bend along a 2-way road.

Which mirror, W, X, Y or Z, will enable the drivers in the two cars to see each other before they meet?

(1) Mirror W
(2) Mirror X
(3) Mirror Y
(4) Mirror Z

( )

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5. Four sheets A, B, C and D are arranged in a straight line. Each sheet is made of a different material. When the torch is turned on, a very bright oval patch of light is seen on C only.

Which one of the following best describes the degree of transparency of sheets A, B, C and D?

	A	B	C	D
(1)	opaque	opaque	transparent	not possible to tell
(2)	transparent	opaque	not possible to tell	opaque
(3)	not possible to tell	transparent	opaque	opaque
(4)	opaque	transparent	opaque	not possible to tell

( )

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6. Jetta placed a metal spoon in a cup of hot tea. She found that the spoon became hotter after a while.

Which one of the following best explains why the spoon became hotter?

(1) The cup lost heat to the spoon.
(2) The hot tea gained heat from the spoon.
(3) The spoon gained heat from the hot tea.
(4) The spoon lost heat to the surrounding air.

( )

7. Which one of the following is a source of heat?

(1) moon	(2) cooking pot
(3) flame of a burning candle	(4) hand fan

( )

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8. Jaret placed an egg into each of the four identical glass beakers W, X, Y and Z. The beakers contained different amount of water at different temperature as shown below. The eggs are of similar sizes.

In which beaker would the egg be most cooked?

(1) Beaker W
(2) Beaker X
(3) Beaker Y
(4) Beaker Z

( )

9. Jia Min wanted to separate two identical metal containers which were stuck together.

What could she do to separate them?

A : Put some ice cubes into Container W
B : Pour some hot water into Container W.
C : Put Container X into a basin of hot water.
D : Put Container X into a basin of cold water.

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

( )

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10. Weiling placed four identical cups containing water at 100°C into four containers P, Q, R and S. The containers were made of different materials.

After 30 minutes, she recorded the temperature of the water in each cup as shown below.

	Temperature of water (°C)	
Container	Start of experiment	After 30 minutes
P	100	70
Q	100	60
R	100	80
S	100	95

Weiling wanted to keep a block of ice in a container overnight to prevent it from melting. Which container should she choose?

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

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PART II (5 MARKS)

For questions 11 and 12, write your answers in the space provided.

11. Ahmad carried out an experiment on the growth of a seed. He measured the height of the plant and the size of the seed leaves over a period of 9 days and recorded the data in the table as shown below.

	Day 1	Day 3	Day 5	Day 7	Day 9
Height of the plant (cm)	1	2	3	4	5
Size of the seed leaves (mm)	5	4	3	2	1

(a) Based on his results in the table, state the relationship between the height of the plant and the size of the seed leaves. [1m]

_____

_____

_____

(b) After Day 9, the seed leaves dropped off. Explain why the plant can still continue to increase in height. [1m]

_____

_____

_____

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12. Darrell used 3 rods made of different materials A, B and C for the experiment shown below. The sizes of the rods were the same. He put a ring of wax around each of them and heated the end of each rod. He recorded the results in the table below.

Materials of rod	Time taken for the ring of wax to melt completely (minutes)
A	10
B	8
C	5

(a) Explain why the wax on the different rods melted after some time. [1m]

(b) Which material is the poorest conductor of heat? Explain your answer. [1m]

(c) Which material A, B or C would you choose to make Part X of the frying pan as shown below? Explain why. [1m]

End of Paper

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Year: 2014

Level: Primary 4

School: Rosyth School

Subject: Science

Semester: CA2

Part I:

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
2	1	2	3	4	3	3	2	1	4

Part II:

Q11) a) The taller the plant grows, the smaller the size of the seed leaves.

b) After day 9, the seed leaves drop and the first leaf grows, thus, the plant can still continue to increase in height as the leaf can make food.

Q12) a) Heat travels from the rods and reach the ring of wax.

b) Material A. It takes the longest time for the ring of wax to melt when heated.

c) Material C. It took the shortest time to melt the wax and C is the best conductor of heat.

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AI TONG SCHOOL

2014 MID-YEAR EXAMINATION
PRIMARY FOUR SCIENCE

DURATION: 1hr 45 min

DATE: 16 May 2014

INSTRUCTIONS

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

Name : _____ ( )

Class : Primary 4 _____

Parent's Signature : _____

Date : _____

Section A	60
Section B	40
Total	100

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Section A (30 x 2 marks)

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

1. Dawn found animals Y and Z in the school garden. Both animals were insects.

Animal Y

Animal Z

Based on the diagrams above, which of the following statements is incorrect?

All insects have _____.

(1) wings
(2) feelers
(3) three body parts
(4) three pairs of legs

2. Catherine classified some living things as shown below.

Which of the following characteristics did she use to classify them?

(1) The way they move
(2) The way they reproduce
(3) The number of legs they have
(4) The number of stages in their life cycle

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3. The diagram below shows Organism K.

The characteristics of organisms A, B, C and D are shown below.

	A	B	C	D
Makes its own food	Yes	No	Yes	No
Bears flowers	No	No	Yes	No
Reproduces by spores	Yes	Yes	No	No

Which of the organisms, A, B, C or D is similar to K?

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

4. Tania wanted to find out if plants need light to grow. She set up an experiment as shown below and placed them in her garden for 7 days.

Why was the experiment not a fair test?

(1) Only one of the boxes had a hole.
(2) Different types of boxes were used.
(3) Different types of plants were used.
(4) The duration of the experiment was too long.

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5. The diagram below shows the life-cycle of an animal.

What are stages X and Z of this animal's life cycle?

	X	Z
(1)		
(2)		
(3)		
(4)		

6. Four children studied the life cycle of the mosquito and the butterfly and made some statements about the two organisms.

Shane: They have a four-staged life cycle.
Russell: Their young live in water.
Melissa: They are considered pests at the adult stage.
Nancy: The young of both organisms resembles the adult.

Who made the correct statement?

(1) Shane only
(2) Melissa and Nancy only
(3) Shane and Melissa only
(4) Russell, Melissa and Nancy only

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7. The graph below shows the number of days of each stage in organism K's life cycle.

Based on the graph, which of the following statements about Organism K is true?

(1) Organism K lives as an adult for 21 days.
(2) There are 4 stages in Organism K's life cycle.
(3) The lifespan of Organism K is more than 5 weeks.
(4) The young takes 13 days to become an adult after the egg is hatched.

8. Gerald observed two animals X and Y. He drew a checklist and placed a tick (√) in the box when he made the observation. His checklist is as follows.

	Animal X	Animal Y
It has 3 body parts	√	√
It lays eggs on land	√	
There are 3 stages in its life cycle	√	

Which of the following best represents Animal X and Y?

	Animal X	Animal Y
(1)	Frog	Butterfly
(2)	Grasshopper	Dragonfly
(3)	Cockroach	Mosquito
(4)	Beetle	Frog

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9. At which of the following stages, A, B, C and/or D can the plant make its own food?

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

10. The diagram below shows a plant.

Which of the following statements correctly describe the plant?

A The plant has leaves with entire edges.
B The plant has a weak stem.
C The plant is a flowering plant.

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

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11. John planted 4 pots of seeds labelled A, B, C and D. In each pot, there were 5 seedlings and 50g of soil. He watered them daily with different amounts of water and measured their average heights after one week.

From this experiment, what can John conclude?

(1) The more the number of seedlings, the taller the seedlings grow.
(2) The more the amount of water given daily, the taller the seedlings grow.
(3) The more the seedlings grow, the more the amount of water given daily.
(4) The more the amount of water given daily, the slower the seedlings grow.

12. Which of the following statements about the small intestine is true?

(1) Digestion ends in the small intestine.
(2) Digestion does not take place in the small intestine.
(3) In the small intestine, water is absorbed from the undigested food.
(4) In the small intestine, waste is stored until it is ready to be excreted.

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13. Janice ate four types of food, A, B, C and D. The graphs below show the changes in the amount of undigested food for A, B, C and D found in the human digestive system over time.

Based on the graph, which type of food is the most difficult to digest?

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

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14. The diagram below shows the human digestive system.

Which of the following tables correctly describe parts A, B, C, D and E?

(1)

	Parts of the Digestive System				
	A	B	C	D	E
Contains digestive juice	√	√			√
Absorbs digested food	√				
Absorbs excess water			√		

(2)

	Parts of the Digestive System				
	A	B	C	D	E
Contains digestive juice	√				√
Absorbs digested food	√				
Absorbs excess water			√	√	

(3)

	Parts of the Digestive System				
	A	B	C	D	E
Contains digestive juice	√		√		√
Absorbs digested food					√
Absorbs excess water				√	

(4)

	Parts of the Digestive System				
	A	B	C	D	E
Contains digestive juice	√	√		√	
Absorbs digested food					√
Absorbs excess water			√		

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15. The diagram below shows how some systems in the human body work with one another.

Which of the following best represents system P and Q and substance R in the diagram?

	System P	System Q	Substance R
(1)	Respiratory System	Muscular System	Undigested food
(2)	Circulatory System	Respiratory System	Digested Food
(3)	Muscular System	Circulatory System	Undigested food
(4)	Respiratory System	Circulatory System	Digested Food

16. Jaden set up an experiment. He put as many 1-kg weights as he could on Material P, until it broke.

He repeated the experiment with Materials Q, R and S. The number of weights was recorded in the table below.

Material	P	Q	R	S
Number of weights placed on the material until it broke	21	5	3	17

Which material, P, Q, R or S is the strongest?

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

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17. The flowchart below shows the characteristics of materials A, B, C and D.

Based on the characteristics shown above, which of the following materials, A, B, C or D is most suitable to make the part labelled R?

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

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18. Four similar objects of the same size were placed in a container of water as shown in diagram 1. They are made of different materials A, B, C and D.

Diagram 1

Diagram 2

Which material, A, B, C or D would be the most suitable to make the buoy shown in Diagram 2?

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

19. The diagram below shows Substance P in a tilted cup when it is at room temperature and when it is heated.

Which of the following best represents substance P when it is heated?

	Has mass	Definite shape	Definite volume
(1)	No	No	No
(2)	No	Yes	No
(3)	Yes	No	Yes
(4)	Yes	Yes	Yes

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20. Vivian connected a pump to a container.

She pushed the pump in completely and 90 cm^3 of air was forced into the container.

Which of the following shows the correct volume of the air after the pump?

(1) 150 cm^3
(2) 250 cm^3
(3) 340 cm^3
(4) 400 cm^3

21. Jimmy filled a container with water and a balloon with air. He then pushed the balloon into the container of water and observed that the water in the container overflowed.

Which of the following is not shown by the experiment?

(1) Air has weight.
(2) Air takes up space.
(3) Air can be compressed.
(4) Air has no definite shape.

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22. When a rubber ball was placed into a displacement can as shown below, the amount of water collected was 50ml.

Which of the following diagrams correctly shows the water level in the displacement can before the rubber ball was placed inside?

(1)

(2)

(3)

(4)

23. Four cubes A, B, C, and D, are of the same volume but made of different materials. The masses are compared against each other as shown.

Which of the four objects has the largest mass?

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

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24. Jim placed three objects in a black box that does not allow light to pass through. He then peeped through the small hole at the side to see if he could see the objects. He then repeated the experiment but placed a torch that was switched on in the box.

The table below shows his observations. A tick (√) shows that Jim could see the object.

Objects	With torchlight	Without torchlight
A	√	
B	√	
C	√	√

Which of the following objects, A, B and/or C gives out light of its own?

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

25. Eugene set up an experiment as shown below. He placed five identical cards with holes in front of a lighted candle. He then lined up the holes and looked through them to make some observations.

What was the aim of Eugene's experiment?

(1) To find out if light can be reflected.
(2) To find out if light travels in a straight line.
(3) To find out the brightness of the candle flame.
(4) To find out if light can pass through an opaque object.

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26. Matthew shone a torch onto two objects, X and Y, and the shadows cast by the objects are as shown below.

He then placed a wooden cube behind Object X as shown below.

He repeated the experiment using Object Y.

Which of the following correctly shows what would happen to the shadows of X and Y?

	Shadow of X	Shadow of Y
(1)		
(2)		
(3)		
(4)		

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27. Tom placed two identical toilet rolls with hollow centres directly under the lamps as shown in the diagram below.

What would he observe on the screens when the lamps are switched on?

	Screen A	Screen B
(1)		
(2)		
(3)		
(4)		

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28. Ziming conducted an experiment using Material M. He set up an experiment as shown below.

He then placed sheets of Material M in between the light source and the light sensor one at a time. He recorded the amount of light passing through the object in the table below.

Number of Sheets of M	Amount of light detected (lux)
0	1100
2	900
4	700
6	500
8	300

Which of the following graphs shows the relationship between the number of sheets of M and the amount of light detected?

(1)

(2)

(3)

(4)

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29. The diagram below shows a floor plan of a book store.

The owner wants to install two mirrors so the cashier can see any customer standing behind the shelf without having to leave the payment counter.

At which location A, B, C and/or D should he install the mirrors?

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

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30. The diagram below shows Lisa walking towards W, X, Y and Z.

The graph below shows the possible lengths of Lisa's shadows A, B, C and D taken at positions W, X, Y and Z. Shadows A, B, C and D shown in the graph are not matched to positions W, X, Y and Z.

Which of the following shows the correct shadow when Lisa was at position Y?

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

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Name: _____ ( )

Class: P4 _____

Section B: 40 marks
Read the questions carefully and write down your answers in the spaces provided.

31. The flow chart below shows the characteristics of 4 animals A, B, C and D.

(a) Which letters A, B, C or D best represents the following animals? [1]

i)

ii)

_____ _____

(b) Based on the flow chart, state one difference between animals A and C.

_____

_____

(c) Based on the flow chart, state two characteristics of animal C. [1]

_____

_____

3

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32. Study the diagram below carefully.

(a) The frog is a living thing. Based on the diagram above, list two characteristics of living things. [2]

i) _____

_____

ii) _____

_____

(b) The young of a frog lives in water while the adult frog lives on land.
How does living in different surroundings ensure that the young obtains enough food? [1]

_____

_____

_____

3

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33. The pictures below show the stages of growth of a seed.

(a) Arrange the stages A, B, C and D in the correct sequence to show the life cycle of the plant. [1]

(b) Identify part X of the seedling. What would happen if part X was removed from the plant at stage A? [2]

_____

_____

_____

3

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34. Miko carried out an investigation using Substance P.

She recorded the amount of moisture in containers A and B using a sensor. The table below shows her results.

	Amount of Moisture (units)	
	Container A	Container B
At first	100	100
After two hours	100	20

(a) Based on the results, describe the function of substance P. [1]

_____

_____

Miko decides to put substance P in the box storing his leather wallet.

(b) How does placing substance P in the box prevent mould from growing on the leather wallet? [2]

_____

_____

_____

3

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35. A farmer poured the same volume of water into each of the set-ups P, Q and R. He observed the volume of water and amount of soil collected in each cup after five minutes. His results are shown below.

(a) Which set-up, P, Q or R has

i) the highest volume of water and soil collected? [1]

_____

ii) the lowest volume of water and soil collected? [1]

_____

(b) Based on the results, how does having more small roots affect the functions of roots in terms of

i) the amount of water absorbed? [1]

_____

[1]

_____

4

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36. Amirah carried out an experiment using digestive juice A and two types of food, J and K, which contain starch. She placed equal amounts of digestive juice in each set-up. (Note: Iodine turns from yellowish brown to dark blue in the presence of starch.)

The food was left for 30 minutes, after which, 2 drops of iodine were placed in each set-up.

Amirah recorded down her observations of the colour of the mixture in the table below.

Type of Food	Colour of Mixture after Adding Iodine Solution
J	Solution turns dark blue.
K	Solution remains yellowish-brown.

(a) Why did Amirah have to wait for 30 minutes before putting the iodine solution? [1]

_____

_____

(b) Based on the results, which food is digestive juice A able to digest? Explain your answer. [2]

_____

_____

_____

3

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37. Benny carried out an experiment using two biscuits of the same size and mass. He then set up the experiment as shown below.

Digestive juice X will digest the biscuits and the biscuit will become mushy. The results of the experiment are as shown in the table below.

Set-up	Time taken for biscuit to turn mushy (hour)
A	3
B	1

(a) Identify the following variables for the experiment [2]

i) changed variable: _____

_____

ii) measured variable: _____

_____

(b) Why did the biscuit in set-up B become mushier first? [2]

_____

_____

_____

4

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38. Sally had three unknown materials P, Q and R. She conducted an experiment by using each material to scratch another material and recorded her observations in the table below.

Scratch Test	Results

(a) What was the aim of Sally's experiment? [1]

_____

_____

(b) Is material P or R harder? Explain your answer. [1]

_____

_____

2

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39. Jane carried out an experiment using 4 different types of materials, A, B, C and D of equal width and lengths. She dipped them into a container of blue-coloured water and noted the amount of blue stains on the materials.

(a) Arrange the materials A, B, C and D according to their absorbency. Start with the most absorbent. [1]

Most absorbent →			Least absorbent

(b) Which material, A, B, C or D would be the most suitable to clean up a water spill most effectively? Explain your answer. [2]

_____

_____

_____

3

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40. The diagram below shows containers A and B, which are made of the same material, being lowered into a basin of water.

Fifteen minutes later, it was observed that container A remains floating on the water but container B sank to the bottom of the container. Explain why. [4]

Observation	Explanation
a) Container A continues to float.	
b) Container B sank to the bottom.	

4

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41. Study the diagram below.

(a) Draw the path of light that makes it possible for the boy to see the dog. [1]

(b) Draw the path of light that makes it possible for the boy to see the candle flame. [1]

2

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42. Jack performed an experiment using the set-up below.

A shadow was formed on the screen.

(a) Give two reasons why the shadow was formed. [2]

_____

_____

_____

(b) Shade the diagram below to show the shadow formed on the screen. [1]

(c) As the circular card is moved towards the lamp, what changes to the shadow would Jack see on the screen? [1]

_____

_____

4

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43. Nadia wanted to find out how much light passes through materials W, X, Y and Z. She set up the experiment as shown below.

The graph below shows the results she obtained.

Nadia wants to make an aquarium.

Which material would be the most suitable to make part A? Explain your answer. [2]

_____

_____

_____

2

- End of Paper -

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EXAM PAPER 2014
LEVEL : PRIMARY 4
SCHOOL : AITONG
SUBJECT : SCIENCE
TERM : SA1

Q1	1	Q7	2	Q13	3	Q19	3	Q25	2
Q2	4	Q8	3	Q14	3	Q20	2	Q26	4
Q3	2	Q9	3	Q15	4	Q21	1	Q27	2
Q4	1	Q10	3	Q16	1	Q22	2	Q28	3
Q5	4	Q11	2	Q17	2	Q23	1	Q29	1
Q6	1	Q12	1	Q18	3	Q24	2	Q30	3

Q31	(a)	(i) D (ii) B
	(b)	Animal A gives birth to live young but animal C lays eggs.
	(c)	It does not give birth to live young and it can fly.
Q32	(a)	(i) Living things can reproduce. (ii) Living things can grow.
	(b)	The young and the adult will not need to compete with one another for food.
Q33	(a)	
	(b)	If part X is removed from the seedlings, it would not have any food and will die.
Q34	(a)	It absorbs water.
	(b)	It would cause the amount of moisture in the box to decrease keeps leather dry and prevent mould from growing as mould cannot grow without water.
Q35	(a)	(i) Set-up P (ii) Set-up R
	(b)	(i) More small roots result in more water being absorbed. (ii) More small roots result in more soil held more firmly.
Q36	(a)	It will allow the digestive juice to act on the food to be digested.
	(b)	Food K. The entire solution remain yellow-brown. This shows that starch is no longer present.
Q37	(a)	(i) The biscuit is crushed or uncrushed (ii) Time taken for the biscuit to get digested.
	(b)	The biscuit in Set-up B was digested faster as the biscuit was in small pieces. This increases the exposed surface area of the biscuit for the digestive juices to act on.

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Q38	(a)	The aim of the experiment is to find out which material is the hardest.
	(b)	Material P. Material P can scratch material R and Material R cannot scratch Material P.
Q39	(a)	B → A → D → C
	(b)	Material B. The length of the material stained blue is the most which shows that it absorbed the most water thus Material B would be most suitable to clean up a water spill most effectively.
Q40	(a)	Air in container A cannot escape. It takes up space and water cannot enter the container so container A is light thus it will float.
	(b)	Air is container B can escape through the hole at the top of the container B so water can enter through the hole at the bottom to take up the space previously occupied by the air so container B is heavy thus it will sink to the bottom.
Q41	(a)	
	(b)	
Q42	(a)	Light travels in a straight line and it was blocked by the circular card.
	(b)	
	(c)	The shadow will be bigger.
Q43		Y. The amount of light recorded passes through material Y was the most. Material Y is transparent thus the fish can be seen.

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Anglo-Chinese School (Primary)

MID-YEAR EXAMINATION 2014
SCIENCE
PRIMARY FOUR
BOOKLET A

Name: _____ ( ) **Class: Primary 4** ___

Date: 8 May 2014 **Duration of paper: 1 h 45 min**

_____
Parent's/Guardian's signature

INSTRUCTION TO CANDIDATES.

1. This question paper consist of 20 printed pages including this cover page.
2. Do not turn this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Shade your answer on the Optical Answer Sheet (OAS) provided.

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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. [60 marks]

1 Ethan used object P to scratch a block. A scratch mark could be seen on the block, as shown in the diagram below.

What can you conclude based on the above observation?

(1) Object P is harder than the block

(2) The block is harder than object P.

(3) Object P is stronger than the block.

(4) The block is stronger than object P.

2 Which one of the following groups of organs forms the human respiratory system?

(1) Nose, Mouth and Lungs

(2) Nose, Windpipe and Lungs

(3) Gullet, Windpipe and Lungs

(4) Mouth, Windpipe and Gullet

(Go on to the next page)

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3 The flowchart below shows the characteristics of three materials, A, B and C.

Which of the following could objects A, B and C be?

	A	B	C
(1)	Ceramic	Clear Glass	Clear Plastic
(2)	Wood	Clear Plastic	Clear Glass
(3)	Wood	Fabric	Clear Glass
(4)	Rubber	Metal	Clear Glass

4 Which one of the following is a characteristic of all living things?

(1) It can make its own food.

(2) It responds to changes.

(3) It gives birth to live young.

(4) It moves from place to place.

(Go on to the next page)

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5 Kenneth wanted to test the strength of a magnet at various points, X, Y and Z, as shown in the diagram below.

He then placed the magnet into a container full of paperclips.

Which one of the following bar graphs best represents the number of paperclips attracted to the magnet when it was taken out of the container?

(1)

(2)

(3)

(4)

(Go on to the next page)

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6 Joel carried out an experiment with four rods, D, E, F and G. He brought a bar magnet near to the ends of each rod and observed what happened.

He recorded his observations in the table below.

Rod	Observations
D	Nothing happened when Rod D was brought near to the bar magnet.
E	Rod E was attracted by the S-pole of the bar magnet.
F	Rod F was repelled by the N-pole of the bar magnet.
G	Rod G was attracted by the N-pole of the bar magnet.

Which rod is definitely a magnet?

(1) Rod D

(2) Rod E

(3) Rod F

(4) Rod G

(Go on to the next page)

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7 Study the classification chart below carefully.

Which one of the following best represents objects S, T and U?

	S	T	U
(1)	Aluminium	Steel	Copper
(2)	Rubber	Cobalt	Copper
(3)	Plastic	Cobalt	Iron
(4)	Wood	Copper	Nickel

8 Which one of the following statements about the skeletal system is **not** correct?

(1) It supports the body.

(2) It gives the body shape.

(3) It helps to break down food.

(4) It protects the important organs in the body.

(Go on to the next page)

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9 Study the flowchart below.

Which one of the following correctly represents A, B and C?

	A	B	C
(1)	Gives birth to live young?	Has two legs?	Has hairs?
(2)	Lays eggs?	Has two legs?	Has feathers?
(3)	Lays eggs?	Has a beak?	Has hairs?
(4)	Lays eggs?	Lives on land?	Has feathers?

10 An air-tight metal container was used to hold substance X. The table below shows the mass and volume of substance X in the container as more of it was added into the container.

Mass (g)	5	6	7	8	9
Volume (ml)	3000	3000	3000	3000	3000

Substance X is most likely to be _____.

(1) sand

(2) oxygen

(3) plasticine

(4) toothpaste

(Go on to the next page)

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11 Study the diagram below carefully. The following buttons are classified into three different groups.

The above buttons are grouped according to their _____.

A Shape

B Patterns within the buttons

C Number of holes within the buttons

(1) A and B only

(2) B and C only

(3) A and C only

(4) A, B and C

12 Which of the following characteristics show that a cat is a mammal?

A It lives on land.

B It has hairs on its body.

C It responds to changes.

D It feeds its young with milk.

(1) A and B only

(2) B and D only

(3) C and D only

(4) A, B and D only

(Go on to the next page)

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13 Nigel classified the objects in his bag using the classification chart shown below.

Which one of the following things has been classified **wrongly**?

(1) Pen

(2) Paper

(3) Stapler

(4) Scissors

14 Robert pushed a balloon into a plastic bottle and stretched its mouthpiece over the opening of the bottle. Then he blew into the bottle but the balloon could not inflate fully as shown in the diagram below.

Which one of the following actions would allow the balloon to inflate more fully in the bottle?

(1) Use a glass bottle.

(2) Use a smaller balloon.

(3) Make a hole in the balloon.

(4) Make a hole in the plastic bottle.

(Go on to the next page)

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15 The diagram below shows three cylinders of the same size but made of different materials.

Which one of the following statements about the three cylinders is correct?

(1) They all have equal mass.

(2) They all have the same volume.

(3) Only the clay and wooden cylinder have the same mass.

(4) The iron cylinder cannot be compressed but the wooden and clay cylinders can be compressed.

16 When a stone was lowered into the water in the displacement can as shown below, water was seen flowing into the beaker.

What does V represent?

(1) Mass of the stone

(2) Shape of the stone

(3) Volume of the stone

(4) The state of matter of the stone

(Go on to the next page)

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17 The diagrams below show some apparatus used to measure the volume of liquids.

If each apparatus is to be used only once, which one of the following correctly arranges the above apparatus according to the maximum volume of liquid each apparatus can measure in **descending order**?

(1) P, S, Q, R

(2) R, Q, S, P

(3) Q, P, R, S

(4) S, R, P, Q

(Go on to the next page)

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Refer to the flowchart below to answer Questions 18 to 20.

18 Which one of the following is likely to be P?

(1) Rain

(2) Heat

(3) Stone

(4) Oxygen

19 Which one of the following is likely to be Q?

(1) Light

(2) Alcohol

(3) Steel rod

(4) Carbon dioxide

(Go on to the next page)

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20 Which of the following statements are true about R?

A R is a gas.

B R has mass.

C R occupies space.

D R has a definite shape.

(1) A and B only

(2) C and D only

(3) A, B and C only

(4) A, B, C and D

21 Which one of the following is **not** a source of heat energy?

(1) The Sun

(2) The Moon

(3) A burning candle

(4) A live human body

(Go on to the next page)

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22 Study the diagram below carefully. Both containers are of the same size.

Which of the following are true about Liquid X and Liquid Y?

A Liquid X and Liquid Y have the same mass.

B Liquid X has a smaller volume than Liquid Y.

C Liquid X occupies the same amount of space as Liquid Y.

D Liquid X can be compressed while Liquid Y cannot be compressed.

(1) A and B only

(2) B and C only

(3) A, B and C only

(4) A, B, C and D

(Go on to the next page)

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23 A hole was made at the bottom of a plastic cup. The cup was then inverted and pushed vertically downwards into a basin of water as shown in the diagram below.

It was observed that the water level in the cup rose up and the water covered the cup entirely as shown below.

Which one of the following statements best explains the observation above?

(1) Water has no definite shape, allowing the water to enter the cup and causing the water level to rise.

(2) Water has a definite volume, allowing the water to enter the cup and causing the water level to rise.

(3) The air inside the cup is compressed by the water and the cup, allowing the water to enter the cup and causing the water level to rise.

(4) The air inside the cup escapes through the hole, allowing space for water to enter the cup and causing the water level to rise.

(Go on to the next page)

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24 Dave wanted to launch his water rocket as shown in the diagram below.

The distance a water rocket can fly depends on the amount of air pumped into the rocket. When more air is pumped in, the amount of air in the rocket increases.

Which one of the following properties of air best explains why Dave was able to pump in more air to increase the amount of air in his rocket?

(1) Air has mass.

(2) Air takes up space.

(3) Air can be compressed.

(4) Air has no definite shape.

25 James had a cup of water. The volume of water was 100 ml and its temperature was 20°C.

Which one of the following actions would result in a loss of heat from the water?

(1) Placing the cup of water under the sun.

(2) Placing a hot spoon into the cup of water.

(3) Placing the cup of water in a room at 32°C.

(4) Placing the cup of water into the freezer compartment of a refrigerator.

(Go on to the next page)

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26 The container of water was heated by the flame of a bunsen burner. for 30 minutes

Which one of the following graphs shows the change in temperature of water over ~~a~~ the period of 30 minutes?

(Go on to the next page)

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27 Which one of the following statements best describes temperature?

(1) It is a form of matter.

(2) It is a form of energy that makes things hot.

(3) It can only be used to describe solids and liquids.

(4) It is a measurement of the degree of hotness or coldness of an object.

28 Joe poured two identical liquids from Beakers P and Q into Beaker R, as shown in the diagram below. The volumes of both liquids were the same.

Which one of the following is most likely the temperature of the liquid in Beaker R?

(1) 35°C

(2) 60°C

(3) 90°C

(4) 125°C

(Go on to the next page)

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29 An experiment was conducted using two identical beakers, X and Y. Beaker X was filled with marbles to the 100 cm^3 mark while Beaker Y was filled with water to the 100 cm^3 mark as shown in the diagram below.

After pouring all the water from Beaker Y into Beaker X, it was observed that the new water level water in Beaker X was more than 100 cm^3 but less than 200 cm^3.

Which one of the following statements best explains the observation?

(1) Water has a definite shape.

(2) Water was compressed by the marbles in Beaker X.

(3) The marbles in Beaker X absorbed some of the water.

(4) Water filled the gaps between the marbles in Beaker X.

(Go on to the next page)

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30 Faizal puts a metal spoon and some ice cubes into a beaker of hot water as shown in the diagram below.

Which of the following will gain heat from the hot water?

A beaker

B ice cubes

C metal spoon

(1) A and B only

(2) B and C only

(3) C and A only

(4) A, B and C

END OF BOOKLET A

Please go on to Booklet B

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Anglo-Chinese School (Primary)

MID-YEAR EXAMINATION 2014
SCIENCE
PRIMARY FOUR
BOOKLET B

Name: _____ ( ) **Class: Primary 4 ___**

Date: 8 May 2014 **Duration of paper: 1 h 45 min**

_____
Paret's/Guardian's signature

INSTRUCTIONS TO CANDIDATES

1. This questions paper consists of 13 printed pages including this cover page.
2. Do not turn over this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Write all your answers in this booklet.

Booklet	Maximum marks	Marks obtained
A	60	
B	40	
Total	100	

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For questions 31 to 44, write your answers in the spaces provided in this booklet.

The number of marks available is shown in the brackets [ ] at the end of each question or part question. (40 marks)

---

31 The diagram below shows the human digestive system.

(a) Based on the diagram above, identify the part (A, B or C) where

(i) digestion is completed : _____ [1]

(ii) water and dissolved mineral salts are absorbed : _____ [1]

(b) How does chewing our food aid in the digestion of food? [1]

_____

_____

(Go on to the next page)

Score	/ 3

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32 The picture below shows mushrooms growing on a piece of rotting log.

(a) Which group of organisms does mushrooms belong to? [1]

_____

_____

(b) How does the mushroom reproduce? [1]

_____

_____

(c) Why do the mushrooms grow on the piece of rotting log? [1]

_____

_____

(Go on to the next page)

Score	/ 3

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33 Study the flowchart below:

Based on the above flowchart,

(a) State one similarity between animal A and animal B. [1]

_____

_____

(b) State one difference between animal C and animal D. [1]

_____

_____

(Go on to the next page)

Score	/ 2

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34 Study the picture shown below.

(a) Identify the organs labelled:

A: _____ [1]

B: _____ [1]

(b) State two functions of the respiratory system. [2]

_____

_____

35 Put a tick (✓) in the appropriate boxes to indicate if each statement is true or false. [2]

Statement	True	False
All matter can be seen.		
All matter can be compressed.		
An object that floats does not have mass.		
Volume is the amount of space an object occupies.		

(Go on to the next page)

Score	/ 6

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36 The diagram shows a plant.

(a) Name plant part X. [1]

_____

_____

(b) What would happen to the plant when part Y is damaged by strong wind as shown above? Explain your answer. [2]

_____

_____

(Go on to the next page)

Score	/ 3

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37 A measuring cylinder and a jug of water as show in the diagram below can be used to find the volume of a rock.

A measuring cylinder A jug of water A rock

Arrange the following steps in order to describe the correct procedure to find the volume of the rock, by indicating 1, 2, 3 and 4. [2]

(a) Lower the rock gently into the measuring cylinder of water, making sure that the rock is completely underwater. _____

(b) Record the volume of water in the measuring cylinder at the beginning. _____

(c) Pour some water into the measuring cylinder. _____

(d) Record the new volume of water. Then, subtract from it, the volume of water that was in the measuring cylinder at the beginning. _____

(Go on to the next page)

Score	/ 2

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38 Three syringes, A, B and C, were filled with different substances as shown in the diagrams below. The nozzles were blocked by a finger each.

(a) In which of the syringe(s), A, B or C, can the plunger(s) be pushed in ~~completely?~~ the most [1]

(b) Explain your answer in (a), by comparing the properties of matter in all three syringes, A, B and C. [2]

(Go on to the next page)

Score	/ 3

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39 Deming used a measuring cylinder and a beaker of water to measure the volume of a ball of plasticine. After that, he flattened the plasticine, ensuring its mass remained the same. He then measured the volume of the flattened plasticine.

(a) What property of the plasticine has been changed in Deming's experiment? [1]

_____

(b) What is the aim of Deming's experiment? [1]

_____

_____

(c) What would happen to the volume of the flattened plasticine? [1]

_____

40 Ashley wanted to magnetize an iron nail. He took an electrical wire and coiled it round an iron nail. He then connected the ends of the wire to a battery as shown below. The iron nail became a magnet and was able to attract some paper clips.

(a) What would Ashley observe if the battery was removed from the above set-up? [1]

_____

_____

(b) Suggest two changes that Ashley can do to the above set-up to make it attract more paper clips. [2]

(i) _____

(ii) _____

(Go on to the next page)

Score	/ 6

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41 Fatimah wanted to find out how the temperature of water affects the time taken for sugar to dissolve.

(a) Which of the following variables should she keep the same for her experiment to be a fair one?

Place a tick (✔) in the table below for the variable(s) that should be kept the same. [2]

Variables	Keep the same
Type of sugar	
Amount of sugar	
Amount of water	
Temperature of water used in the experiment	

She carried out her investigation three times and recorded her results as shown in the table below.

Temperature of water (°C)	Time taken for the sugar to dissolve (minutes)		
	Test 1	Test 2	Test 3
30	5	6	5
40	4	3	3
50	1	1	2

(b) Based on the results in the table above, what can Fatimah conclude from the above experiment? [1]

_____

_____

(Go on to the next page)

Score	/ 3

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42 Suri wanted to find out how long it will take to heat three identical pots of water as shown in the diagram below, to reach a temperature of 50 °C.

(a) What is the changed variable in Suri's experiment? [1]

_____

(b) What measuring instrument should Suri use to measure the temperature of the water safely and accurately? [1]

_____

The graph below shows how the water temperature changed in each pot.

(c) Based on the graph above, explain why Suri's test was not a fair one. [1]

_____

_____

(Go on to the next page)

Score	/ 3

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43 Muthu balanced two similar glass containers, P and Q, each containing 200 ml of water on a balance as shown in the diagram below. The maximum volume each container can hold is 300 cm^3. Each container had a one-way valve that allowed air to be pumped in but did not allow air to escape.

Muthu pumped in an additional 50 cm^3 of air into Container P but did not do anything to Container Q.

(a) Predict if the balance will tilt towards the left, right, or remain balanced. [1]

_____

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

_____

_____

(c) What will the volume of air in P and Q be at the end of the experiment? [1]

_____

(Go on to the next page)

Score	/ 3

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44 Michael had a chocolate bar which had fruits and nuts in it. He wanted to separate the fruits and nuts from the chocolate. He put the chocolate bar into a container and heated it.

(a) State the change of state that happened when Michael heated the chocolate bar. [1]

_____

(b) Explain how the change in state identified in (a) happened. [1]

_____

_____

After heating, Michael immediately used a sieve as shown below to separate the chocolate from the fruits and nuts by pouring the chocolate mixture into it and collecting the chocolate in another container.

(c) State the property of the liquid chocolate that allowed it to flow through the sieve. [1]

_____

END OF BOOKLET B

Please check all your answers carefully

Score	/ 3

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ANSWER SHEET

EXAM PAPER 2014
SCHOOL : ACS
PRIMARY : P4
SUBJECT : SCIENCE
TERM : SA1

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

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
2	3	3	2	1	4	3	4	1	4	2	4	4

31)a)i)B ii)C
b)Chewing helps grind break the food into smaller picas.

32)a)fungi
b)By spores
c)They absorb nutrients from the rotting log.

33)a)Both animal lived in water.
b)Animal C is covered with fur but animal D is not.

34)a)A: Heart B: lungs
b)The respiratory system helps us to breathe and protects the heart.

35)F , F, F, T

36)a)Flower.
b)It will die water taken in by the roots cannot reach the other parts of the plant and food made by the leaves cannot reach the others parts of the plant.

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37)a)3
b)2
c)1
d)4

38)a)Syringe C.
b)Plasticine and water cannot be compress as solid and liquid have definite volume, while air can be compress as gas does not have definite volume.

39)a)The shape of the plasticine has been change.
b)The aim was to find out if he flattened it, the volume or the mass will change.
c)The volume will remain the same.

40)a)He will observe that the iron nail will not attract any more paper clips.
b)i)He should put in more batteries.
ii)He should coiled the wire a few more times.

41)a)type of sugar
Amount of sugar
Amount of water
b)The higher the temperature of the water the taster the sugar dissolves.

42)a)The water level.
b)The thermometer.
c)The temperature of the water in the 3 part are different at the start of the experiment.

43)a)To the left.
b)There is an increase in air in P. As air has mass, pull increase in mass.
c)100cm3 for each container.

44)a)The chocolate bar will melt.
b)Heat was gained by the chocolate bar.
c)Liquid chocolate has no definite shape.

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CATHOLIC HIGH SCHOOL
SEMESTRAL ASSESSMENT 1
2014
PRIMARY FOUR

SCIENCE

BOOKLET A

Name: _____ ( )

Class: Primary 4 - _____

Date: 16 May 2014

24 questions

48 marks

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

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.
Follow all instructions carefully.
Answer all questions.
Shade your answers in the Optical Answer Sheet (OAS) provided.

This booklet consists of 12 printed pages, excluding cover page.

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Booklet A (24 × 2 marks)

For each question from 1 to 24, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade your answer on the Optical Answer Sheet. (48 marks)

1 Which one of the following shows the characteristic of living things?

(1) A kite is flying in the air.

(2) A fire flame is becoming bigger.

(3) A bird is flying away from danger

(4) A car is moving slowly on the road.

2 Study the flow chart below.

Which one of the following best represents the fern?

(1) A

(2) B

(3) C

(4) D

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3 How are the two animals below different from each other?

eagle penguin

A The place they live in

B Their outer coverings

C Their ways of movement

(1) B only

(2) A and B only

(3) A and C only

(4) A, B and C

4 Which of the following statements are true about bacteria?

A Bacteria are harmful to us.

B Bacteria are very tiny living things.

C Bacteria can make their own food.

D Bacteria can only be seen using a microscope.

(1) A and B only

(2) A and D only

(3) B and C only

(4) B and D only

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5 Bernice had two slices of bread. She sprinkled a few drops of water on bread A and toasted bread B. She left bread B to cool to room temperature. She then put each of the bread into two dry separate zip-lock bags and placed them on a table.

What would Bernice most likely observe after a week?

(1) No changes were observed on both bread A and B.

(2) There were more black patches on bread B than bread A.

(3) There were black patches on bread A but not on bread B.

(4) There were black patches on bread B but not on bread A.

6 Ali tied a black plastic bag around the top part of a plant. He placed it on the window sill and watered it everyday.

After a few days, the plant died. Which one of the following parts could not carry out its/their function(s) and caused the plant to die?

(1) Stem

(2) Roots

(3) Flower

(4) Leaves

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7 The functions of four body systems, A, B, C and D, are stated below.

System A To support the body and give it the shape
System B Takes in oxygen and gives out carbon dioxide
System C Transports food, water, oxygen and waste within the body
System D Breaks down food into simple substances for the body to absorb

Which one of the following correctly represents systems A, B, C and D?

	A	B	C	D
(1)	Skeletal	Respiratory	Circulatory	Digestive
(2)	Digestive	Skeletal	Respiratory	Circulatory
(3)	Skeletal	Circulatory	Digestive	Respiratory
(4)	Digestive	Circulatory	Respiratory	Skeletal

8 The diagram below shows the human digestive system.

What happens at the part labelled H?

(1) Digestion is completed.
(2) Digested food is stored.
(3) Excess water is removed.
(4) Undigested food is absorbed.

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9 Ravi's teacher asked him to state the differences between an adult cockroach and a cockroach nymph. Which of the following differences given by Ravi are correct?

A A cockroach nymph is smaller than an adult cockroach.

B A cockroach nymph does not have wings but an adult cockroach has wings.

C A cockroach nymph feeds on leaves but an adult cockroach feeds on almost anything.

(1) A and B only

(2) A and C only

(3) B and C only

(4) A, B and C

10 4 mealworms, P, Q, R and S, are at different stages of growth. They are placed in four different containers. 8g of food is placed in each container together with the mealworm at the start of the experiment. The table below shows the amount of food left in the containers after 2 days.

Mealworm	Amount of food left in the container (g)
P	5
Q	0
R	4
S	8

Which mealworm is most likely to be in the pupa stage?

(1) P

(2) Q

(3) R

(4) S

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11 Which of the following shows the correct order of a seed growth of a flowering plant?

A The root appears.

B The seed leaf shrivels.

C The shoot grows out from the seed.

D The seed increases in size and the seed coat splits.

(1) A → D → B → C

(2) A → B → C → D

(3) D → C → B → A

(4) D → A → C → B

12 Sarah conducted an experiment to find out whether the amount of water will affect the growth of seeds. She placed a few seeds in each of the four containers.

The table below shows the amount of water that Sarah used to water the plants each day. It also shows which containers received air and sunlight.

Container	Amount of water (ml)	Air	Sunlight
A	5	Yes	Yes
B	5	Yes	No
C	10	Yes	Yes
D	15	No	Yes

Which two containers should she use if she wants to find out whether the amount of water will affect the growth of seeds?

(1) A and B only

(2) A and C only

(3) B and C only

(4) B and D only

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13 Look at the picture of a cooking pot below.

Which of the following represents the materials for A and B?

	A	B
(1)	Plastic	Metal
(2)	Plastic	Wood
(3)	Metal	Metal
(4)	Metal	Wood

14 Roy was given 4 rods, G, H, J and K. He tested each rod with a bar magnet. His observations are as follows:

Rod G was repelled by the North pole of the bar magnet.

Nothing happened when the bar magnet was brought close to Rod H.

Rod J was attracted by the North pole of the bar magnet.

Rod K was attracted by the South pole of the bar magnet.

Which rod is definitely a magnet?

(1) G

(2) H

(3) J

(4) K

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15 Look at the set-up below. Two similar strips C and D were hung. Both were made of different materials.

Two boxes of the same mass were hung onto strips C and D. The diagram below shows what happened after ten seconds.

Based on the results, what can we conclude about the materials above?

(1) Material C is harder than material D.

(2) Material C is stronger than material D.

(3) Material C is more elastic than material D.

(4) Material C is more flexible than material D.

16 Jack was playing with a bar magnet. He accidentally dropped the magnet and it broke into two pieces. What will happen to the magnet now?

(1) The bar magnet is no longer a magnet.

(2) The bar magnet will gain more magnetism.

(3) Each piece of the bar magnet will become a magnet itself.

(4) One half will become the North pole and the other will become the South pole.

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17 Max magnetised four similar iron nails, M, N, O and P, using the stroking method. He then tested the strength of each of them using a box of paper clips. He recorded the number of strokes applied to all the iron nails and the number of paper clips that was attracted to all the iron nails in the table below.

Iron nail	Number of strokes	Number of paper clips attracted
M	10	3
N	25	8
O	45	13
P	70	18

What can Max infer from the experiment?

(1) The strength of the iron nail remains the same as before.

(2) The magnetism of the iron nail is weaker when more strokes are applied.

(3) The magnetism of the iron nail is stronger when more strokes are applied.

(4) The number of strokes applied does not affect the strength of the iron nail.

18 The picture below shows a door stopper which is used to keep the door open.

How does a door stopper keep a door open?

(1) The magnet on the door stopper attracts the door.

(2) The metal attachment on the door attracts the wall.

(3) The magnet on the door stopper attracts the metal attachment on the door.

(4) The metal attachment on the door attracts the magnet on the door stopper.

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19 A wooden pole is placed in the centre of a square board as shown in the diagram below.

Which of the bulbs have to be switched on such that the shadows of the wooden pole are as shown in the diagram above?

(1) A and B only

(2) A and C only

(3) B and D only

(4) C and D only

20 Jane used a light sensor attached to a data logger to find out how much light passed through three different objects A, B and C. The objects were of equal thickness. She recorded the results in the graph below.

Which one of the following are objects A, B and C?

	A	B	C
(1)	Wood	Tissue paper	Clear glass
(2)	Clear glass	Tissue paper	Wood
(3)	Tissue paper	Clear glass	Wood
(4)	Thick cardboard	Clear glass	Tissue paper

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21 Look at the picture below.

A metal spoon was left in a bowl of hot soup. After some time, the metal spoon felt hot because heat from the _____.

(1) bowl flowed to the hot soup

(2) spoon flowed to the hot soup

(3) hot soup flowed to the spoon

(4) surrounding air flowed to the spoon

22 The diagram below shows a glass of hot milk at 90°C in a tub of water at 38°C.

What could be the possible temperature of the milk after 10 minutes?

(1) 38°C

(2) 50°C

(3) 90°C

(4) 95°C

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23 4 similar beakers containing different amounts of water at different temperatures are being heated.

Beaker A	Beaker B	Beaker C	Beaker D
200 ml	200 ml	500 ml	500 ml
10°C	20°C	10°C	20°C

Which beaker of water will be the first to boil?

(1) A

(2) B

(3) C

(4) D

24 Edward set up an experiment as shown below. He placed a test tube containing some water into a beaker of mixture of ice and salt. After five minutes, the water in the test tube froze and turned into ice.

Which one of the following best describes what happened to the water in the test tube and the mixture of ice and salt in the beaker?

	Water in the test tube	Mixture of ice and salt
(1)	Lost heat	Lost heat
(2)	Lost heat	Gained heat
(3)	Gained heat	Gained heat
(4)	Gained heat	Lost heat

End of Booklet A

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CATHOLIC HIGH SCHOOL
SEMESTRAL ASSESSMENT 1
2014
PRIMARY FOUR

SCIENCE

BOOKLET B

Name: _____ ( )

Class: Primary 4 - _____

Date: 16 May 2014

Parent's Signature: _____

Booklet A	48
Booklet B	32
Total	80

10 questions

32 marks

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

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.
Follow all instructions carefully.
Answer all questions.
Write your answers in this booklet.

This booklet consists of 10 printed pages, excluding cover page.

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Booklet B (32 marks)

For questions 25 to 34, write your answers in this booklet.
The number of marks available is shown in brackets [ ] at the end of each question or part question. (32 marks)

25 The classification chart below shows how some animals are grouped according to their outer coverings.

(a) Which one of the above animals is classified wrongly? [1]

_____

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

_____

_____

(c) Give a heading for each group. [1]

(i) Group A: _____

(ii) Group B: _____

(iii) Group C: _____

(Go on to the next page)

SCORE	/ 3

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26 Joe placed a balsam plant into a jar containing blue-coloured water as shown below.

(a) What would he observe after a few days? [1]

_____

_____

(b) What does the above experiment show? [1]

_____

_____

(c) What would happen to the plant after two weeks if all the leaves were removed? [1]

_____

_____

(Go on to the next page)

SCORE	/ 3

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27 The graph below shows the amount of digested food while it passes through the different parts of the human digestive system.

(a) K, L, M and N are parts of the human digestive system. Identify the parts labelled K and N respectively. [1]

(i) K: _____

(ii) N: _____

(b) What does the graph of Part L show? [1]

_____

_____

(c) What helps to digest the food at Part K? [1]

_____

_____

(Go on to the next page)

SCORE	/ 3

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28 The flow chart below shows how Ben classified the animals A, B, C and D.

(a) Based on the flow chart above, describe the life cycle of Animal B. [1]

_____

_____

(b) Ben claims that Animal C is a mosquito. [2]
Do you agree? Explain your answer.

_____

_____

(Go on to the next page)

SCORE	/ 3

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29 Abdul conducted several tests on materials A, B, C and D. His results are recorded in the table below.

Property	A	B	C	D
Can bend	No	Yes	No	Yes
Breaks when dropped	Yes	No	No	No
Is waterproof	Yes	Yes	Yes	No

(a) Which one of the above materials A, B, C or D would he use to make a raincoat? [1]

_____

_____

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

_____

_____

(c) Which one of the above materials A, B, C or D could be ceramic? [1]

_____

_____

(Go on to the next page)

SCORE	/ 3

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30 Look at the set-up below.

(a) What would be observed when Ken placed some paper clips at the end of the iron rod? [1]

_____

_____

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

_____

_____

(c) Other than increasing the number of coils on the iron rod, what else could Ken do to make a stronger electromagnet? [1]

_____

_____

(d) If the batteries were being removed from the set-up, what would Ken observe? [1]

_____

_____

(Go on to the next page)

SCORE	/ 4

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31 May carries out the following experiment. No light can be seen when she looks through the hole in Board A.

Explains why this is so. [2]

_____

_____

_____

(Go on to the next page)

SCORE	/ 2

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32 Jane put an object into each similar wooden box below. She made a hole on one side of each box and covered the opening of the boxes with a brick and clear glass as shown below. She then shone a torch over each box and peeped in through the hole at the side of the box.

(a) In which set-up was she able to see the object? Explain your answer. [2]

Jane then took out the object and shone the light on it as shown in the diagram below.

(b) Based on the diagram above, write down one thing Jane could do with the object if she wanted to create a shadow that was smaller. [1]

(c) How is a shadow formed? [1]

(Go on to the next page)

SCORE	/ 4

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33 2 identical glasses with equal amounts of water were left on a kitchen table at room temperature (29°C) as shown below. The temperature of the water in glass A was at 90°C while the temperature of the water in glass B was at 10°C.

(a) What would happen to the water in each glass after one hour? [2]
Put a tick (√) in the correct boxes below.

	Lost heat	Gained heat	Increased in temperature	Decreased in temperature
Water in glass A	✓			
Water in glass B				

(b) After 6 hours, what would be the temperature of water in each glass? [1]

_____

_____

(Go on to the next page)

SCORE	/ 3

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34 The diagram below shows two flasks, X and Y, connected by a tube that has a drop of ink.

(a) If Flask X is placed into a basin of hot water, what can you observe? [1]

_____

_____

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

_____

_____

(c) What can you do to Flask Y to move the ink towards Flask X? [1]

_____

_____

(d) Justin has a dented ping pong ball.

Based on the experiment above in part (a), what can he do to get the dented ping pong ball to return to its original shape? [1]

_____

_____

End of Booklet B

SCORE	/ 4

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Catholic High School Semestral Assessment 1 Primary Four Science 2014

Booklet A

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
3	2	3	4	3	4	1	3	1	4	1	2	1	1	2
16	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**						
3	3	3	2	1	3	2	2	2						

Booklet B

25 a The bat.
b Bat is a mammal and is covered with hair, however a bird is covered with feathers.
c (i) Outer covering of scales
(ii) Outer covering of feathers
(iii) Outer covering of hairs

26 a The leaves would turn blue and the water level decreases.
b The experiment shows that roots absorb water and the stem transport water to the leaves.
c The plant would die.

27 a (i) Mouth (ii) Small intestine
b Part L did not digest any food.
c The saliva (salivary amylase).

28 a Animal B has a three stage life cycle and does not lay eggs.
b No, I do not agree. Mosquito has a four-staged life cycle and lays eggs in water but animal C has a 3-staged life cycle and does not lay eggs in the water.

29 a Material B.
b Material B is flexible and does not break when dropped and is waterproof.
c Material A.

30 a The paper clips would be attracted to the iron rod.
b The iron rod is made out of a magnetic material, thus it would be an electromagnet.
c He can increase the number of batteries.
d The paperclips would not be attracted to the iron rod.

31 Light travels in a straight line and was blocked by Board B. Thus, light cannot pass through the holes that are not aligned in a straight line.

32 a Set-up B. As the wooden box is opaque, light cannot pass through the brick and she cannot see the object. The clear glass is transparent hence light can pass through the clear glass and be reflected off the object and into her eyes for her to see the object.
b She can move the torch further away from the object.
c A shadow is formed when an opaque or translucent material blocks the path of light.

33 a

√			√
	√	√	

b 29°C

34 a The ink droplet would move towards flask Y.
b Heat from the hot water causes the air in the flask to gain heat and expand. The expanded air then pushes the ink droplet towards flask Y.
c He can put flask Y into a basin of hot water at a higher temperature than the water in which flask X is immersed in.
d He can place the ping pong ball into a basin of hot water.

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Name : _____( )

Class : Primary 4 _____

CHIJ ST NICHOLAS GIRLS' SCHOOL

SIMPLE IN VIRTUE

STEADFAST IN DUTY

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Primary 4

Semestral Assessment 1 - 2014

SCIENCE

BOOKLET A

15 May 2014

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

30 questions
60 marks

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

This booklet consists of 21 printed pages.

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Section A : (30 x 2 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.

1. Sandra has 4 set-ups, A, B, C and D, as shown below.

Which of the set-ups shown above should Sandra use to find out if moisture and light are needed for germination?

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

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2. The diagram below shows the life cycles of two animals, A and B.

Life Cycle of A

Life Cycle of B

Which of the following pairs of animals identify animals, A and B, respectively?

	Animal A	Animal B
(1)	Dragonfly	Guppy
(2)	Chicken	Snake
(3)	Frog	Penguin
(4)	Beetle	Grasshopper

3. Study the classification table below.

Group X	Group Y
Duckweed	Lotus
Water hyacinth	Water lily

Which one of the following sets of headings best represent Group X and Group Y respectively?

	Group X	Group Y
(1)	Floating plants	Fully-submerged plants
(2)	Fully-submerged plants	Partially-submerged plants
(3)	Floating plants	Partially-submerged plants
(4)	Partially-submerged plants	Floating plants

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4. Janissa did a study on 3 animals, P, Q and R. She recorded her findings on the table as shown below.

Findings	Animal P	Animal Q	Animal R
Young resembles the adult.	√	√	X
Gives birth to young alive.	X	X	X
3 stages in the life cycle.	√	√	X
Breathes through lungs	√	X	X

What one of the following can animals, P, Q and R be?

	Animal P	Animal Q	Animal R
(1)	Chick	Cockroach	Lizard
(2)	Lizard	Mosquito	Beetle
(3)	Chick	Lizard	Butterfly
(4)	Lizard	Cockroach	Beetle

5. Which one of the following statement about flowers and leaves is correct?

(1) All flowers and leaves are edible.
(2) Flowers always give out a better smell than leaves.
Flowers can grow into fruits while leaves can make food.
All flowers are brightly coloured while all leaves are green.

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6. The diagram below shows how a piece of bread looked like over a period of three days.

Which of the following statements are true?

A The bread was toasted.

B The greenish spots belongs to a group called fungi.

C The greenish spots came from the spores in the air.

D The greenish spots obtained its nutrients from the air to grow

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

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7. Study the flowchart below carefully.

Which of the following can be represented by X, Y and Z respectively?

	X	Y	Z
(1)	Human	Bacteria	Butterfly
(2)	Grass	Bird's nest fern	Toad
(3)	Staghorn fern	Toadstool	Dragonfly
(4)	Moss	Mushroom	Duckweed

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8. The diagram below shows some animals.

eagle bat penguin flamingo

Which one of the animals does **not** belong to the same group as the rest?

(1) bat
(2) eagle
(3) penguin
(4) flamingo

9. The diagram below shows the top view of the leaves of a plant.

leaves

Which of the following describe(s) why the leaves are spread out?

A To trap more sunlight
B To store more food for the plant
C To absorb more water when it rains
D To take in more air from the surrounding

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

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10. Study the classification chart below.

Classify the animals, X, Y and Z , in the correct group above.

Animal X

Animal Y

Animal Z

	Group A	Group B	Group C
(1)	Y	X	Z
(2)	Z	X	Y
(3)	X	Z	Y
(4)	Z	Y	X

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11. Three containers of water were heated together at the same time for 10 minutes. The table below shows the amount of water in each container and the temperature of the water before and after they were heated.

Container	Amount of water (ml)	Starting Temperature (°C)	Ending Temperature (°C)
A	300	28	70
B	500	28	70
C	200	28	70

Which of the following graph shows the amount of heat gained by the water in the containers after 10 minutes of heating?

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12. Carol can scratch a chalk easily with an iron nail. However, she could hardly leave a scratch mark on the iron nail with the chalk.

This shows that the iron nail is _____ than the chalk.

(1) lighter
(2) harder
(3) stronger
(4) more flexible

13. Study the diagram below carefully.

Digestive juices are mixed with the food to help to digest it faster. At which parts, A, B, C and D, are digestive juices being mixed with the food?

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

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14. The diagram below shows the human skeletal system.

Which of the following statement is correct about A and B?

(1) They give us our body shape.
(2) They protect our internal organs.
(3) They enable us to stand upright.
(4) They enable the body to respond to changes around it .

15. Which of the following experiments correctly demonstrates the properties of matter?

(A)

(B)

(C)

(D)

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

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16. A flask has a capacity of $400cm^3$. $100cm^3$ of air is pumped into the flask. The final volume of air in the container is _____ cm^3.

(1) 100
(2) 300
(3) 400
(4) 500

17. Jenny set up the experiment below and concluded that _____.

(1) Object A is larger than object B.
(2) Object A has a greater mass than object B.
(3) Object A has a larger volume than object B.
(4) Object A occupies more space than object B.

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18. Object A was placed into the displacement can as shown below. When Object A was lowered into the can, water displaced was collected by the measuring cylinder as shown in Diagram 1. This process was repeated using 3 other objects, B, C and D, and the volume of water collected was measured for each object.

Diagram 1

Based on the volume of water collected for each of the 4 objects, A, B, C and D, which cylinder shows the object that occupies the most space?

(1)

(2)

(3)

(4)

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19. Alex poured some water into the communication vessel as shown below.

If Alex poured the water till it reached the dotted line shown in C, what would his observation of the water level be in the vessel?

(1) The water level in C is the lowest.
(2) The water level is the highest in A.
(3) The water level is the same in A, B, C, D and E.
(4) The water levels in A and D are higher than that in B and E.

Refer to the classification diagram below and answer questions 20 and 21.

20. Plasticine can be placed in Group _____.

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

21. What are the suitable headings for the classification diagram?

	Group W	Group X	Group Y	Group Z
(1)	Liquid	Solid	Non-matter	Gas
(2)	Non-matter	Liquid	Gas	Solid
(3)	Solid	Liquid	Gas	Non-matter
(4)	Solid	Gas	Non-matter	Liquid

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22. Two bar magnets are shown in the diagram below.

Which of the statement(s) are definitely true about the Magnets, A and B?

A Both magnets can attract an iron nail
B Both magnets have North and South poles.
C Magnet A has a stronger magnetic strength than magnet B.

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

23. E and H are the poles of Magnet X. Jean accidentally broke the magnet into two pieces.

Which one of the following represents the poles of E, F, G and H correctly?

	E	F	G	H
(1)	S	S	N	N
(2)	S	N	S	N
(3)	S	-	-	N
(4)	S	N	N	N

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24. Some metals are classified according to their magnetic properties in the table below.

Magnetic material	Non-magnetic material
Iron	Gold
Steel	Silver
Copper	Aluminium

Which metal is classified incorrectly?

(1) Iron
(2) Silver
(3) Copper
(4) Aluminium

25. In the set-up below, A, B, C and D, are four rings which pass through a smooth plastic rod.

Which one of the following shows the possible materials of the four rings?

	A	B	C	D
(1)	Steel	Magnet	Copper	Wood
(2)	Wood	Magnet	Steel	Magnet
(3)	Steel	Magnet	Magnet	Wood
(4)	Magnet	Steel	Wood	Magnet

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26. When an object is placed between the light source and the white screen, a shadow was cast on the white screen as shown below.

If a clear blue plastic sheet was at position X, what would be observed on the white screen?

(1)

(2)

(3)

(4)

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27. Jane placed a box between a torch and a screen as shown below.

What would she observe about the shadow when she moved the torch further from the box?

(1) There was no change at all.
(2) The shadow decreased in size.
(3) The shadow increased in size.
(4) The shadow became square in shape.

28. The diagram below shows a periscope.

Which of the following statements about light correctly describe why we can see the image of an object through a periscope?

A Light can bend.
B Light can be reflected.
C Light travels in a straight line.
D Light is given out by all objects.

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

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29. Jason was walking along a street with a lighted street lamp from point A to point C as shown in the diagram below.

Which one of the following graphs shows the change in the length of Jason's shadow as he walked from point A to C?

(1)

(2)

(3)

(4)

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30. The set-up below shows light shining on three shapes, A, B and C, made of cardboard. They are placed at different distances from the torch.

The diagram below shows what was seen on the screen.

Which one of the following correctly shows what shapes, A, B and C, are likely to be?

	A	B	C
(1)	Ring	Triangle	Rectangle
(2)	Ring	Rectangle	Triangle
(3)	Triangle	Rectangle	Ring
(4)	Rectangle	Ring	Triangle

END OF SECTION A

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Name : _____ ( )

Class : Primary 4 _____

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Primary 4

Semestral Assessment 1 – 2014

SCIENCE

BOOKLET B

15 May 2014

Booklet A	60
Booklet B	40
Total	100

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

14 questions
40 marks

Do not open this booklet until you are told to do so.
Follow all instructions carefully.
Answer all questions.
This paper consists of 16 printed pages.

Parent's Signature/Date

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Section B: 40 marks

For questions 31 to 44, write your answers in this booklet.

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

31. The diagram below shows a flowering plant.

(a) State two functions of Part T that ensure the survival of the plant. [2]

(i) _____

_____

(ii) _____

_____

(b) What will happen to the plant if all of S are removed? Explain your answer. [1]

_____

_____

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32. Study the flowchart below.

Based on the flowchart above, answer questions (a) to (c).

(a) Identify the letter that represents each of the following animals. [1]

(i) Penguin : _____

(ii) Guppy : _____

(b) Give an example of animal D. [1]

_____

(c) State the difference between animal C and animal E? [1]

_____

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33. The diagram below shows the life cycle of the mosquito.

(a) At which stage of the life cycle of the mosquito is harmful to humans? [1]

_____

(b) Based on what you can observe from the diagram, suggest an effective way of preventing the breeding of mosquitoes. [1]

_____

_____

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

_____

_____

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34. Samuel carried out an experiment on a seed growing into a seedling as shown below.

In the graph below, the two curves show the changes in the mass of the seed leaf and the shoot during the experiment.

(a) Which curve, X or Y, shows the changes in the mass of the seed leaf during the experiment? Explain your answer. [1]

_____

_____

(b) Is light important to the seeding after Day 8? Explain your answer. [1]

_____

_____

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35. The pictures below shows four animals, W, X, Y and Z.

Animal W	Animal X
Animal Y	Animal Z

Based on the pictures above, answer the following questions:

Which animal(s) shown is/are not insects?
Write the correct letter(s), W, X, Y and/or Z, in the box provided.

Give two reasons to support your answer [3]

Animal(s) _____ is / are **NOT** (an) insect(s).	
Reason 1	
Reason 2	

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36. The pictures below show two plants, A and B, which grows in the pond.

Plant A Plant B

(a) Based on what you can see from the pictures, how is Plant A different from Plant B? [1]

_____

_____

Plant C

(b) Plant C can also be found in the pond. It has air sacs which help it to stay afloat on water. How does this help the plant to survive? [1]

_____

_____

(b) Will Plants A, B and C, survive if they are planted on land? Explain your answer. [1]

_____

_____

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37. Alice conducted 3 different types of tests to find out the properties of four materials, W, X, Y and Z. The results were recorded in the table below.

Type of test conducted	Material W	Material X	Material Y	Material Z
Is it flexible?	No	Yes	Yes	No
Is it waterproof?	Yes	No	No	Yes
Does it break easily?	Yes	No	Yes	No

(a) Based on the table above, which material, X, Y or Z, would be the best to make part A of the goggles? [0.5]

_____

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

_____

_____

(c) Can the same material you have stated in (a) be used to make part B of the goggles? Explain why. [0.5]

_____

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38. Leonard wanted to find out about the properties of sand. He conducted 2 experiments as shown below.

He conducted each experiment twice and recorded his observations in the table below.

		1st	2nd
Experiment 1	Does it take the shape of the container?	Yes	Yes
Experiment 2	Can the plunger be depressed (pushed in)?	No	No

Based on his observations, he concluded that sand is a liquid.

(a) List down two properties of a liquid that made him arrive at this conclusion. [2]

Property 1: _____

Property 2: _____

(b) Do you agree with his conclusion? Explain. [2]

_____

_____

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39. Shop P provides special packaging services for tourists. Clothing purchased by tourists is stored into vacuumed storage bags. The vacuum storage bag is made of strong plastic. All the air in the vacuum storage bag is removed by a vacuum pump after clothes have been put into the bag. The diagram below shows how the clothes are being packed after using the vacuum pump and storage bag.

(a) What happened to the total mass of the storage bag with clothing after it had been vacuum-pumped? Explain your answer. [1]

_____

_____

_____

_____

(b) State one advantage of using this method of packing. [1]

_____

_____

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40. Jack set up the experiment as shown below.

He took a deep breath and blew into the straw.

(a) What would Jack observe about the water level in the inverted glass when he blew into the straw? [1]

_____

_____

(b) Give an explanation for your answer in (a). [2]

_____

_____

_____

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41. The diagram below shows different shapes, a triangle, a square and a circle, placed between a screen and a torchlight.

Shape	Material the shape is made from
Triangle	Frosted glass
Square	Cardboard
Circle	Clear plastic sheet

(a) Draw the shadows formed on **Screens, A, B and C,** when the torchlight is switched on. [1.5]

(b) How are shadows formed? [0.5]

_____

_____

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(c) Factory X uses a light sensor to count the number of identical cans on a moving belt.

The belt moves at a constant speed. As the cans pass between the light source and the sensor, they block light from reaching the sensor. The data recorded is shown in the graph below.

(i) From the graph, how many cans can be counted in 10 minutes? [1]

_____

_____

(ii) With the same set of equipment as show in the diagram in (c), how can Factory X use this setup to count more cans in 10 minutes? [1]

_____

_____

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42. Zoe conducted an experiment with two different materials, A and B, as shown in the two set-ups below. She ensured that the batteries and wires are in working condition before the experiment.

(a) Zoe observed that A could attract some iron paper clips but B could not when the batteries are connected. Explain her observation. [1]

_____

_____

(b) Without adding any additional batteries, what can Zoe do such that Set-up A can attract more paper clips? [1]

_____

_____

43. Jessica observed that Magnet X and Object Y were attracted to each other as shown below.

(a) Based on this observation only, give a reason why Jessica **cannot** conclude that Object Y is a magnet. [1]

_____

_____

(b) Using only Magnet X and Object Y, what should Jessica do to confirm whether Object Y is a magnet? Explain your answer. [2]

_____

_____

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44. Plants need as much sunlight as possible to grow well. Zoe wants to find out which pond provides the best condition for water plants to grow. She took water samples from Pond A, B and C, and conducted an experiment with the set-up below using the water samples. The experiment was conducted in a dark room.

The results were recorded in the table below.

Water samples from Pond	Amount of Light Detected (lux)		
	1st Reading	2nd Reading	3rd Reading
A	120	118	121
B	74	72	69
C	235	235	231

(a) In which pond, A, B or C, would water plants grow best? [1]

_____

(b) Name one variable Zoe should keep constant in this experiment. [1]

_____

(c) Why did Zoe repeat the experiment 3 times? [1]

_____

_____

END OF PAPER

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ANSWER SHEET

EXAM PAPER 2014
SCHOOL : CHIJ
PRIMARY : P4
SUBJECT : SCIENCE
TERM : SA1

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

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
4	3	1	3	1	2	3	3	2	2	1	3	2

31)a)i)The stem transports mineral salts and water to all parts of the plant.
ii)The stem holds the plant upright to reach for sunlight to make food.
b)The plant will die, as only the leaves can make food.

32)a)i)G. ii)E.
b)An example of Animal D is a platypus.
c)Animal C has hair, but animal E does not have hair.

33)a)The adult stage.
b)Remove all the stagnant water.
c)Mosquitos can lay egg in even small puddles of water, and it must be still so if we remove all still water we can prevent mosquito breeding.

34)a)Curve Y, the mass of seed leaf is reduced, provided stored food for the seedling as it grows.
b)Yes, When adult leaves are grown, the seedling needs light to make food.

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35)Z
1)Animal Z has 8 legs but insects have 6 legs.
2)It does not have three body parts.

36)a)Plant A's leaves spread out higher for sunlight but not plant B.
b)Plant C will be able to absorb more sunlight.
c)No, they will not have enough water.

37)a)Material Z.
b)When the user is swimming, he or she must see were he or she is swimming to, or else they may get hurt, and the lens may break and hurt the user. But Z is not flexible, waterproof, and does not break easily.
c)No, Part B needs to be flexible to pull over user's head.

38)a)1)Liquid takes the shape o any containers.
2)Liquid cannot be compressed.
b)I do not agree with Leonard. Sand is a solid. A grain of sand has a definite shape.

39)a)The total mass reduces as air has mass and when air is pumped out, the bag will be lighter.
b)You can pack a lot of clothes in one bag.

40)a)The water level in the glass drops.
b)Air that Jack blew into the water has definite volume and occupies space. Water in the glass will be pushed out and water level drops.

41)a)

b)When Light is blocked by an opaque object.
c)i)5 cans
ii)Make the belt move faster.

42)a)A is a magnetic material but B is not.
b)Increase the number of coils around A.

43)a)Object Y can be a magnetic object only.
b)Flip the object to the other side. If it shows repulsion, like poles Repel.

44)a)Pond C.
b)The distance of the torch and the water's beaker.
c)To make sure the data collected is reliable.

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HENRY PARK PRIMARY SCHOOL
2014 SEMESTRAL EXAMINATION 1
SCIENCE
PRIMARY 4

100

Duration of Paper: 1 h 45 min

Name:_____ .

Class: Pr 4 _____ Parent's Signature: _____

Booklet A (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.

1. Which of the following is **NOT** matter?

   A: Ice
   B: Heat
   C: Sunlight

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

   ( )

2. Which of the following is **NOT** a source of heat?

   (1) The Sun
   (2) A raincoat
   (3) A lighted lamp
   (4) A burning candle

   ( )

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3. Karen filled a beaker with two substances, **A** and **B**.

She placed it on a wooden wedge as shown below.

She then removed the wooden wedge and left the beaker on the table.

What states are Substances **A** and **B** in?

	A	B
(1)	Solid	Liquid
(2)	Solid	Gas
(3)	Liquid	Solid
(4)	Liquid	Gas

( )

4. The diagram below shows how food travels in our body during digestion.

Which of the following shows the function of Organ X?

(1) It breaks down food into a soupy liquid.
(2) It removes water from the undigested food.
(3) It absorbs digested food into the blood vessels.
(4) It churns and mixes the food with digestive juices.

( )

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Four girls, Mary, Doris, Nora and Susan, made the following statements about the three bags shown below.

Mary: The items in the three bags have different mass.
Doris: The items in the three bags have the same mass.
Nora: The three bags of substances have different volume.
Susan: The three bags of substances have the same volume.

Whose statements are correct?

(1) Nora and Mary only
(2) Doris and Nora only
(3) Mary and Susan only
(4) Doris and Susan only

( )

The diagram below shows the volume of liquid **X**.

Which of the following shows the **correct** volume of liquid **X**?

(1) 50 ml
(2) 52 ml
(3) 61 ml
(4) 68 ml

( )

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7. Jack filled the syringe with equal volume of air and water.

He placed his finger at one end of the syringe tightly as shown below.

Which one of the following is observed when the plunger is pushed in?

	Volume of water	Volume of air
(1)	Remains the same	Remains the same
(2)	Increases	Decreases
(3)	Remains the same	Decreases
(4)	Decreases	Remains the same

(

8. Study the classification chart below.

Which of the following box(es) should we place an **ice cube** in?

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

( )

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9. John pumped air into a deflated ball and then measured its mass as shown in diagram **A**.

More air is then pumped into the ball and its mass is measured as shown in diagram **B**

What can John observe from this experiment?

A: Air has mass.
B: Air occupies space.
C: Air can be compressed.

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

( )

10. Three pupils learning about human systems made the following statements.

Alice: The digestive system helps to break down food so that the body can use it.

Bobby: The circulatory system moves water and nutrients around the body.

Cassie: The respiratory system helps to take in carbon dioxide and remove oxygen from the body.

Whose statement(s) is/are correct?

(1) Alice only
(2) Cassie only
(3) Alice and Bobby only
(4) Cassie and Bobby only

( )

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11. The flowchart below shows the properties of **X**, **Y** and **Z**.

Which one of the following correctly identifies **X**, **Y** and **Z**?

	X	Y	Z
(1)	Heat	Water	Oxygen
(2)	Oil	Oxygen	Marble
(3)	Marble	Oil	Water
(4)	Heat	Marble	Oil

( )

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2. Nadia poured water into a beaker through the funnel with plasticine fitted tightly on the beaker.

She observed that the water flowed into the beaker slowly and then stopped.

What should Nadia do so that the water can flow into the beaker quickly?

(1) Nadia should use a smaller beaker.
(2) Nadia should add more water to the funnel.
(3) Nadia should poke a hole through the plasticine.
(4) Nadia should remove some water from the funnel.

( )

3. The graph below shows the changes in temperature of water in a beaker when it was heated for 5 minutes.

The room temperature where the beaker was heated is 30°C.

At which point of the graph, A, B, C or D, is the heat source removed?

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

( )

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14. Amran boiled some water using the pot shown below.

He is able to hold the pot of hot water by the handles because the material used to make the handles is _____.

(1) light
(2) flexible
(3) a poor conductor of heat
(4) a good conductor of heat

( )

15. Ali poured some cold milk into a cup of hot tea he has prepared as shown below.

Which of the following about heat gain and heat loss is correct after the cold milk is added to the cup of hot tea?

	Heat Gained	Heat Lost
(1)	Cup	Cold milk
(2)	Hot tea	Cold milk
(3)	Hot tea	Cup
(4)	Cold milk	Hot tea

( )

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16. James poured an equal amount of boiling water into four cups, **W**, **X**, **Y** and **Z**, which were made of different materials.

Then he covered them and recorded their temperatures after 30 minutes.

The results were shown in the graphs below.

Based on the results shown above, which cup, W, X, Y or Z is made of a material that is the **best** conductor of heat?

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

( )

17. Which one of the following differences between animals and ferns is **NOT** correct?

	Animals	Ferns
(1)	Cannot make their own food	Can make their own food
(2)	Need water	Do not need water
(3)	Is not a plant	Is a plant
(4)	Do not reproduce using spores	Reproduce using spores

( )

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18. Look at the pictures below.

In what way are the above animals similar?

(1) They have wings
(2) They have 2 legs
(3) They have feelers
(4) They have feathers

( )

19. Mr Tan filled a basin with hot water. He put several dented ping pong balls into it.

After a while, <u>all but one</u> ping pong ball became inflated.

Why was the ball still dented?

(1) There is no air in the ball.
(2) The air in the ball lost heat and contracted.
(3) The air in the ball gained heat and contracted.
(4) There was a hole in the ball so the air escaped through it.

( )

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20. Jordan carried out an experiment to find out which cup will keep a drink warm the longest period of time.

He poured an equal amount of hot coffee into three cups, **X**, **Y** and **Z**, each made of a different material.

He then recorded the temperature of the coffee in each cup every five minutes as shown in the table below.

	Temperature of coffee in cups (°C)		
Time (Min)	**X**	**Y**	**Z**
0	85	85	85
5	81	79	77
10	78	75	72
15	75	72	68
20	72	67	62

Based on the table above, the coffee in cup _____.

(1) **X** lost heat the fastest.
(2) **Z** lost heat the slowest.
(3) **X** took the longest time to reach 72°C.
(4) **Z** took the longest time to reach 72°C.

( )

21. Study the chart below.

Group E	Group F

Which one of the following makes a suitable heading for Group E and Group F?

	Group E	Group F
(1)	land plant	water plant
(2)	poisonous plant	non-poisonous plant
(3)	flowering plant	non-flowering plant
(4)	non-flowering plant	flowering plant

( )

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22. Each of the four rods, P, Q, R and S, was put into a container with icy cold water at 5^0C. Each rod was made of a different material.

After 15 minutes, the temperature at the other end of each rod was measured.

The results of the temperature are shown in the diagram below.

The temperature of each rod was 28^0C at the **start** of the experiment.

Which rod is made of a material that is the **poorest** conductor of heat?

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

( )

23. The diagram below shows Organism X.

Which of the following statements is **correct** about Organism X?

(1) It bears fruits.
(2) It bears flowers.
(3) It makes its own food.
(4) It feeds on dead organisms.

( )

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1. Look at the pictures below.

Which system, **A**, **B**, **C** or **D**, helps to carry oxygen to all parts of the body?

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

The diagram below shows two children running together.

Which two body systems work together to allow the children to move?

A: Skeletal System
B: Muscular System
C: Respiratory System
D: Circulatory System

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

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26. The chart below shows organs **A**, **B**, **C** and **D** as food passes through the human digestive system.

Which one of the following represents Organs **C** and **D**?

	Organ C	**Organ D**
(1)	Gullet	Mouth
(2)	Small Intestine	Gullet
(3)	Mouth	Stomach
(4)	Stomach	Small Intestine

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7. Look at the diagram of a mouth below.

Which of the statements below describe the functions of **Part X** and **Part Y** correctly?

	Part X	Part Y
(1)	Breaks down food into soupy liquid.	Moisten and soften the food.
(2)	Breaks down large food pieces into smaller ones.	Pushes the food around the mouth
(3)	Breaks down food and pushes food to the gullet.	Helps to squeeze the food along the gullet.
(4)	Breaks down and absorbs water from food.	Rolls food into balls for easy swallowing.

A young plant was placed in a thick cardboard box.

Four holes **A**, **B**, **C** and **D**, were made on the sides of the box as shown below.

Which one of the holes would the plant **most likely** grow towards?

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

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29. Idris has three rods labelled **A**, **B** and **C**.

He carried out an experiment by bringing part X of a bar magnet near each end of the three rods, A, B and C, as shown above.

He then recorded his results in the table below.

Rod	Observation
A	Both ends of Rod A are attracted to part X of the bar magnet.
B	One end of Rod B is attracted to part X of the bar magnet while the other end repelled.
C	Both the ends of Rod C are not attracted to part X of the bar magnet.

Which of the following statements about rods **A**, **B** and **C** is likely to be correct?

(1) Rod B is a magnet.
(2) Rod C is a temporary magnet.
(3) Both Rod A and Rod B are magnets.
(4) Both Rod A and Rod C are made of magnetic materials.

( )

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30. Elle wanted to find out the strength of four bar magnets, **P, Q, R** and **S.**

She placed each magnet 10 cm from an iron nail and moved the magnet slowly towards the iron nail.

She then measured and recorded the distance from which each magnet attracted the iron nail.

Magnet	Distance between the magnet and the iron nail when the iron nail was attracted to the magnet (cm)
P	5
Q	8
R	4
S	2

Based on her results above, which bar magnet is the **strongest**?

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

~ End of Booklet A ~

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HENRY PARK PRIMARY SCHOOL
2014 SEMESTRAL EXAMINATION 1
SCIENCE
PRIMARY 4

Name: _____

Class: Pr 4 _____

40

Booklet B (40 marks)

For each question from 31 to 44, write your answers in the spaces given.

31. Two similar cups, **A** and **B**, were inverted into a basin of water.

One of them had holes at its base.

a) Based on the diagram above, which cup had holes at its base? [1m]

_____

b) Give a reason for your answer in (a). [2m]

_____

_____

_____

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32. The classification chart below shows how substances **X**, **Y** and **Z** are being grouped.

Using the information in the chart above, answer the following questions.

a) How are substances **X** and **Y** different? [1m]

_____

b) How are substances **X** and **Y** similar? [1m]

_____

c) Which substance, **X**, **Y** or **Z**, can be compressed? [1m]

_____

d) Fill in the blanks below using the correct words from the following list. [1m]

Air	**Pebble**	**Oil**

i) Substance **Y** - _____

ii) Substance **Z** - _____

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53. Jane wanted to find out how to measure the volume of a marble.

Her teacher gave the following items for her to use.

- 500ml of water
- measuring cylinder
- marble

Using the given items, Jane took the following steps.

However, they are not in the right order.

Write **2**, **3** and **4** in the boxes below to show the correct sequence of the steps. [2m]

Calculate the difference in the water level.	
Pour 500 ml of water into the measuring cylinder.	
Take the reading of both the water and marble.	
Put the marble into the measuring cylinder.	

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34. Two identical beakers of water, **A** and **B** (with temperature of water at 25°C) were heated with gas burners.

The water in the beakers is heated to 100°C and left to **cool down** to room temperature.

The temperatures of the water in both beakers are shown in the graph below.

a) **On the line graph above**, fill the boxes with **A** and **B** to show the changes in the temperature of the water in the two beakers correctly. [1m]

b) Which beaker of water, **A** or **B**, will take a longer time to reach the room temperature? [1m]

_____

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

_____

_____

_____

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35. Karen prepared some fried noodles and placed them on a plate.

Then she stirred the hot noodles with a pair of chopsticks as shown below.

a) Based on the diagram above, fill in the table below by putting a tick (✓) in the correct box. [1m]

	Gains heat	Loses heat
Chopsticks		
Surrounding air		

b) Karen left her plate of noodles on the table. An hour later, she observed that the noodles had turned cold.

Give a reason for her observation. [1m]

_____

_____

_____

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36. Andy set up an experiment as shown below.

He gently heated flask **A** with a flame. After some time, substance **X** is produced.

a) What is substance **X**? [1m]

_____

Andy then removed the flame and covered the flask with a cold wet towel.

b) What would he observe about the coloured water in beaker A? [1m]

_____

c) Explain your answer in (b).

_____

_____

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37. Jenny wanted to find out which container is the best conductor of heat. She conducted an experiment using three similar containers, made of different materials.

She filled each of them with water at 5°C. She put the three setups in her room and measured the change in temperature of the water every five minutes.

Container A Container B Container C

She then recorded the results in the table below.

	Temperature of water (°C)		
Time (min)	Container A	Container B	Container C
0	5	5	5
5	7	9	6
10	10	14	7
15	12	18	8
20	15	23	10
25	18	27	11

Based on the results above, which container is the **best** conductor of heat? [1m]

_____

Which container is suitable to keep food warm for the longest period of time? [2m]

Use the information from the table above to explain your answer.

_____

_____

_____

Explain why the thickness of the containers must be kept the same. [1m]

_____

_____

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38. Study the diagram below and match the function to its correct system. [3m]

Function	System
Helps the body get the oxygen it needs. •	• Circulatory System
Pumps blood containing nutrients and oxygen to other parts of the body. •	• Respiratory System
Provides support and protection to the body. •	• Skeletal System

39. The table below shows three organs, **K**, **L** and **M**, in the digestive system and their functions.

Organs	Digests food	Digested food absorbed into the bloodstream
K	✓	
L	✓	✓
M	✓	

a) From the table above, identify organ **L**. [1m]

Organ L: _____

b) What substance in the three organs digests food? [1m]

_____

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40. The following processes, **A**, **B**, **C** and **D**, take place in various parts of the digestive system during digestion.

A: Saliva is produced to break down food into smaller pieces.
B: Water is absorbed from undigested food.
C: Partially digested food is pushed down the muscular tube.
D: Food is digested and absorbed into the blood stream.

a) Write the letters, **A, B, C and D,** in the correct boxes below according to the order that each process takes place during digestion. [2m]

b) Name another part of the digestive system that helps in breaking down food into smaller pieces during **Process A.** [1m]

_____

41. Observe the two types of organisms below.

Organism **S** Organism **T**

i) Which **group** of living things both organisms **S** and **T** belong to? [1m]

_____

ii) State the **difference** in how Organisms **S** and **T** reproduce. [1m]

_____

_____

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42. Mary prepared the set up below.

a) What can be observed when Mary put some **steel** pins at the bottom of the steel rod? [1m]

_____

_____

b) State two ways Mary can increase the strength of the electromagnet above. [2m]

1: _____

2: _____

43. Darren held a magnet on one side of a piece of paper and a copper disc on the other side of the paper shown in the diagram below.

However, he observed that when he moved his finger away from the copper disc, it fell off.

a) Explain why the copper disc fell off. [1m]

_____

_____

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Q43 continued

b) What is Darren likely to observe if the copper disc is replaced by a steel disc? [1m]

_____

_____

c) Explain your answer in (b). [1m]

_____

_____

44. The diagrams below show two groups of **plant parts**.

Group A		Group B	
Hibiscus	Daisy	Watermelon	Lemon

Write suitable headings for Group **A** and Group **B**. [2m]

Group A: _____

Group B: _____

End of Booklet B

etters: Mdm Doris Heng
Mdm Fathlon Tawfik
Mr Yuan Kee King

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Henry Park Primary School P4 Semestral Examination 1 Science 2014

Booklet A

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

Booklet B

31 a Cup B
b More water would enter cup B as with the holes at its base, the air can escape to allow more water to enter the cup to displace the air when immersed into the water, while in cup A without holes at the base, there will be no air escaping hence lesser volume of water can enter the cup.

32 a Substance X has definite shape while substance has no definite shape.
b Both substances X and Y has definite volume.
c Substance Z.
d (i) oil (ii) air

33

4
1
3
2

34 a

b Beaker A
c It has more water so there is more heat to lose to reach the room temperature.

35 a

Gains heat	Loses heat
√	
√	

b The noodles lost heat to the surrounding air.

36 a Substance X are air bubbles.
b It will decrease in volume.
c Air in flask A cooled and contracted to occupy a smaller volume hence drawing the coloured water into the glass tube.

37 a Container B.
b Container C. It has the lowest temperature after 25 minutes.
c To ensure a fair and accurate test.

38

39 a Small intestine
b Digestive juice

40 a Food enters the mouth → A → C → P → B → Waste matter is passed out
b The teeth chew the food into smaller pieces.

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41 a Plants.
b Plant S (non-flowering) reproduces by spores while T (flowering plant) reproduces by seeds.

42 a The pins will be attracted to the steel rod.
b 1: Increase the number of coils
2: Increase the number of batteries

43 a The copper disc is not a magnetic material.
b The steel disc will be attracted to the button magnet.
c It is a magnetic material.

44 Group A: Flowers
Group B: Fruits

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METHODIST GIRLS' SCHOOL

Founded in 1887

MID-YEAR EXAMINATION 2014
PRIMARY 4
SCIENCE

BOOKLET A

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

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.
Follow all instructions carefully.
Answer all questions.
Shade your answers in the Optical Answer Sheet (OAS) provided.

Name: _____ ( )

Class: Primary 4 _____

Date: 12 May 2014

This booklet consists of 20 printed pages including this page.

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For each question from 1 to 25, 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. [50 marks]

---

1 Jenny uses the chart to classify the physical characteristics of four animals.

Animal	Has hair	Has 6 legs	Lays eggs	Gives birth to its young alive
A	√		√	
B	√			√
C		√	√	
D				√

Which one of the animals A, B, C or D is most likely an insect?

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

2 Look at the pictures below. Which one of the following is <u>not</u> a fruit?

(1) chilli
(2) tomato
(3) apple
(4) radish

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3 Ahmad uses the chart below to help him classify things.

Using the flow chart, where should Ahmad place the ruler and the sparrow.

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

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4 Study the life cycle of Animal X and Animal Y below.

Animal X

Animal Y

Which one of the following statements is true about the life cycle shown above?

(1) Animal X gives birth to its young alive but Animal Y does not.

(2) Animal X has an egg stage in its life cycle but Animal Y does not.

(3) Animal X has a larval stage in its life cycle but Animal Y does not.

(4) Animal X has a young that looks like the adult while Animal Y does not.

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5 Study the flow chart below.

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

	A	B	C
(1)	tiger	moth	cockroach
(2)	tiger	cockroach	moth
(3)	duck	cockroach	moth
(4)	duck	moth	cockroach

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6. Jill placed a seed into a container of soil as shown below. She watered the soil daily.

Which one of the following diagrams shows what Jill would observe after some time?

7. Study the graph below carefully.

The line "BC" shows the _____ stage of a mosquito.

(1) egg

(2) larval

(3) pupal

(4) adult

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8. The diagram below shows the life cycle of an animal.
Which one of the following does not have the same kind of life cycle as shown below.

(1) mosquito
(2) moth
(3) grasshopper
(4) mealworm beetle

9. Which one of the following graphs correctly shows the relationship between the mass of the seed leaves and the height of the seedlings?

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10. Study the life cycles of the mosquito and the dragonfly as shown below. Which of the following are correct?

A: The young of the dragonfly and the young of the mosquito live in water

B: The life cycle of the mosquito has an egg stage but the dragonfly does not.

C: The dragonfly has a three-stage life cycle whereas the mosquito has a four-stage life cycle.

D: The young of the dragonfly resembles the adult but the young of the mosquito does not.

(1) A and B only

(2) C and D only

(3) A and C only

(4) B and D only

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11. An experiment was conducted to find out if adding sand to soil helps a plant to grow better. Two set-ups were required. One of the set-ups is shown below.

To ensure a fair test, which one of the following should be the other set-up?

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12. Joe wanted to find out the conditions needed for seeds to germinate. He put four seeds in similar dishes and placed the same amount of cotton wool in the dishes. He then placed the dishes at different locations subjected to different conditions.

In which of the set-ups would seeds germinate?

(1) A and B only

(2) A and C only

(3) A, B and C only

(4) B, C and D only

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13 Tina conducted an experiment to study the hardness of three different materials A, B and C. She used the sharp ends of a plastic rod and a wooden rod to scratch each of these materials. She recorded her observations in the table below.

Rod used to scratch material	Scratch marks observed on material		
	A	B	C
plastic	No	Yes	Yes
wood	No	No	Yes

Which one of the following statements is correct?

(1) A and B are harder than plastic.

(2) B and C are harder than plastic.

(3) A and B are harder than wood.

(4) B and C are harder than wood.

14 Lisa had two identical syringes. Each syringe was covered with black paper and completely filled with air or water.

She covered each nozzle tightly with her finger and pushed the plunger in as hard as she could. She then measured the distance d. Which one of the following shows the correct values of d?

	d (cm)	
	Syringe with air	Syringe with water
(1)	0	10
(2)	10	0
(3)	5	10
(4)	10	5

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15 Study the flow chart about the characteristics of objects given below.

What characteristics does Object X have?

A: It is transparent.
B: It is flexible.
C: It is not flexible.
D: It sinks in water

(1) A only

(2) A and B only

(3) A and C only

(4) A, C and D only

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16 Diagram 1 shows a ring magnet being lowered onto a tray of iron nails.
Diagram 2 shows the bottom view of the magnet.

Which one of the following most likely shows the number of nails attracted to the bottom of the magnet at A, B and C after it was taken out from the tray of iron nails?

	A	B	C
(1)	4	10	8
(2)	10	6	10
(3)	8	6	4
(4)	8	8	8

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17 Shu En designed a toy see-saw using magnets. The toy would move continuously when she tilted one end of the aluminium rod to bring the magnets nearer.

Which of the following statements are true of her design?

A: A is the north pole of the magnet.

B: B is the south pole of the magnet.

C: The continuous movement is caused by attraction of unlike poles.

D: The continuous movement is caused by repulsion of like poles.

(1) A and B only

(2) A and D only

(3) A, B and C only

(4) A, B and D only

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18 Four identical containers holding different types of matter are shown below.

A jar of water is poured into each container at the same time and at the same speed.

Arrange the containers in order, starting with the one that will overflow first.

	Overflow first →			Overflow last
(1)	B	A	D	C
(2)	B	D	A	C
(3)	B	C	A	D
(4)	B	D	C	A

19 Siti placed an ice cube into a mug of hot chocolate as shown below.

What happened after five minutes?

(1) The ice cube lost heat to the mug.

(2) The mug lost heat to the hot chocolate.

(3) The ice cube gained heat from the hot chocolate.

(4) The hot chocolate gained heat from the ice cube.

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20 Study the flow chart about A, B, C and D as shown.

Which one of the following correctly shows what A, B, C and D are?

	A	B	C	D
(1)	oxygen	light	stone	honey
(2)	shadow	air	honey	stone
(3)	heat	milk	air	book
(4)	air	oil	shadow	bottle

21 Edmund and her black dog were in a dimly lit room. Which one of the following statements correctly explains why he could only see the dog's eyes clearly.

(1) Edmund's eyes were sources of light.

(2) The dog's eyes were sources of light.

(3) Light was reflected from Edmund's eyes to the dog's eyes.

(4) Light was reflected from the dog's eyes to Edmund's eyes.

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22 Tim set up the following experiment to measure the amount of light passing through three materials, A, B and C using a light sensor fixed at one end of a wooden tube. A light source was attached at the other end of the tube.

He recorded the results in the table below.

Material	Amount of light (units) measured by light sensor
A	155
B	273
C	90

Which one of the following shows correctly the arrangement of materials according to the amount of light passing through it?

	Allows least light to pass through		Allows most light to pass through
(1)	B	A	C
(2)	B	C	A
(3)	C	A	B
(4)	C	B	A

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23 Tracy had the following items.

After arranging the items as shown above, what shadow could she see on the screen when the torch was switched on?

(1)

(2)

(3)

(4)

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24 Su Ching had some ice cubes, a beaker and a Bunsen burner. The table below showed what happened to the ice cubes every 10 minutes.

First 10 minutes	Ice cubes were heated in a beaker until all the ice melted.
Next 10 minutes	The water was heated continuously to boiling point.
Next 10 minutes	The water was left boiling.
Last 10 minutes	The burner was turned off. The water was left in the beaker.

Which graph correctly shows what happened to the ice cube?

(1)

(2)

(3)

(4)

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25 Mr Tan had four rods of the same thickness and length. They were made of different materials, W, X, Y and Z. He wanted to use the set-ups shown below to find out how well the materials could conduct heat.

The time taken for the drop of wax on top of each rod to melt completely was recorded in the table shown below.

Rod	Time taken for the drop of wax to melt (seconds)
W	45
X	40
Y	50
Z	60

Based on Mr Tan's experiment, which of the following statement/s is/are correct?

A: Rod Y conducted heat faster than rod W.

B: Rod Z needed most time to conduct heat.

C: Rod X is the best conductor of heat.

(1) B only

(2) C only

(3) B and C only

(4) A, B and C only

END OF BOOKLET A

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METHODIST GIRLS' SCHOOL

Founded in 1887

MID-YEAR EXAMINATION 2014
PRIMARY 4
SCIENCE

BOOKLET B

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

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.
Follow all instructions carefully.
Answer all questions.
Write your answers in this booklet.

Name:_____( )

Class: Primary 4._____

Date: 12 May 2014

Booklet A	**/ 50**
Booklet B	**/ 40**
TOTAL	**/ 90**

This booklet consists of 14 printed pages including this page.

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For questions 26 to 38, write your answers in the space provided.

[40m]

26 In the following statements write "T" for statements that are true and "F" for statements that are false [2m]

		T or F
(a)	A penguin flies and swims about.	
(b)	Yeast needs food, air and water to live.	
(c)	A shark breathes through gills and swims.	
(d)	Some fungi have chlorophyll and are able to make food.	

27 Ali placed a grasshopper, a potted plant and a dish of water in a glass bottle. He sealed the bottle tightly with a rubber cap and then placed it in a dark cupboard.

(a) What would happen to the grasshopper after two weeks? [1m]

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

(c) What can be done to prevent what you described in (a) from happening? [1m]

(Go on to the next page)

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28 Study the table below and answer the questions that follow.

Characteristic of plant	Plant A	Plant B	Plant C
Has edible fruit	√	x	√
Has poisonous parts	x	√	√
Has woody stem	√	√	√

Mano made the following comment:

"Plant C is wrongly classified. How can a plant be poisonous and edible at the same time?"

(a) Do you think Mano's statement is correct or wrong? Give a reason for your answer. [1m]

_____

(b) State two differences between Plant A and Plant B. [1m]

_____

(c) Put ticks(√) in the appropriate boxes to show the characteristics of the hibiscus plant, balsam plant and the durian tree in the table below. [2m]

Characteristics of plant	Hibiscus plant	Balsam plant	Durian tree
Has edible fruit			
Has flowers			

(Go on to the next page)

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29 Ah Beng plants a young chilli plant in a pot containing an adult balsam plant. He waters them every day.

The table below shows the growth of the chilli plant for six weeks.

Week	1	2	3	4	5	6
Height of chilli plant (cm)	1	2	3	4	4	4

(a) Based on the table above what can you say about the growth of the chilli plant from Week 1 to Week 6? [1m]

_____

_____

(b) Based on the above experiment, give a reason for your observation in (a). [1m]

_____

_____

(Go on to the next page)

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30 Study the classification chart below.

Give your answers based on the classification chart above.

(a) List the characteristics of the spiny anteater. [1m]

_____

_____

(b) One organism is wrongly classified. [1m]
Which organism is wrongly classified?

_____

(c) Mark an "X" in the classification table to show where the organism in (b) should be classified.

[1m]

(Go on to the next page)

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31 Living things can be classified using the classification chart shown below.

(a) Give a suitable heading for [1m]

(i) P : _____

(ii) R: _____

(b) How is the method of obtaining food by the organisms in Group R different from the method used by those in Group P? [1m]

_____

_____

(Go on to the next page)

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32 Study the table below.

Plant	Type of plant	Seed	Leaf	Where the plant can be found
A	non-flowering plant		entire edge	land
B	flowering plant	a few	entire edge	land
C	flowering plant	many	lobed edge	water
D	flowering plant	many	lobed edge	land
E	flowering plant	a few	toothed edge	water

Using the information given in the table above, classify the five plants by placing the letters B to E in the boxes in the classification diagram below.
A is done for you. [2m]

(Go on to the next page)

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33 The statements A to H describe the events that lead to the maturation of a plant. They are not in the correct order. [2m]

A	The root grows first.
B	The seedling obtains the food it needs from the seed leaves.
C	A seed needs air, water and warmth before it can germinate.
D	The part that comes out next is the shoot.
E	It grows downwards because of gravity.
F	The seedling develops its leaves and starts making food.
G	More leaves will develop as the plant grows.
H	The seed leaves will wither, die and fall off when it is no longer needed.

Complete the diagram below to show the correct order.

C → [ ] → E → [ ] → [B] → [ ] → [H] → [ ]

(Go on to the next page)

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34 A steel bar AB was magnetized using the 'stroke' method as shown in the diagram below.

(a) State what the magnetic poles of the steel bar AB would be at A and B. [1m]

(i) At A: _____ pole

(ii) At B: _____ pole

(b) Susan wants to magnetise an aluminium bar CD using the North pole of a magnet. However, no matter how many times she strokes the bar, it is not able to pick up any steel paper clips.

(i) Give a reason why that happened. [1m]

_____

(ii) Before Susan magnetizes another bar, what material should she ensure the bar is made of? Name one material. [1m]

_____

(Go on to the next page)

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35 (a) The diagram below shows a transparent container filled with water. There is an air-tight stopper at the opening at A. The water levels at A and D are given.

(i) Use a ruler and pencil to draw in the water level at B and C. [1m]

(ii) Explain why the water levels at A and D are different. [1m]

_____

_____

(iii) What could be done to make the water levels at A, B, C and D the same? [1m]

_____

(b) Name 2 properties of water that can be seen from the diagram. [2m]

(i) _____

(ii) _____

(Go on to the next page)

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36 Dawn conducted an experiment using a torch, an object and a screen. The height of the shadow of the object on the screen is recorded and plotted on a graph as shown below.

(a) How is the shadow of the object formed? [1m]

_____

(b) Is the object placed at position X or Y when the height of shadow is 14cm? [1m]

_____

(c) Besides moving the object, what could Dawn do to get the height of shadow to change from 6cm back to 14cm? [1m]

_____

_____

(Go on to the next page)

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37 Peter conducted an experiment using set-ups A and B as shown. He wrapped a glass beaker with material X and another glass beaker with material Y. Both beakers are filled with hot water.

The temperature of the water in set-ups A and B are measured at different times and the results are shown in the graph below.

(a) Based on the graph, what is the relationship between the temperature of water and time? [1m]

_____

_____

(Go on to the next page)

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(b) Which material, X or Y, is better at keeping a drink warm for a longer time? Why? [2m]

_____

_____

(c) Name an example of the material you have chosen for (b). [1m]

_____

(d) List 2 conditions that Peter has to keep constant in order for the experiment to be a fair test. [2m]

(i) _____

(ii) _____

(Go on to the next page)

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38 Rosnah heated 100ml of tap water over a burner and took the temperature of the water every 4 minutes for 20 minutes. She then plotted the graph below.

(a) Explain why the temperature of the water changed in the first 8 minutes when it was heated? [1m]

_____

(b) Without turning off the burner, what could Rosnah have done at the 8th minute that caused a sharp drop in the temperature of the water as shown in the graph? [1m]

_____

(c) Would the amount of heat at 100°C be the same if the amount of water is increased from 100ml to 200ml from the start? Explain your answer. [1m]

_____

End of Paper

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ANSWER SHEET

EXAM PAPER 2014

SCHOOL : MGS
SUBJECT : PRIMARY 4 SCIENCE

TERM : SA1

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

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25
2	3	2	4	3	1	1	3

26. a) F
b) T
c) T
d) F

27. a) It would die.
b) The grasshopper did not have enough air, living things need air to survive. Therefore the grasshopper died.
c) Loosen the cap

28. a) Mano is wrong. Although they may have some poisonous parts, the fruits are not and are edible.
b) Plant A has edible fruits but Plant B does not. Plant B has poisonous parts but Plant A does not.
c) Has edible fruit: Durian tree
Has flowers: Hibiscus plant, Balsam plant, Durian tree

29. a) The plant grew taller until week 4 and then remained at the same height after that.
b) The taller adult balsam plant blocked the shorter chilli plant from getting sunlight to enable it to make food and grow.

30. a)Its is warm-blooded, it is a mammal and lays eggs.
b) The bat
c) classified under 'give birth to young alive'

31. a)i) Plants
ii) Fungi
b) Group R feeds on their host whereas Group P can make their own food.

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32. a) C
b) E
c) B
d) D

33. A D F G

34. a)i) North
ii) South
b)i) Aluminium is a non-magnetic material. Therefore it will not become a magnet no matter how many times you stroke it.
ii) Magnetic material. Iron.

35. a)i) B: ____
C: ____
ii) Due to the stopper, there is air that occupies space in A. However in D, because there is no stopper, there is no air that occupies space.
iii) Remove the stopper in A
b)i) water has no definite shape
ii) Water level is always parallel to the ground

36. a) The shadow of the object is formed when light is blocked by the object.
b) Position X
c) Move the torch closer to the object.

37. a) The longer the water is left out, the colder it becomes.
b) Material X. The temperature of the water drops slower over the same duration when the beaker is wrapped with Material X than when it is wrapped with Material Y.
c) Wool
d)i) The amount of water
ii) The amount of time

38. a) When the water is heated, it gains heat and thus the temperature will rise.
b) Ice water is added to the water.
c) No. There is more heat in 200ml of water as more heat is needed to heat a greater amount of water to 100°C.

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NAN HUA PRIMARY SCHOOL
SEMESTRAL ASSESSMENT 1 – 2014
PRIMARY 4

SCIENCE

BOOKLET A

30 Multiple Choice Questions (60 marks)

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

INSTRUCTIONS TO CANDIDATES

1. Write your name and index number in the space provided.
2. Do not turn over the page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Shade your answers in the Optical Answer Sheet (OAS) provided.

Marks Obtained

Booklet A		/ 60
Booklet B		/ 40
Total		/ 100

Name: _____ ( ) **Class: P 4** _____

Date : 16 May 2014

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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.

1. Which of the following is/are source(s) of light?

   A: Fire
   B: Wood
   C: Lightning

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

2. Which of the following sentence(s) is/are true?

   A: All objects reflect light.
   B: Black surfaces do not reflect light.
   C: Rough surfaces reflect more light than smooth surfaces.

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

3. A builder wants to build a building that uses natural lighting to cut down on the use of energy. Which one of the following materials should he use for the walls of the building?

   (1) Steel
   (2) Glass
   (3) Concrete
   (4) Aluminium

4. Which one of the following statements about shadows is correct?

   (1) Only solid objects cast shadows.
   (2) Shadows are neither matter nor energy.
   (3) Shadows are formed in the absence of light.
   (4) The shape of shadows is not affected by the position of the light source.

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5. Which one of the following groups is classified correctly?

	Matter	Non-matter
(1)	oil, water, heat	butter, light, cream
(2)	jelly, sound, paper	ice, iron, rain
(3)	butter, oxygen, fire	wind, shadow, wax
(4)	air bubbles, toothpaste, ice	light, thunder, heat

6. Specimen X was brought back from the Moon. After some tests scientists conclude that Specimen X is a matter. Which of the following statement about Specimen X must be true?

(1) Specimen X is weightless.
(2) Specimen X takes up space.
(3) Specimen X can be compressed.
(4) Specimen X has a definite shape.

7. Some air was pumped into an inflated ball shown below.

Why did the size of the ball remain the same after more air is pumped in?

(1) Air occupies space.
(2) Air has no fixed volume.
(3) Solid has definite shape.
(4) The mass of the ball stays the same.

8. Which one of the following statements about temperature is correct?

(1) It is a measure of the degree of hotness.
(2) It is a measure of the amount of hotness.
(3) It is a measure of the degree of coldness.
(4) It is a measure of the amount of coldness.

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9. Four pieces of metal were placed together as shown in the diagram below.

The table below shows the temperature of each metal piece at the beginning of the investigation.

Metal	Temperature (°C)
A	80
B	70
C	50
D	60

If the surrounding temperature is kept at a constant 25 °C, what would Metal C's temperature be after six hours?

(1) 20 °C
(2) 25 °C
(3) 50 °C
(4) 65 °C

10. An iron rod at 130 °C was left to cool naturally in a classroom. Which one of the following is true?

(1) The surroundings will lose heat.
(2) The iron rod will become lighter after cooling.
(3) The iron rod will become slightly shorter after cooling.
(4) The temperature of the classroom will increase to 130°C.

11. John held a plastic spoon in his left hand and a metal spoon in his right hand. The metal spoon felt colder than the plastic spoon. Which one of the following statements explains the observation?

(1) The plastic spoon traps heat from John's hand.
(2) John's hands were not sensitive enough to tell the temperature.
(3) John's left hand was at a higher temperature than his right hand.
(4) The metal spoon conducts heat away from John's hand faster than the plastic spoon.

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12. Which of the following statement(s) about living things is/are true?

A: All living things can reproduce.
B: All living things need air, food and sunlight to survive.
C: All living things respond to changes in the environment.

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

13. Study the chart below carefully.

Which letter in the classification chart above best represents the plant shown below?

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

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14. The diagram shows 4 objects made of 4 different materials in a tank of water.

Based on the diagram, which of the following properties can Mary use to classify the above objects?

A: Strength
B: Hardness
C: Ability to float on water
D: Degree of transparency

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

15. Shawn made 4 telescopes as shown below.

: ball

: eye

: mirror

In which of the telescope(s) would he be able to see the ball?

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

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16. Kevin conducted an experiment to measure the amount of light that can pass through four different materials. He used a datalogger to do so and wrote the results in the table below.

Based on the results given in the bar chart above, which of the following statement is true?

(1) Material B does not allow light to pass through.
(2) Material A has a lighter shadow than Material B.
(3) Material D allows the most light to pass through.
(4) Material C allows more light to pass through than Material A.

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17. A pole was placed in the middle of a field. Which one of the following diagrams correctly shows the shadow cast by the pole at the stated time?

(1) 8 am

(2) 3 pm

(3) 2 pm

(4) 7 am

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18. Four identical beakers A, B, C and D were filled up to the same level with different substances as shown in the diagram below.

Water is then poured into each of the beakers to fill them to the brim. Which beaker will require the most amount of water?

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

19. The diagram below shows some air trapped inside a syringe fitted with a stopper at its nozzle.

When the plunger was pushed, it moved a short distance into the syringe and could not be moved in anymore. Which of the following statement(s) best explain(s) this observation?

A Air has mass.
B Air occupies space.
C Air can be compressed.
D Air has no definite shape.

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

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20. When water was poured into a container the following was observed.

Which one of the following statements best explains this observation?

(1) Liquids occupy space.
(2) Liquids have definite volume.
(3) Liquids have no definite shape.
(4) Liquids cannot be compressed.

21. An equal amount of two substances R and S was placed in two identical containers A and B as shown in the diagram below.

The diagram below shows what happens when both containers were tilted at the same angle.

What can be concluded from this investigation?

(1) Substance R has a greater mass than Substance S.
(2) Substance R has a greater volume than Substance S.
(3) Substance R has fixed shape but Substance S does not.
(4) Substance R has fixed volume but Substance S does not.

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22. 2 identical balls made of Metals J and K were heated up to 80 °C and then left to cool for five minutes. The table below shows the size of the balls before and after cooling.

Ball made of Metal	Size before cooling (units)	Size after cooling (units)
J	7	3
K	5	3

Which one of the following sentences is true?

(1) Metal J is stronger than Metal K.
(2) Ball K contracts less than Ball J on cooling.
(3) Ball J weighs more than Ball K after heating.
(4) Metal K is a poorer conductor of heat than Metal J.

23.

Three identical ice cubes were placed inside a sealed glass container under the hot Sun for 5 minutes as shown in the diagram above. Which one of the following sentences cannot be true at the end of the 5 minutes?

(1) The three ice cubes became smaller.
(2) The three ice cubes disappeared completely.
(3) The amount of water in the container increased.
(4) The water in the container has changed into ice.

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NAN HUA PRIMARY SCHOOL
SEMESTRAL ASSESSMENT 1 – 2014
PRIMARY 4

SCIENCE

BOOKLET B

14 Open-ended questions (40 marks)

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

INSTRUCTIONS TO CANDIDATES

1. Write your name and index number in the space provided.
2. Do not turn over the page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Write your answers in this booklet.

Marks Obtained

Section B		/40

Name: _____ ( ) **Class: P 4** _____

Date : 16 May 2014 **Parent's Signature:**_____

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24. A glass rod and a wooden rod were heated in a hot water bath as shown in the diagram below.

When Shane touched the wooden rod, his finger did not get burnt. However, his finger got burnt when he touched the glass rod. Which one of the following explains what happened?

(1) Only hard objects cause burns.
(2) Shane loses heat to the glass rod.
(3) Glass is a better conductor of heat than wood.
(4) The temperature of the wooden rod in water is lower than that of the glass rod in water.

25. The diagram below shows two types of water containers, X and Y. Both containers were made of the same material.

Which of the following statements are true?

A: Hot coffee gets cold faster in Container X than in Container Y.
B: Container Y can keep cold water cold longer than Container X.
C: Ice cubes take longer to melt in Container Y than in Container X.

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

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26. May collected an equal amount of water from 4 ponds L, M, N and O. She placed the pond water in 4 separate containers and 20 Organism X in each container. The following table shows the number of Organism X left in each container after 1 week.

Container with water from	Number of Organism X left after 1 week
Pond L	12
Pond M	7
Pond N	20
Pond O	15

Which one of the following statements is most likely true?

(1) Organism X does not need food to survive.
(2) Organism X does not survive well in pond water.
(3) Food for Organism X can be found in the water of Pond N.
(4) Water from Pond L is more suitable for Organism X than water from Pond O.

27. The table below provides some information on P and Q.

Things	Able to move on its own?	Able to reproduce?	Able to make its own food?
P	Yes	Yes	No
Q	No	Yes	Yes

Which one of the following statements is true about P and Q?

(1) Both P and Q are living things.
(2) Both P and Q are non-living things.
(3) P is a living thing and Q is a non-living thing.
(4) P is a non-living thing and Q is a living thing.

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28. Study the classification chart below carefully.

Which one of the following are suitable headings for A and B?

	A	B
(1)	Fruit	Vegetable
(2)	Edible	Inedible
(3)	Makes own food	Does not make own food
(4)	Reproduce by seeds	Reproduce by spores

29. Study the classification chart below carefully.

What animals can P, Q, R and S be?

	P	Q	R	S
(1)	platypus	salmon	penguin	cow
(2)	shark	chicken	dolphin	platypus
(3)	dolphin	elephant	salmon	chicken
(4)	penguin	cow	shark	elephant

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30. Mark wants to use a material to make a model of a tall building. He wants the model to be stable and has parts that stay intact, so that it does not collapse when he places his figurines on it. What property or properties must the material possess?

A: Strength
B: Hardness
C: Flexibility
D: Waterproof

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

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SEMESTRAL ASSESSMENT 1 – 2014
PRIMARY 4

SCIENCE

BOOKLET B

14 Open-ended questions (40 marks)

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

INSTRUCTIONS TO CANDIDATES

1. Write your name and index number in the space provided.
2. Do not turn over the page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Write your answers in this booklet.

Marks Obtained

Section B		/40

Name: _____ ( ) **Class: P 4** _____

Date : 16 May 2014 **Parent's Signature:**_____

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Section B: (40 marks)
Write your answers to questions 31 to 44.
The number of marks available is shown in brackets [ ] at the end of each question or part question.

31. Peter was writing on a clipboard in his living room in the afternoon.

(a) Draw the path of light in the above diagram to show how Peter is able to see what he is writing on his clipboard. [1]

(b) Later in the night, Peter went into his bedroom to work on his laptop. As his wife was sleeping, he did not switch on any room lights. Draw the path of light in the diagram below to show how Peter is able to see what he is typing on his laptop. [1]

(c) Two hours later Peter switched off his laptop and went to sleep. Explain how he can find his way to his bed with no light in his room. [1]

_____

_____

Score	/ 3

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32. Study the classification chart below carefully.

(a) List the properties of B. [1]

_____

(b) Xenon is a substance that can be compressed and it takes the shape of its container. Which one of the above letters (A, B or C) represents Xenon? [1]

_____

(c) Which letter above represents a rice grain? [1]

_____

Score	/ 3

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33. John heated two metal solids X and Y to a temperature of 80 °C before leaving them to cool on a table as shown in the diagram below.

The temperature of both solids were measured and the results were plotted in the graph below.

(a) Based on the results, which metal is a better conductor of heat? Give a reason for your answer. [1]

_____

_____

(b) Why did the temperature of both metals not fall below 30 °C? [1]

_____

_____

(c) Suggest one thing that John can do to make metal X cool down slower. [1]

_____

_____

Score	/ 3

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34. Ali went to Auckland Harbour Bridge in New Zealand and noticed gaps along the whole length of the bridge as shown in the diagram below.

(a) Why is the bridge made up of segments separated by gaps? [1]

_____

_____

(b) On the way back to his hotel from the bridge, Ali saw some birds perching on electrical wires that were loosely hung between poles as shown in the diagram below. Why were the wires hung loosely? [1]

_____

_____

Score	/ 2

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35. Three identical potted plants were placed in three containers made of different materials as shown below.

They were given same amount of water each day and were placed next to the window for one month.

(a) At the end of one month the plant in the ceramic container withered. Give a reason for this observation. [1]

_____

(b) The plants in the glass and acrylic containers grew taller at the end of the month. Based on this observation, state one property of acrylic. [1]

_____

(c) Why is there an opening at the lower left of each container? [1]

_____

Score	/ 3

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36. Study the flow chart below.

(a) Which letter represents a spiny anteater? Explain your answer. [1]

_____

_____

(b) Based on the flow chart, state 2 similarities between Q and R. [2]

_____

_____

Score	3

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37. The picture below shows a snorkeling mask.

(a) What property must the material used to make Part X have? [1]

_____

(b) When Ruth went snorkeling with the above mask, she found tiny water droplets forming on the inner surface of the mask after some time in the water and she could not see clearly through the mask anymore. Explain how the tiny water droplets prevented Ruth from seeing clearly through the mask. [1]

_____

_____

Score	/ 2

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38. The following set-up is used to study shadows formed by various objects.

Shannon has 3 wooden blocks as shown below. She stacks them together and placed them as the object in the set-up above. The dotted figure on the right shows the object formed by stacking the blocks together.

(a) The triangular block was placed nearest to the torch, followed by the square and then the circle. Circle the shadow formed below. [1]

(b) The circular block is then placed nearest to the torch, followed by the square and then the triangle. Circle the shadow formed below. [1]

(c) Shannon then replaced the square block with a similar square block made of glass and arranged the blocks in the same order as (b). Circle the shadow formed below. [1]

(d) Which property of light is shown in this investigation? [1]

Score	
	4

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39. Diagram 1 below shows an iron block held above a beaker of water Diagram 2 below shows the same iron block resting inside the same beaker.

(a) Draw the water level in Diagram 2. [1]

(b) What property of matter does this investigation show? [1]

_____

(c) He then repeated the investigation with a wooden block of the same size. Would the water level be higher, lower, or the same as in (a) above? Explain your answer. [1]

_____

_____

Score	/ 3

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40. The flow chart below shows the properties of some objects at 30 °C.

(a) Based on the flow chart, what state(s) of matter can B be? [1]

_____

(b) Match the following substances with the letters A, B or C. [2]

Substance	Letter
Honey	
Oxygen	
Plasticine	
Coffee Bean	

Score	3

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41. Charles wanted to compare how well four different metals P, Q, R and S conduct heat. He set up the apparatus as shown below.

He placed the apparatus in a hot water bath and measures the time taken for the thumb tack to fall off (due to the wax melting).

(a) State the dependent variable in this investigation. [1]

_____

(b) Identify the independent and constant variables needed for a fair test by putting a tick (✓) in the respective columns. [2]

Variables	Independent Variable	Constant Variable
Length of rod		
Type of metal		
Amount of wax		
Temperature of hot water bath		

Score	/ 3

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42. The night temperature of Nepal can be as low as 10 °C. Visitors to Nepal usually sleep in sleeping bags stuffed with goose feathers to keep warm.

Explain how the goose feathers in the sleeping bags help to keep the visitors warm. [2]

Score	/ 2

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43. The table below shows the characteristics of four animals A, B, C and D. Some of the information about the animals is missing.

Characteristic	A	B	C	D
Outer body covering	hair	feathers	-	-
Reproduction	-	lays eggs	lays eggs	lays eggs
Movement	swims	runs	flies	swims
Special	mothers produce milk for young	-	3 body parts	Breathes through gills

(a) Based on the information given in the table above, match the animals, A, B, C and D, to the correct animal group below. [2]

Fish	
Bird	
Insect	
Mammal	

(b) State 1 more characteristic of Animal C. [1]

_____

Score ___ / 3

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44. Samuel dipped 4 strips of different material into a beaker of water mixed with red dye as shown in the diagram below.

The result of the investigation is shown in the diagram below.

(a) List 2 variables which must be kept the same in this investigation. [2]

_____

_____

(b) Which material (A, B, C or D) is most suitable for making a kitchen towel? Give a reason for your answer. [1]

_____

_____

End of paper

Score	/ 3

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Year: 2014

Level: Primary 4

School: Nan Hua Primary School

Subject: Science

Semester: SA1

Booklet A/ Section A:

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
3	1	2	2	4	2	2	1	2	3
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
4	2	4	1	3	4	3	3	3	3
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
3	2	4	3	4	3	1	4	3	1

Booklet B/ Section B:

Q31) a)

b)

c) Light from the surroundings fall on his bed and is reflected into his eyes.

Q32) a) B is a matter that has a fixed volume but no fixed shape.

b) C

c) A

Q33) a) X. X cooled down faster than Y.

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b) 30°c is likely the temperature of the surroundings so there is no heat gained or heat lost.

c) Wrap metal X with a poor conductor.

Q34) a) It is to provide space for the bridge to gain heat to expand so that it will not buckle.

b) To allow the wires to lose heat and contract so that the wires will not snap.

Q35) a) Ceramic is opaque so it does not let light to pass through. The plant is unable to ge sunlight to make food so it withered.

b) Acrylic is transparent.

c) To provide air for the plant to survive.

Q36) a) Q. A spiny anteater can't make its own food, lives on land and lays eggs.

b) They both can't make its own food and live on land.

Q37) a) It must be transparent.

b) The tiny water droplets allowed less light into Ruth's eyes through the mask.

Q38) a)

b)

c)

d) Light travels in a straight line.

Q39) a)

b) Matter occupies space.

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c) The water level will be lower. This is because the wooden block will float on the water.

Q40) a) Solid

b)

Substance	Letter
Honey	C
Oxygen	A
Plasticine	B
Coffee Bean	B

Q41) a) It is the time taken for the thumbtack to fall off.

b)

Variables	Independent variable	Constant variable
Length of rod		✓
Type of metal	✓	-
Amount of wax		✓
Temperature of hot water bath		✓

Q42) The goose feathers traps air inside the sleeping bag. Air is a very poor conductor of heat. It slows down heat loss from the visitors' bodies to the surrounding air.

Q43) a)

Fish	D
Bird	B
Insect	C
Mammal	A

b) It has an exoskeleton.

Q44) a) The length of the strips and thickness if the strips.

b) D. D is the most water absorbent.

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NANYANG PRIMARY SCHOOL

PRIMARY 4 SCIENCE

SEMESTRAL ASSESSMENT 1
2014

BOOKLET A

Date : 8 May 2014
Duration : 1 h 45 min

Name : _____ ( )

Class: Primary 4 ( )

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Booklet A consists of 17 printed pages including this cover page.

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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. Which one of the following situations does not show that a living thing responds to changes in its surroundings?

   (1) A cat dies of old age
   (2) A deer escapes when it spots a tiger.
   (3) A frightened boy screams when he is attacked.
   (4) A mimosa plant folds up its leaves when touched.

2. Which of the following explains why animals need to move about?

   A To look for food
   B To look for shelter
   C To escape from danger

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

3. Which one of the following correctly states the similarity and difference between a mushroom and a fern?

	Similarity	Difference
(1)	Both fern and mushroom have roots.	Fern has a cap and a stalk while mushroom does not.
(2)	Both fern and mushroom reproduce by seeds.	Fern grows on trees but mushroom does not.
(3)	Both fern and mushroom reproduce by spores.	Fern can make its own food while mushroom cannot.
(4)	Both fern and mushroom are living things.	Fern can respond to surrounding changes while mushroom cannot.

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4. Which one of the following correctly states the similarities between plants and animals?

(1) They make their own food.
(2) They move about to get food.
(3) They need air, food and water.
(4) They give birth to their young alive.

5. Study the flow chart below.

Which one of the following could represent A, B and C correctly?

	A	B	C
(1)	whale	butterfly	chicken
(2)	frog	whale	dragonfly
(3)	whale	frog	dragonfly
(4)	chicken	dragonfly	whale

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Study the diagram below and answer questions 6 and 7.

The parts of a plant, W, X, Y and Z, are labelled as shown in the diagram below.

6. Which one of these parts allows the plant to make food?

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

7. Which one of the following correctly describes the functions of parts Y and Z correctly?

	Y	Z
(1)	To hold the plant upright	To hold the plant firmly to the ground
(2)	To hold the plant firmly to the ground	To carry water from Z to other parts of the plant
(3)	To carry water from X to other parts of the plant	To absorb water and mineral salts
(4)	To store food for its young	To provide food for us

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8. Which of the following living things can make its own food?

A Moss
B Toadstool
C Bread Mould
D Bird's Nest Fern

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

9. Which of the following organs make up the human respiratory system?

A Heart
B Nose
C Lungs
D Windpipe

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

10. Which one of the following actions does **not** require the use of joints in the skeletal system?

(1) Riding a bicycle
(2) Blinking your eyes
(3) Running a marathon
(4) Bouncing a basketball

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11. Study the diagram of the digestive system below carefully.

In which of the following parts of the human digestive system would digestion take place?

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

12. Benedict ran round the school track for 20 minutes at the same speed. He used a device that measured his heartbeat every 5 minutes during his run. Which one of the following graphs best represents the change in Benedict's heartbeat during the run?

(1)

(2)

(3)

(4)

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13. Wendy wanted to find out how the number of turns of a wire coiled around a nail will affect the strength of the electromagnet made. Which two setups should she use to make it a fair test?

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

14. Mary set up seven magnets as shown in the diagram below.

What could the poles of parts A B C and D be?

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

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15. Muthu drew up the classification table below during his Science lesson at school. Which one of the following pairs of light sources had been **wrongly** classified?

	Natural light source	Man-made light source
(1)	star	street lamp
(2)	sun	traffic light
(3)	ceiling light	lightning
(4)	fireflies	fireworks

16. Alex shone a light from a torch and placed 4 objects between the torch and tell wall. The objects were made of different materials but of the same thickness and size. Which one of the following materials will cast the darkest shadow on the wall?

(1) wood
(2) clear glass
(3) frosted plastic
(4) tracing paper

17. Light from a Jaser pointer was shone on a mirror. Which one of the following shows the correct path taken by the ray of light?

(1)

(2)

(3)

(4)

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18. Chloe classified the following objects into the chart below.

Which one of the following objects can be correctly classified into groups X, Y and Z??

	Group X	Group Y	Group Z
(1)	stapler	clear glass	aluminium foil
(2)	tissue paper	spectacle lens	stapler
(3)	clear glass	aluminium foil	cardboard
(4)	cardboard	tissue paper	spectacle lens

19. Which one of the following statements best explains why a shadow is formed?

A Light can be reflected
B Light is a form of energy
C Light travels in straight lines
D Light cannot pass through some objects.

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

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20. Gareth shone a torch at the football and cast a shadow of the football on the screen as shown in the diagram below.

Which of the following actions could make the shadow of the football bigger?

A. Move the football nearer to the torch.
B. Move the football nearer to the screen.
C. Move the screen further away from the ball.
D. Move the torch further away from the fooball.

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

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21. Dewi set up an experiment to study the formation of shadows. She placed a rectangular shoe box in front of a soft drink can.

Dewi shone the torch at the 2 objects as shown the diagram below. She observed that a shadow was cast on the screen.

Which one of the following shadows would Dewi observe on the screen?

(1)

(2)

(3)

(4)

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22. Jane started walking from position A towards a lighted street lamp which was at position B. She walked past the lighted street lamp to reach position C.

Which one of the following statements correctly describes Jane's shadow as she walked from position A to position C?

	At position A	At position B	At position C
(1)	Jane's shadow was in front of her	Jane's shadow was the longest	Jane's shadow was behind her
(2)	Jane's shadow was behind her	Jane's shadow was the shortest	Jane's shadow was in front of her
(3)	Jane's shadow was in front of her	Jane's shadow was the longest	Jane's shadow was in front of her
(4)	Jane's shadow was behind her	Jane's shadow was the shortest	Jane's shadow was behind her

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23. Three pupils, Amy, Ben and Carlo were given an inflated balloon and each provided a reason to explain why the air inside the balloon is considered a matter.

Amy : Air occupies space in the balloon.
Ben : Air takes the shape of the balloon
Carlo : Air cannot be seen and has no smell.

Which of the pupils had provided a **correct** explanation?

(1) Amy only
(2) Ben only
(3) Amy and Carlo only
(4) Ben and Carlo only

24. Study the information shown below.

Mass: 320 g Volume: 90 cm^3	Mass: 300 g Volume: 120 cm^3	Mass: 280 g Volume: 200 cm^3

Based only on the information provided, which one of the following statements is **wrong**?

(1) Cube A occupies less space than Cube B.
(2) A smaller cube is always lighter than a bigger cube.
(3) Cube B is heavier than Cube C but lighter than Cube A.
(4) The volume of the cube increases when its size increases.

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25. Li Ling filled a measuring cylinder with 20 ml of water. Then, she dropped pebble A into the measuring cylinder and recorded the new water level. Next, she dropped 3 other pebbles, B, C and D, of different sizes, one by one, into the water. The new water level was recorded after each pebble was dropped. **No pebble was removed.**

The diagram below shows the final reading when all 4 pebbles had been dropped inside the measuring cylinder.

The table below shows the reading recorded when an additional pebble was dropped into the measuring cylinder.

Pebble added	Water level (ml)
A	22
A + B	28
A + B + C	32
A + B + C + D	40

Which one of the following correctly arranges the pebbles from the greatest volume to the smallest volume?

greatest volume ⟶ smallest volume

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

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26. Study the flow chart below carefully.

Based on the flowchart, which of the following statements are **correct**?

A R is a gas.
B S can only be a solid.
C Q is a matter but P is not a matter.
D R can be compressed but S cannot be compressed.

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

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27. Lily filled two beakers, A and B, with 100 cm^3 of oil each. She placed beaker A in a freezer and left beaker B near a window. After one day, both beakers were collected and immediately tilted sideways.

Which one of the following showed the correct water level of both beakers when they were tilted?

(1)

(2)

(3)

(4)

28. The diagram below shows 3 objects, X, Y and Z, on a lever balance.

Based only on the diagram, which one of the following statements can be concluded?

(1) Objects X and Z have the same mass.
(2) Objects Y and Z have the same mass.
(3) Object Z has a smaller mass than object X
(4) Object Z has a greater mass than objects X and Y.

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NANYANG PRIMARY SCHOOL

PRIMARY 4 SCIENCE

SEMESTRAL ASSESSMENT 1
2014

BOOKLET B

Date : 8 May 2014

Duration : 1 h 45 min

Name : _____ ( )

Class: Primary 4 ( )

Marks Scored:

Booklet A:		60
Booklet B :		40
Total		100

Any query on marks awarded should be raised by 20 May 2014. We seek your understanding in this matter as any delay in the confirmation of marks will lead to delays in the generation of results.

Parent's signature: .....

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29. Study the classification chart shown below.

How are the objects in Group P similar to those in Group Q?

A They have mass.
B They have a definite volume.
C They cannot be compressed.
D They take up the shape of the container they are in.

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

30. Beth had 2 containers, X and Y, of the same mass. She filled container X to the brim with water, as shown in the diagram below. Next, she poured all the water in container X into container Y.

If no water was spilled, which one of the following observation would she **not** make?

(1) The water level and the shape of water changed.
(2) The volume of water and the shape of water changed.
(3) The mass of water and the volume of water remained unchanged.
(4) The mass of water remained unchanged but the shape of water changed.

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Section B (40 marks)
Write your answers to questions 31 to 44 in the spaces provided.

31. Two living plants and one plastic plant were placed into 3 identical containers filled with 200ml of water. A layer of oil was poured into each container to prevent any water loss to the environment.

The volume of water in each container was measured on the 7th day and recorded in the table below.

Container	Volume of water (ml)	
	Day 1	Day 7
A	200	180
B	200	175
C	200	200

(a) Which one of the containers, A, B or C, most likely contained a plastic plant? [1]

Container _____

(b) Explain why the amount of water in containers A and B decreased in Day 7. [1]

_____

_____

(c) Besides water, state 2 other conditions that the two living plants need in order to grow well. [1]

(i) _____

(ii) _____

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32. The table below shows four groups of animals, A, B, C and D, and their characteristics.

Animal Group			
A	B	C	D
• Has 3 body parts • Lays eggs • Has a pair of feelers	• Has scales • Has gills • Most lay eggs	• Has hair • Gives birth to young alive • Produces milk	• Has beak • Has feathers • Lays eggs

(a) Based only on the information above, identify the animal group. [2]

A: _____

B: _____

C: _____

D: _____

(b) Give an example of an animal that can be placed under group C. [1]

_____

(c) State another characteristic of animals that belong in group A. [1]

_____

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33. The table below lists the characteristics of four different living things, A, B, C and D. A tick (√) in each box indicates the characteristics that are present in the living thing.

Characteristic of living thing	Living things			
	A	B	C	D
Has seeds			√	
Have fins to help it move		√		
Has 6 legs				√
Can move about from place to place		√		√
Reproduce by spores	√			

(a) Classify the four living things in the chart below by writing A, B, C and D in the correct boxes. [2]

(b) Study animal X below.

Animal X

John classified animal X as an insect. State two characteristics of the animal shown above to explain why he was wrong. [2]

(i) _____

_____

(ii) _____

_____

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34. Study the diagram below. W and X represent parts of the plant.

(a) Give an example of a plant that can store food in part X. [1]

_____

(b) If all the part W in the plant above are removed, what would happen to the plant after 2 weeks? Explain your answer. [2]

_____

_____

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35. The diagram below shows the human digestive system.

(a) In the boxes provided, identify parts of the digestive system. [2]

Sally often gobbles her food. Her mother always reminds her to chew her food well before swallowing.

(b) What is the purpose of chewing? [1]

_____

_____

_____

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36. Sammy had three iron bars, P, Q and R. Two of the iron bars were magnetised. She labelled the ends of the bars as shown in the diagrams below.

Bar P Bar Q Bar R

She brought the ends of the iron bars close to each other to observe the effect. The results were shown in the table below.

Ends that were brought close to each other	Observations
A and C	Attract
B and D	Attract
A and E	Repel
C and F	Attract
A and D	Attract

(a) Based on the results above, which one of the iron bar is **not** a magnet? [1]

Bar _____

(b) Explain how a non-magnetised iron bar could be turned into a magnet using another magnet? [1]

_____

_____

(c) Sammy did something to one of the magnets and it could not attract a steel paper clip anymore. Suggest what could have been done to the magnet. [1]

_____

_____

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37. One sunny afternoon, David conducted an experiment to find out if light is needed for him to see things. David painted the inside of a shoebox with black paint and sealed it up with glue. Next, he cut a hole (hole A) on top of the sealed shoebox and another smaller hole (hole B) on one of its side. Then, he put a stone into the shoebox through hole A, as shown in the diagram below.

(a) David then covered hole A with a piece of thick cardboard and looked through hole B. He realised that he could not see anything in the box. Explain why. [1]

_____

_____

(b) What can he conclude from his experiment? [1]

_____

_____

(c) Which property of light enables him to see both the sone and the box? [1]

_____

_____

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38. The diagram below shows the top view of a corridor. Mary is standing at the position marked A.

With the help of three mirrors, Mary could see the star at the end of the tunnel.

With a pencil and ruler, draw arrows to show the path of light that makes it possible for Mary to see the star at the end of the tunnel. [2]

39. The graph below shows the amount of light which passes through materials A, B, C and D.

Which material should Mr. Tan choose for his bedroom curtains if he wants his room to be as dark as possible during the day? Explain your answer. [2]

_____

_____

_____

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40. Farmer Wong placed a pole in his farm and observed the shadow of the pole formed on the ground at different times of the day as shown in the diagram below.

(a) If shadow P was observed at 8 a.m, fill in the table below to identify the shadows that would be observed at 10.30 a.m and 12 noon. [1]

Time	Shadow
8 a.m.	P
10.30 a.m.	
12 noon	

(b) On the diagram below, **draw the shadow** of the pole that was observed on the ground by Farmer Wong at 4 p.m. [1]

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41. Miss Wang had a container with a capacity of 50 cm^3. She fitted a pump into the container. Each time she pushed the pump, 50 cm^3 of air would enter the container. Miss Wang pushed the pump 3 times.

Miss Wang's pupils, Ben and Jerry, each drew a line graph to show the amount of air in the container based on the experiment above.

Ben's Line Graph

Jerry's Line Graph

(a) Which pupil had drawn the correct graph? Explain your answer. [1]

_____

_____

_____

Using the same set of apparatus, Miss Wang filled the container with 50 cm^3 of sand. She tried to push the pump and observed that she was only able to push the pump in slightly.

(b) Since sand is a solid that cannot be compressed, explain Miss Wang's observation. [1]

_____

_____

_____

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42. Devi prepared two set-ups, as shown in the diagrams below.

(a) She poured water into the funnels of both set-ups and observed that set-up 2 allowed water to flow into the conical flask more quickly than set-up 1. Explain Devi's observation. [1]

_____

_____

_____

(b) Devi wanted the water to flow into the conical flask even faster in set-up 2. What change(s) should she make to set-up 2 in order to do so?

Tick the appropriate box (es) to indicate the change(s) needed. [1]

	Change made to set-up 2	Tick
i.	Use more tubes.	
ii.	Use a longer tube.	
iii.	Use a narrower tube.	

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43. Ramly wanted to find out the volume of a stone. He prepared the following set-up, as shown in the diagram below. He had to pour some water into the displacement can before lowering the stone into it.

(a) In the diagram above, draw the water level in the displacement can to show the amount of water needed. [1]

(b) In the table below, write down steps 2 and 3 that Ramly would take to find the volume of the stone after filling the can with water. The first word in steps 2 and 3 have been provided. [2]

Step 1	Fill the displacement can with the correct amount of water.
Step 2	Lower _____
Step 3	Record _____

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44. Zhao Rong fixed one end of a deflated balloon tightly to a straw using a rubber band. He then taped the other end of the balloon to the bottom of a basin which was filled with water. After he had marked the water level, he blew air into the straw, as shown in the diagram below.

(a) State one observation that Zhao Rong would make about the water level in the basin when air was blown into the straw. Explain your answer [2]

_____

_____

Zhao Rong attached another balloon over the mouth of an empty plasic bottle, as shown in the diagram below.

(b)(i) He tired to blow air into te balloon but realized that it would not inflate. Give an explanation for his observation. [1]

_____

_____

(b)(ii) Without removing the balloon from the mouth of the bottle, state a change that Zhao Rong could make to the bottle so that the balloon would be able to inflate when air was blown into it. [1]

_____

_____

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ANSWER SHEET

EXAM PAPER 2014
SCHOOL : NANYANG
PRIMARY : P4
SUBJECT : SCIENCE
TERM : SA1

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

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
4	4	2	2	2	1	2	3	1	4	4	3	2

31)a)C.
b)Plants and water, the roots of the plant in containers A and B absorbs water for the plant. Thus, the amount of water in containers A and B decreased on Day 7.
c)i)Air ii)sunlight.

32)a)A: Insects B: Fish C: Mammals D: Birds
b)Monkey.
c)The animals that belong in group A has 3 pairs of legs.

33)a)B, D, C, A
b)i)Insects have 6 legs but animal X has have 8 legs.
ii)Insects have 3 body parts but animal X have 2 body parts.

34)a)Carrot plant.
b)The plant will die. Plants need food to survive, part W makes food for the plant, if all the part W in the plant are removed , the plant will not be able to make any more food and it with die.

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35)a)i)Gullet ii)Stomach iii)small intestine iv)large intestine

b)Chewing helps to break the food into smaller pieces so that digestion will be easier as there will be more exposed surface area for the digestive juice to work on.

36)a)Q.

b)Stroke the iron bar with one pole of magnet in one direction several times.

c)The magnet could have been heated.

37)a)There is no light in the shoe box and the stone is not a light source. Thus, David will not be able to see anything as the store will no be able to reflect any light into David's eyes.

b)David can conclude that light is needed for David to see things.

c)Light can be reflected.

38)

39)Material C. Among all the material, material C allows the least light D pass through, thus, it is the most suitable to be made as a bedroom curtain to let Mr Tap's room be as dark as possible during the day.

40)a)S, R

b)

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41)a)Pen. Air can be compressed. Thus, no matter how many number of pumps are pumped in, the volume of the air the container will always be the same.

b)There is same air particles between the sand. Since air can be compressed, some air is able to enter.

42)a)There is a tube in set-up 2, allowing air to escape from the tube and water to flow from the funned into the flask, taking up the space which air had escaped while air is trapped in set-up 1, so water flows faster into set-up 2 tha set-up 1.

b)i)

43)a)

b)2)Lower the store into the water completely and water will flow into the measuring cylinder.

3)Record the amount of water in the measuring cylinder and that is the volume of the store.

44)a)Water level in the basin will increase. Air in the balloon take up more space in the balloon, making the balloon inflated and the water level to rise.

b)i)There is air in the empty plastic bottle and air takes up space. Thus, the balloon will not be able to be inflated.

ii)Zhao Rong could some holes in the bottle.

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RAFFLES GIRLS' PRIMARY SCHOOL

SEMESTRAL ASSESSMENT (1)

2014

Section A	60
Section B	40
Your score out of **100** marks	
Parent's signature	

Name : _____ Index No: ___Class: P4__

6 May 2014 **SCIENCE** **Att: 1 h 45 min**

SECTION A (30 x 2 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 (OAS) provided.

1. Rina had some guppies.
Without adding more fish into the tank, she observed that the number of guppies in the tank had increased after one month.

Based on the information above, what can Rina conclude about one characteristic of living things?

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The table below shows the characteristics of animals X, Y and Z.

Animal	With fur	With wings	With 2 pairs of legs	With 3 pairs of legs
X	✓		✓	
Y		✓		✓
Z	✓		✓	

Based on the information above, answer **Questions 2 and 3.**

2. In what way(s) is/are animals X and Z similar.

A Both have fur
B Both have wings
C Both have 2 pairs of legs only

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

3. Which animal(s) is/are likely to be an insect?

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

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4. The chart below shows how some plants can be grouped.

Which one of the following best represents rose and water lily?

	rose	water lily
(1)	A	C
(2)	B	C
(3)	C	A
(4)	C	B

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5. Ahmad placed 4 similar pieces of bread in four identical jars, W, X, Y and Z. The pieces of bread in jars X and Z were toasted. He then covered the jars to make them air-tight. He left jars W and X on the kitchen table and jars Y and Z in the refrigerator.

In which one of the jars would the piece of bread most likely turn mouldy the fastest?

(1) Jar W
(2) Jar X
(3) Jar Y
(4) Jar Z

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6. The diagram below shows the classification of some animals.

Which one of the following represents X, Y, A and B respectively?

	X	Y	A	B
(1)	3-stage life cycle	4-stage life cycle	cockroach	grasshopper
(2)	3-stage life cycle	4-stage life cycle	grasshopper	beetle
(3)	4-stage life cycle	3-stage life cycle	mosquito	chicken
(4)	4-stage life cycle	3-stage life cycle	butterfly	cockroach

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7. Dion carried out an experiment to find out how the surrounding temperature affects the life cycle of animal X.
She prepared 4 set-ups, A, B, C and D, and observed the length of time animal X was in each stage of its life cycle. She recorded the results in the table below.

		Number of days at each stage		
Set-up	**Surrounding temperature (°C)**	**Egg**	**Larva**	**Pupa**
A	23	2	8	3
B	28	2	7	2
C	32	1	6	2
D	36	1	5	2

Based on the information above, which one of the following statements is correct?

(1) The animal X in set-up A survived the longest.

(2) Animal X will die faster when the surrounding temperature gets higher.

(3) The higher the surrounding temperature, the shorter the time needed for animal X to develop from the egg stage to the adult stage.

(4) The higher the surrounding temperature, the longer the time needed for animal X to develop from the egg stage to the adult stage.

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8. The diagrams below show the different stages of development of a plant.

Which one of the following shows the correct sequence of the development of the plant above?

(1)

(2)

(3)

(4)

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9. Nicole prepared four set-ups, P, Q, R and S, using identical containers and similar seeds as shown in the diagrams below.
She placed all the set-ups in a room near the window.

At the end of the experiment, she observed that the seeds grew into seedlings in some of the set-ups.

What was Nicole trying to find out from her experiment?

(1) Whether seeds can grow on cotton wool

(2) Whether containers allow seedlings to grow well

(3) Whether seeds need water and air to grow into seedlings

(4) Whether seeds need warmth, water and air to grow into seedlings

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10. Which part in the human digestive system helps to break food into smaller pieces?

(1) Gullet
(2) Teeth
(3) Tongue
(4) Large intestine

11. Which one of the following statements about the human digestive system is true?

(1) Digested food is absorbed through the walls of the small intestine.

(2) Digested food travels from the small intestine to the large intestine.

(3) Digestion ends in the small intestine and no digestion will take place there.

(4) The muscular walls of the gullet help to push the undigested food to the large intestine.

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12. The diagram below shows some parts of the human digestive system.

In which of these parts are digestive juices produced?

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

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13. The diagram below shows how a substance is moved from one system to another.

Which one of the following best represents X and substance Y?

	X	Substance Y
1)	Skeletal System	undigested food
2)	Muscular System	digested food
3)	Circulatory System	digested food
4)	Circulatory System	undigested food

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14. The diagram below shows a tree with one part labelled X.

What is/are the function(s) of the part labelled X?

A To hold the tree upright.
B To anchor the tree to the ground.
C To help the tree make food during the day.
D To take in water and mineral salts from the ground.

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

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15. Mary placed a plant bearing white Flowers, A, B and C, in a trough of red-coloured water. The roots of the plant were removed.
After some time, Mary observed that Flower A had turned red while Flowers B and C remained white.

Mary cut one part of the stem and observed that its cross-section was stained red as shown below.

Cross-section of stem

At which part of the stem, W, X, Y or Z, did Mary most likely make the cut?

(1) W (2) X

(3) Y (4) Z

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Ali used 4 identical pots of seedlings, A, B, C and D, for his experiment. Each pot contained the same amount of soil of the same type. He watered each pot of seedlings daily.
After 9 days, he measured and recorded the height of the seedlings in each pot as shown in the table below.

Pot	Height of seedlings after 9 days (cm)	Amount of water given each day (ml)
A	5	20
B	8	30
C	10	35
D	13	45

Based on the information above, answer **Questions 16 and 17.**

The seedlings have to grow to a height of at least 8 cm in 9 days to be considered as growing well.

16. What is the **least** amount of water Ali had to give to the seedlings each day to ensure that they grow well?

(1) 20 ml
(2) 30 ml
(3) 35 ml
(4) 45 ml

17. What can Ali conclude from his experiment?

(1) The seedlings grew more quickly when they were given more water daily.
(2) The seedlings died more quickly when they were given less water daily.
(3) The seedlings grew more slowly when they were given more water daily.
(4) The seedlings died more quickly when they were given more water daily.

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18. Eric carried out an experiment using 4 rods which were made of different metals, P, Q, R and S, of the same thickness and length.
He scratched one rod against another, one at a time.

He recorded his observations in the table below. A tick (✓) in the box indicates scratch marks on the rod.

Types of metals	scratch marks observed on the materials			
	P	Q	R	S
P		✓	✓	✓
Q				
R		✓		
S		✓	✓	

Which one of the following metals is the hardest?

(1) P (2) Q

(3) R (4) S

19. Which of the following is/are **not** matter?

A car
B rain
C wind
D shadow

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

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20. John placed two identical balloons, X and Y, on each end of a rod of a balance as shown in diagram 1.
John released the air in balloon Y. The rod came to rest in a new position as shown in diagram 2.

John's experiment showed that air _____.

(1) has mass
(2) has a definite volume
(3) can be compressed
(4) has no definite volume

21. Jane set up an experiment using the apparatus as shown below.

Jane was able to push in the plunger completely.
What would be the total volume of air in the glass jar now?

(1) 150 cm^3
(2) 350 cm^3
(3) 500 cm^3
(4) 650 cm^3

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22. Four pupils made the following statements about matter.

Pupil A Bacteria are matter.

Pupil B Solids and liquids have mass.

Pupil C The bigger the object, the greater its mass.

Pupil D Solids of the same shape and size occupy the same amount of space.

Which of these pupils made the correct statements?

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

23. David poured 50 ml of water into a measuring cylinder. He then placed object X into the cylinder, followed by object Y and finally object Z.

David drew his observations as shown below.

Based on the information above, which one of the following statements is correct?

(1) Object X has a greater mass than object Y.
(2) Object Y has a greater mass than object X.
(3) Object Y has a greater volume than object Z.
(4) Object Z has a greater volume than object Y.

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24. There are 2 identical beakers, A and B, as shown below.
Beaker A is filled with marbles to the 150-cm³ mark. Beaker B is filled with water to the same level.

The water in beaker B is poured into beaker A.
Which one of the following is most likely to be the water level mark in beaker A?

(1) 150-cm³

(2) 300-cm³

(3) more than 300-cm³

(4) between 150-cm³ and 300-cm³

25. The diagrams below show 2 identical bowls placed on a balance lever. The bowls were filled with 100 cm³ of sand and water respectively.

Based on the information above, which of the following statements are correct?

P The bowls of sand and water have the same mass.

Q The bowls of sand and water have the same volume.

R The bowl of sand has a greater mass than the bowl of water.

S The bowl of sand has a greater volume than the bowl of water.

(1) P and R only (2) P and S only

(3) Q and R only (4) Q and S only

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26. Five magnets with their poles labelled are arranged as shown in the diagram below.

Which one of the following arrangements using the magnets above is **NOT** possible?

(1)

(2)

(3)

(4)

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27. Jeff placed 4 rings, W, X, Y, and Z, through a pole. His observations are shown in the diagrams below.

Jeff wrote some statements based on his observations.

A Both rings W and X are magnets.
B Unlike poles of X and Y are facing each other.
C Unlike poles of W and Z are facing each other.

Which of Jeff's statement(s) is/are **definitely** true?

(1) A only

(2) A and B only

(3) B and C only

(4) A, B and C

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28. Tom suspended magnet A using a string. He brought magnet B near magnet A. He observed that magnet A moved away from magnet B as shown in Diagram 1.

Without moving magnet B, Tom placed a lit candle directly below magnet A. After some time, he observed that magnet A moved a little towards magnet B as shown in Diagram 2.

Key:
→ Direction of movement of magnet

Based on the information above, which of the following statement(s) is/are correct?

W Heating magnet A reduces its magnetic strength.

X Like poles of magnets A and B are facing each other.

Y Suspending magnet A increases its magnetic strength.

Z The force of attraction of magnets is greatest only at one of its poles.

(1) Y only

(2) W and X only

(3) Y and Z only

(4) W, X and Z only

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29. Yiming placed four bars, A, B, C and D, of the same size on rollers. He put them near each other and recorded the direction of movement of the bars as shown in the diagrams below.

Key:
→ Direction of movement of bars

Which of the following identifies the four bars correctly?

	Bar A	Bar B	Bar C	Bar D
(1)	magnet	magnetic object	magnet	magnet
(2)	magnet	magnetic object	magnetic object	magnet
(3)	magnetic object	magnet	non-magnetic object	magnet
(4)	non-magnetic object	magnet	non-magnetic object	magnetic object

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30. The diagram below shows an electromagnet that is used in scrapyards to separate magnetic materials from non-magnetic materials.

Which set of materials would the electromagnet be able to separate?

(1) steel and nickel
(2) plastic and glass
(3) silver and copper
(4) iron and aluminum

End of Section A

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Name : _____ Index No: ____ Class: P4 __ 40

SECTION B (40 marks)
For questions 31 to 44, write your answers clearly in the spaces provided.
The number of marks available is shown in brackets [ ] at the end of each question or part question.

31. The classification chart below shows how some living things are being classified into groups A, B, C and D.

(a) State a common characteristic between the living things in groups C and D. [1]

_____

(b) In which group, A, B, C or D, does the bird's nest fern belong to? [1]

Group _____

(c) The spiny anteater is an animal that reproduce by laying eggs.
Which group, A, B, C or D, does the spiny anteater belong to? [1]

Group _____

Score / 3

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32. James planted a seedling in a pot. He recorded the height of the seedling every two days and plotted a graph as shown below.

(a) What characteristic of living things does the data from the graph show? [1]

_____

(b) How much did the seedling grow from the 4th day to the 10th day? [1]

_____

Score: /2

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33. Pat wanted to find out if the temperature in an incubator will affect the length of time taken for an egg to hatch. She set up two incubators for her experiment. One of them is shown below.

(a) Name the changed variable in Pat's experiment? [1]

_____

_____

(b) Name 2 variables that Pat should keep the same for both her set-ups to ensure a fair test. [2]

Variable 1	
Variable 2	

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34. John set up an experiment to find out the conditions needed for seeds to germinate. The diagram below shows one of his set-ups.

The table below shows the conditions of each of his set-ups.

Set-up	Moist cotton wool	Dry cotton wool	Placed near the window	Placed in a cupboard
P	✓			✓
Q		✓	✓	
R		✓		✓
S	✓		✓	

(a) To find out whether seeds need water to germinate, which two set-ups should John use? [1]

_____

(b) After a few days, John observed that some seeds germinated.

Name the set-up(s) the seeds would most likely germinate. [1]

_____

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35. Graph 1 shows the types of food, W, X, Y and Z, taken into the body's digestive system at the start.
Graph 2 shows the amount of food that remained undigested in the system 5 hours later.

Graph 1

Graph 2

Based on the information above, answer the questions below:

(a) Which type of food, W, X, Y or Z, is **NOT** digested at all? [1]

_____

(b) Which type of food, W, X, Y or Z, is the easiest to digest?
Give a reason for your answer. [1]

_____

_____

(c) Food that is high in fibre takes a longer time to digest than other types of food.

Which type of food, W, X or Y, most likely contains the highest amount of fibre? [1]

_____

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36. Substances A, B, C and D are found in the small intestine. Only substance A is absorbed through the walls of the small intestine as shown in the diagram below.

When the substances travelled further in the digestive system, only substances C and D are absorbed through the walls of the large intestine as shown in the diagram below.

(a) Based on the information above, write a letter, A, B, C or D, that best represents each of the substances below. [2]

Water : _____

Mineral salts : _____

Digested food : _____

Undigested food : _____

(continue to the next page)

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Q36 (continue from previous page)

(b) Fill in the blanks using the words in the box below. [2]

carbon dioxide	oxygen

(i) The circulatory system transports _____ to all parts of the human body.

(ii) The circulatory system transports _____ away from all parts of the human body.

(c) Name the body system that works with the circulatory system to perform the functions stated in part (b). [1]

_____

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37. Peiling poured 500 ml of water into each of the two identical beakers, X and Y. Next, she placed two similar plants into the beakers before covering each beaker with an air-tight lid as shown in the diagrams below.

Three days later, she recorded the volume of water left in the two beakers. Her results are shown in the table below.

	volume of water on the first day (ml)	volume of water on the third day (ml)	volume of water on the fourth day (ml)
beaker X	500	500	i)
beaker Y	500	380	ii)

(a) In the table above, fill in the amount of water left in beakers X and Y on the **fourth day**. [1]

(b) Based on the information above, give a reason for the volume of water left in beakers X and Y on the third day? [2]

	Reason
Beaker X	
Beaker Y	

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38. Fatimah conducted an experiment using four different blocks, A, B, C and D, of similar shape and size. She placed them into a tank filled with water as shown in the diagram below.

In the classification chart below,

(a) write a suitable sub-heading. [1]

(b) classify the blocks by writing the letters, A, B, C and D, in the correct box. [1]

(c) Name one other possible way that Fatimah can classify the blocks that sunk. [1]

_____

_____

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39. The diagram below shows a syringe filled with some water and air. The nozzle of the syringe is tightly sealed.

Siti pushed the plunger and discovered that the plunger could be pushed in slightly.

(a) Explain why the plunger could be pushed in slightly. [1]

_____

_____

(b) Did the volume of the water in the syringe change after the plunger was pushed in slightly? Give a reason for your answer. [1]

_____

_____

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40. The diagrams below show three set-ups, A, B and C, each with a beaker of similar volume and shape. Each of the beakers had an opening of different size at its side. Sam placed an identical funnel over the mouth of each beaker.

Next, Sam poured 100 ml of water into the funnel and measured the time taken for all the water to flow into the beaker.
He recorded the results in the table below.

Set-up	Size of opening (mm)	Time taken for all the water to flow into the beaker (seconds)
A	4	34
B	5	30
C	8	19

(a) How did the size of the opening at the side of the beaker affect the time taken for all the water to flow into the beaker? [1]

_____

_____

(b) In which set-up, A or C, did the water take a shorter time to flow into the beaker? Explain your answer. [2]

_____

_____

_____

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41. Magdalene fully filled a balloon with 500ml of water. She then squeezed the balloon and tied rubber bands around its middle as shown in the diagrams below.

(a) What was the volume of water in the balloon after it had been tied in the middle by rubber bands? [1]

_____

(b) What does the change in the shape of the balloon tell you about the property of water? [1]

_____

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42. Peter placed two identical woollen towels, P and Q, on a balance lever as shown in Diagram 1 below.

Diagram 1

Peter then poured some water on towel Q and the balance lever titled as shown in Diagram 2 below.

Diagram 2

(a) Based on the information above, what could Peter conclude about the property of water? [1]

_____

_____

(continue to the next page)

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Q42 (continued from previous page)

The diagram below shows a pole that is used to hang a blanket to let it dry.

Mrs Tan has two poles, X and Y, of equal length, each made of a different material. The table below shows the information of the two poles.

Pole	Maximum mass the pole can hold just before it breaks (kg)
X	3
Y	6

Mrs Tan has a piece of dry woollen blanket of mass 3 kg.

(b) Which pole, X or Y, should Mrs Tan use to hang the blanket after washing it? Explain your answer. [2]

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43. Meiling made an electromagnet by coiling an iron nail with wire and then connecting the ends of the wire to the batteries as shown below.

Meiling tested the magnetic strength of the electromagnet by counting the number of steel paper clips that the iron nail could attract.

She repeated the experiment by increasing the number of turns of wire around the iron nail. She recorded her observations in the table below.

Number of turns of wire around the iron nail	Number of paper clips the magnetised iron nail attracted
10	2
20	7
30	(a)
40	12

(a) In the table above, fill in the number of paper clips the magnetised iron nail would most likely attract when there were 30 turns of wire around the iron nail. [1]

(b) Based on her observations, how would the number of turns of the wire around an iron nail affect the magnetic strength of the electromagnet? [1]

_____

_____

(c) Name **ANOTHER** way Meiling could increase the magnetic strength of the electromagnet. [1]

_____

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44. Junwei attached magnets P and Q, which had strong magnetic strength, to a balance as shown in Diagram 1 below. The masses of magnets P and Q were 100 g and 80 g respectively.

Diagram 1

Junwei placed another magnet, A, which had strong magnetic strength, directly under magnet Q. He attached magnet A to the table such that it could not move. He observed that magnet P moved upwards and both magnets P and Q balanced as shown in Diagram 2.

Diagram 2

(a) Explain Junwei's observations in Diagram 2. [2]

_____

_____

_____

(continue to the next page)

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Q44 (continued from previous page)

Using the same apparatus in Diagram 2, Junwei moved magnet A and placed it directly below magnet P.

(b) Which one of the diagrams above shows the correct observation made by Junwei?

(i) Put a tick (✓) in the box next to the correct diagram above.

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

_____

_____

End-of-paper

~ Check your work carefully ~

Setters:
M.Y.; Cheng K.H

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Exam Paper 2014 Answer Sheet

School: RAFFLES GIRLS' PRIMARY SCHOOL
Subject: PRIMARY 4 SCIENCE
Term: SA1

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

31. (a) They both make their own food.
(b) C
(c) A

32. (a) Living things grow.
(b) 6cm

33. (a) The temperature of the incubator.
(b) 1: The type of egg used. ; 2: The size of the incubator.

34. (a) P and R
(b) P and S

35. (a) Z
(b) X. The amount of food left undigested was at least after 5 hours.
(c) W

36. (a) C, D, A, B
(b) i. oxygen
ii. carbon dioxide
(c) Respiratory system

37. (a) i. 500
ii. 260
(b) X: The plastic bag wrapping around the roots prevented the roots to take in water.
Y: The roots absorbed water.

38. (a) Floats on water.
(b) Sinks: A, C, D; Floats: B
(c) According to colour.

39. (a) The syringe was partly occupied by air. As the air in the syringe can be compressed, the plunger can be pushed in slightly.
(b) No. Water has a definite volume.

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40. (a) The bigger the opening at the side of the beaker, the shorter time taken for all the water to flow into the beaker.

(b) C. It has a bigger opening than beaker A. Therefore, more air is able to escape to allow water to flow.

41. (a) 500ml

(b) Water has no definite shape.

42. (a) Water has mass.

(b) Y. Pole Y is stronger than pole X. The mass of blanket will be more than 3kg after washing because the blanket had absorbed some water.

43. (a) 10

(b) The more the number of turns around the iron nail, the greater the strength of the electromagnet.

(c) Add batteries to the circuit.

44. (a) Magnet Q and A attracted because their unlike poles were facing each other. Therefore, magnet Q moved downwards.

(b) The North pole of magnet A was facing the North pole of magnet P.

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Rosyth School
Semestral Assessment 1 2014

SCIENCE
Primary 4

Total Marks: 60

Name: _____

Class: Pr 4 _____ Register No. _____ Duration: 1 h 45 min

Date: 15th May 2014 Parent's Signature: _____

Booklet A

Instructions to Pupils:

1. Do not open the booklets until you are told to do so.
2. Follow all instructions carefully.
3. This paper consists of 2 booklets - Booklet A and Booklet B
4. For questions 1 to 30 in Booklet A, shade the correct ovals on the Optical Answer Sheet (OAS) provided using a 2B pencil.
5. For questions 31 to 44, give your answers in the spaces given in the Booklet B.

* This booklet consists of 19 pages.

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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. (60 marks)

1. Brandon observed the characteristics of 2 different types of objects R and S. He then recorded his observation as shown in the table below. A tick (√) shows that the object has the characteristic while a cross (x) shows that the object does not have the characteristic.

Characteristic	Objects	
	R	S
It can grow.	√	x
It can reproduce.	√	x
It can move freely from place to place.	x	x

Based on the information in the table, which one of the following best represents objects 'R' and 'S'?

	R	S
(1)	Fire	Car
(2)	Fern	Ball
(3)	Lion	Mould
(4)	Bacteria	Plant

2. How is a mushroom similar to a hibiscus plant?

A: Both bear flowers.
B: Both respond to changes.
C: Both need water to survive.
D: Both need sunlight to make food.

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

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3. Water enters a plant through its roots. Where does the water go to after entering the plant?

A: Fruits
B: Stems
C: Leaves
D: Flowers

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

4. Study the classification table below.

What P and Q are likely to be?

	P	Q
(1)	Birds	Fish
(2)	Insect	Birds
(3)	Mammals	Fish
(4)	Mammals	Insects

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5. Refer to the flowchart below.

Which is the most appropriate question in the flowchart above?

(1) Does it fly?
(2) Does it lay eggs?
(3) Does it have three body parts?
(4) Does it have a three stage life cycle?

6. Look at the diagrams below. Which one of the following is not a correct life cycle?

(1)

(2)

(3)

(4)

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7. The following is a comparison table between a cockroach and a mosquito.

		Cockroach	Mosquito
A	Lays egg in water.	No	Yes
B	3-stage life cycle.	No	Yes
C	Has wings in its adult stage.	Yes	Yes
D	Spends part of its life in water.	No	Yes

Which of the above comparisons are correct?

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

8. Study the life cycles of Animal P and Animal Q below.

Which of the following statement is true about the life cycles shown above?

(1) Animal P has a young stage but Animal Q does not.
(2) Animal P gives birth to its young alive but Animal Q does not.
(3) Animal P has an egg stage in its life cycle but Animal Q does not.
(4) Animal P has a young that resembles the adult while Animal Q does not.

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9. Study the classification diagram below.

Which one of the following does the animal belong to?

(1) W: Frog
(2) X: Bacteria
(3) Y: Chicken
(4) Z: Butterfly

10. Observe the different parts of the seedling below.

At the stage shown above, which part of the seedling provides it with food to grow?

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

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11. Krishna placed same type of seeds in four different trays A, B, C and D as shown below. He kept the trays along the corridor of his flat.

Which tray of seeds would germinate after a few days?

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

12. The diagram below shows the various development stages as a seed germinates into a young plant.

At which of the above stages, is sunlight not required for growth?

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

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13. James wanted to find out what type of soil was suitable for growing roses. He planted 3 rose plants of similar size in 3 pots A, B and C.

	Pot A	Pot B	Pot C
Material of pot	Plastic	Plastic	Plastic
Type of soil	Garden soil	Sand	Clay
Size of pots	Small	Medium	Large
Amount of water used everyday	250 cm^3	300 cm^3	350 cm^3

James's father told him that he had not carried out a fair test as not all the controlled variables were kept the same.

Which of the following should be kept the same?

A: Size of pot
B: Type of soil
C: Amount of water

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

14. The graph shows how much each of the 4 materials A, B, C and D can bend.

Which one of the properties of materials has been tested above?

(1) flexibilty
(2) hardness
(3) strength
(4) ability to float

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15. Ahmad wanted to test the hardness of 4 materials of the same size, W, X, Y and Z. He used a nail to scratch on each material. Then he recorded his observations in the table below.

Materials	Observation
W	Cut through
X	No scratches
Y	Light scratches
Z	Deep scratches

Which of the following shows the correct order of the materials with regard to hardness?

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

16. The table shows the properties of three types of matter A, B and C. A tick (√) indicates that the matter has the property while a cross (x) indicates that the matter does not have the property listed.

Matter	Has definite shape	Has definite volume	Can be compressed
A	x	√	x
B	x	x	√
C	√	√	x

Which one of the following shows the correct states of A, B and C?

	A	B	C
(1)	gas	solid	liquid
(2)	liquid	gas	solid
(3)	gas	liquid	solid
(4)	liquid	solid	gas

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17. Study the flow chart below.

Which one of the following pairs identifies G and H respectively?

	G	H
(1)	toy car	water
(2)	bottle	oxygen
(3)	milk	balloon
(4)	orange juice	salt

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18. Ahmad filled container M with 60 ml of water. He then poured all the water from container M to container N.

What changes would he observe in container N?

A: Change in shape of water.
B: Increase in mass of water.
C: Increase in height of water.
D: Increase in volume of water.

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

19. May Ling used a lever balance to compare the masses of objects E, F, G and H.

Which of the following shows the correct arrangement of the masses from the heaviest to the lightest?

(1) E, F, G, H
(2) G, F, E, H
(3) E, G, H, F
(4) H, E, F, G

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20. Tom's teacher told him to find the volume of object A. The diagram below shows the position of object A after it is lowered into water.

Tom was given a measuring cylinder filled with some water to help him find the volume of object A.

measuring cylinder

Tom carried out some of the following steps to find the volume of object A

A: Lower object A into the measuring cylinder.
B: Find the difference between the two readings.
C: Read and record the water level in the measuring cylinder.
D: Read and record the volume of object A and the water in the measuring cylinder.

Which one of the following shows the correct steps in order?

	1st	2nd	3rd	4th
(1)	A	B	C	D
(2)	A	C	D	B
(3)	D	C	B	A
(4)	C	A	D	B

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21. Miss Tan was given two tins of condensed milk. She made 1 hole in tin A and 2 holes in tin B. When she poured out the condensed milk, she observed that the condensed milk in tin B flowed out faster than the condensed milk in tin A.

What could be a possible reason for this observation?

(1) More air could move into tin A.
(2) More air could move into tin B.
(3) Condensed milk in tin B has less mass.
(4) Condensed milk in tin A occupies more space.

22. Study the classification table below.

Based on which property has the items above been classified into two groups?
A: Have mass.
B: Occupy space.
C: Definite shape.
D: Definite volume.

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

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23. In which of the following containers can 450cm³ of air be pumped into?

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

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24. Sheela had 3 containers A, B and C with 40ml of water each. She put objects P, Q and R in as shown below. She observed the water level in each container.

What is the volume of object Q?

(1) 15cm³ (2) 20cm³
(3) 35cm³ (4) 40cm³

25. The diagram below shows a pump that has been connected to a beaker. The capacity of the beaker is 700cm³. The beaker contains 100cm³ of water.

When the piston is pushed in completely, 50cm³ of air enters the beaker. What is the volume of air in the beaker after the piston has been pushed in 2 times?

(1) 100cm³ (2) 200cm³
(3) 600cm³ (4) 800cm³

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26. Mary used a light sensor attached to a data logger to find out how much light passes through 4 sheets of different materials – cloth, cardboard, tracing paper and tissue paper. She recorded the results in the graph below.

Which material represents the amount of light that passed through the cardboard?

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

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27. Aini carried out an experiment using three different materials A, B and C, which are placed at the 3-cm, 5-cm and 7-cm markings of a ruler. A torch is shone on the materials as shown in the diagram below. She discovered that light can only reach the 3cm mark on the ruler.

Materials A, B and C were then rearranged in a different order and placed on the 3-cm, 5-cm and 7-cm marks on the ruler. The distance the light travels from the torch is recorded as shown in the table below.

Order of materials	Distance the light travels (cm)
C, B and A	7
B, A and C	5

Which material(s) allow(s) light to pass through?

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

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28. Tom placed object X, which could glow in the dark in four containers - A, B, C and D. He made a hole in each of the four containers. Next, he inserted a pipe in each container. Which container will enable Tom to see object X? All the containers and pipes were made of the same opaque material.

Which of these containers would allow Tom to see the glowing object X in them?

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

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29. Henry used the following apparatus to see a toy robot at one end of a bent tube. He placed some mirrors at positions P, Q, R, S and T. Identify the positions where the mirrors should be placed to enable him to see the toy robot from the other end of the tube.

(1) P, T and Q only
(2) P, Q and R only
(3) P, Q and S only
(4) Q, R and S only

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30. The experiment below was carried out in a dark room. Sheets P, Q and R are arranged in a straight line. When a torch is shone at the hole on sheet P, a bright circular patch of light is seen on sheet R only.

Which one of the following below shows the correct material sheets P, Q and R are made of?

	Sheet P	Sheet Q	Sheet R
(1)	wood	cardboard	clear glass
(2)	cardboard	wood	clear glass
(3)	clear glass	cardboard	wood
(4)	wood	clear glass	cardboard

End of Booklet A

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Rosyth School
Semestral Assessment 1 2014
SCIENCE
Primary 4

Total Marks: 100

Name: _____

Class: Pr 4_____ Register No. _____ Duration: 1 h 45 min

Date: 15th May 2014 Parent's Signature: _____

Booklet B

Instructions to Pupils:

1. For questions 31 to 44, give your answers in the spaces given in Booklet B.

	Maximum	Marks Obtained
Booklet A	60 marks	
Booklet B	40 marks	
Total	100 marks	

* This booklet consists of 14 pages.

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For questions 31 to 44, write your answers in this booklet. (40 marks)

31. The table below shows the characteristics of four things W, X, Y and Z. A tick (√) shows that the thing has the characteristic while a cross (x) shows that the thing does not have the characteristic.

Things	Responds to changes	Needs air, food and water	Can fly
W	✓	x	x
X	✓	✓	x
Y	x	x	✓
Z	✓	✓	✓

Using the information, match the things W, X, Y and Z with the pictures shown below. Write your answers in the boxes. (2m)

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32. The picture below shows 2 animals.

(a) Base on the pictures above, state two similarities of the animals. (1m)

(i)_____

(ii)_____

(b) Which group of animals does the two animals belong to? Support your answer. (1m)

_____

_____

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33. Each of the three jars P, Q and R has a mouse in it. Plastic sheets were used to cover the mouths of the jars. The conditions in each jar were set up as follows:

	Jar P	Jar Q	Jar R
A bowl of water	Yes	Yes	Yes
Some food	Yes	No	No
Some holes in the plastic sheet	Yes	Yes	No

(a) Describe the observations you would make for the experiment above after a few weeks. (2m)

(b) What inference can you make from your observations in (a)? (1m)

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34. The diagram below shows the stages in the life cycle of a mosquito.

(a) Identify Stage P and Q. (1m)

Stage P: _____

Stage Q: _____

(b) Name one difference between Stage P and Stage Q. (1m)

_____

_____

(c) There are some mosquito larvae in the tank below.

Suggest a way to kill the mosquito larvae. Explain why. (2m)

_____

_____

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35. Jasmine carried out an experiment with 20 mealworms. She placed the mealworms in the centre of the tray as shown in the diagram below. She also placed different types of food at the 4 corners of the tray.

After some time, she counted the number of mealworms at each corner. The results were recorded in the table below.

Food	Apple	Bread	Carrot	Egg
Number of mealworms	5	12	2	1

(a) Based on the results from the table, what is the type of food that the mealworms like the most? Explain your choice. (1m)

_____

_____

(b) Why did Jasmine put the mealworms in the centre of the tray? (1m)

_____

_____

(c) Jasmine observed some dead insect skin on the tray, near the mealworms. What can she infer from the observation? (1m)

_____

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36. Andy plants a chilli plant in a pot beside a hibiscus plant. He waters the plants every day.

The graph below shows the growth of the chilli plant for 6 weeks.

(a) What observation can you make about the height of the chilli plant from week 1 to week 6? (1m)

_____

_____

(b) In what way do you think the hibiscus plant has prevented the chilli plant from growing after week 4? (1m)

_____

_____

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37. Clement wanted to find out which material is the most suitable for making a ~~floor mat~~ mop? Three different materials of the same shape and size were placed into a beaker containing 400 ml of water each, as shown in the diagrams below.

After 20 minutes, the materials were then removed from the beaker and the amount of water left in each beaker was recorded as shown in the table below.

Beakers	Amount of water left in the beaker (ml)
X	400
Y	380
Z	290

(a) Rank the cloth A, B and C from the most absorbent to the least absorbent. (1m)

_____

(b) Based on the results in the table above, which cloth is the most suitable for making a mop? Explain your answer. (2m)

_____

_____

_____

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38. Siva placed a ball of plasticine into a measuring cylinder containing 100 ml of water. The volume of the plasticine and the water is shown in the diagram below

(a) What is the volume of the plasticine? (1m)

After this, he took the same piece of plasticine and moulded it into the shape of of a triangle (⬭ ⟶ △) before he placed it into the same measuring cylinder containing 100 ml of water.

(b) What will the volume of the triangular-shaped plasticine be?(1m)

(c) State the property that can be inferred from the experiment above. (1m)

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39. Sue conducted an experiment. She had some pebbles in measuring cylinder A and some dried clay in measuring cylinder B. She poured 50 ml of water into each measuring cylinder and made some observations.

(a) Describe what you would observe about the water levels in measuring cylinders A and B. (1m)

_____

(b) Explain your observation in (a). (2m)

_____

_____

_____

_____

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40. Su Lin inverted a glass into a basin of coloured water. No air escaped from the glass into the basin of water when she inverted the glass. However, she observed that a small amount of coloured water entered the glass as shown in the diagram below.

(a) Explain why a small amount of coloured water entered the glass. (1m)

_____

_____

(b) Why did Su Lin use coloured water instead of clear water for her experiment? (1m)

_____

Next, Su Lin blew air through a straw into the glass. She observed that bubbles were seen in rising up the coloured water in the glass. The water level in the glass also dropped.

(c) Why had the level of coloured water in the glass dropped? (1m)

_____

_____

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41. Mary placed 10 ml of substance W in a syringe as shown below. She covered the nozzle with her finger and tried to push the plunger in. She found that she could push the plunger in.

Mary then replaced substance W with 10 ml of substance X in the syringe shown below and repeated the same procedure. When she tried to push in the plunger, she found that she could not push in the plunger at all.

(a) Based on the above information, what state of matter can substance X and substance W most likely be respectively? (1m)

(i) Substance W: _____

(ii) Substance X: _____

(b) Give a reason for your answer in (a).(2m)

_____

_____

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42. Container P is fitted with a funnel as shown in the diagram below.

container P

(a) The water from the funnel is not able to flow into container P. Explain why. (1m)

A hollow tube was fitted into the stopper some time later. It was noticed that the water from the funnel flowed into container P after the hollow tube was fitted in.

container P

(b) Why was the water able to flow into container P after the hollow tube was fitted in? (2m)

(c) It was observed that the water which was previously in the funnel had a different shape from the water in container P. Explain the reason for this. (1m)

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43. Min Hui used the set-up below to investigate how much light passes through different types of liquid.

She used a light sensor to measure the amount of light (lux) that passed through each liquid and recorded her results in the table below.

Liquid	Units of light(lux)
Milo	35
Tap water	210
Cooking oil	115
No liquid	?

(a) How many units of light will be measured when there is no liquid in the container? (1m)

_____lux

(b) Name 1 variable that Min Hui must keep the same for a fair experiment. (1m)

_____

(c) Why did the cooking oil allow more light to pass through that the Milo? (1m)

_____

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44. Mr Lim conducted an experiment in a completely dark room to find out how much light is reflected by three different materials A, B and C. He set up his experiment as shown in the diagram below.

The table below shows how much light was reflected by each of the materials.

	Material A	Material B	Material C
Distance between material and light source(m)	5	5	5
Amount of light reflected(lux)	40	20	60

(a) Explain why Mr Lim should conduct his experiment in a completely dark room to ensure a fair test? (1m)

_____

_____

(b) Based on the results of his experiment, which material would be most suitable for making bicycle reflectors for cyclists who cycle at night? Explain your answer. (1m)

_____

_____

The End of Paper

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Year: 2014

Level: Primary 4

School: Rosyth School

Subject: Science

Semester: SA1

Booklet A:

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
2	2	4	3	3	1	3	4	3	2
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
4	1	3	1	2	2	1	2	2	4
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
2	1	4	1	3	2	4	3	3	4

Booklet B:

Q31)

W	X	Z	Y

Q32) a) i) Both the cockroach and the ant have six legs.

ii) Both the cockroach and the ant have feelers.

b) They belong to insects. Both of them have three body parts and an exo-skeleton.

Q33) a) The mouse in both jar Q and R will die as there is no food in Q and there is no air and food in R. The mouse in jar P will no die.

b) Living things need air, food and water to survive.

Q34) a) Stage P: Larva

Stage Q: Pupa

b) Stage P eats a lot but stage Q doesn't eat and stays inside to prepare for the next stage.

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c) Pour oil on the surface of the water. The oil blocks the oil from coming into the water so ha he larvae will not get air and will die.

Q35)a) The type of food is bread. Bread has the most mealworms eating it.

b) To make the distance between the mealworms and the food and the food corners are equal.

c) She can infer that insects moult and living things grow.

Q36)a) From week 1 to week 4, the height of the plant kept increasing until week 4 to week 6, the height of the plant remained he same.

b) The hibiscus plant blocked the leaves of the chili plant from the sunlight. Without sunlight, the chili plan can't make food and without food, it can't grow.

Q37) a) C, B, A

b) Material Z. It absorbs the most water out of all the maerials.

Q38)a) $40cm^3$

b) $40cm^3$

c) The Plasticine has a definite volume that no matter how you cut it, it will still be the same volume.

Q39)a) The water level in cylinder A will be lower than the water level in cylinder B.

b) In cylinder A, there are spaces between the pebbles so the water occupies these spaces. In cylinder B, there are no empty spaces in the clay for the water.

Q40)a) Air in the glass can be compressed so that water could not enter the glass.

b) The level of the coloured water can be clearly seen.

c) The bubbles are air which pushed the water level in the cup down.

Q41) a) i) Gas

ii) Liquid

b) Air can be compressed but water cannot.

Q42) a) Air occupies space.

b) The hollow tube allowed air to escape, giving space for water to enter.

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c) Water does not have a definite shape so it is able to take the shape of the container.

Q43) a)210

b)The distance between the torch light and the light sensor.

c) The cooking oil is translucent but milo is opaque.

Q44) a) As additional light will also fall on the light sensor and it will also detect the light.

b) Material C. It reflects the most light and thus it's the most suitable.

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SINGAPORE CHINESE GIRLS' SCHOOL
FIRST SEMESTRAL ASSESSMENT 2014
PRIMARY 4 SCIENCE

Name: _____ ( ) Date: _____

Class: 4 Duration: 1 hr 25 min

Part I (50 marks)

For each question from 1 to 25, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4) on the Optical Answer Sheet provided.

1. Peter bought some fish and placed them into 2 separate fishbowls as shown below. He placed a lid on the fishbowl in Setup B. He fed the fish in both setups.

Setup A

Setup B

What was the aim of his experiment? He wanted to find out whether animals needed _____.

1) air to survive
2) food to survive
3) sunlight to survive
4) warmth to survive

2. Ginny conducted an experiment to find out the conditions in which bread mould grow best. She made the following setups as shown below.

A: fresh bread with no water added

B: fresh bread with water added

C: toasted bread

Ginny left the bread in 3 bags and sealed them. She left the bread inside the bags for 7 days. Arrange the set-ups in order beginning with the one which would have the most mould growing on it.

1) A, B, C
2) A, C, B
3) B, A, C
4) C, A, B

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3. Study the diagram below.

Which of the following conclusions could be made from the information given above?

A) Animal X can fly.
B) Animal X can be a bird.
C) Animal Y can be a fish.
D) Animal Y cannot be an insect.

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

4. Study the classification table below.

Which of the following plants have been classified wrongly?

1) Moss
2) Orchid
3) Mosquito Fern
4) Bird's Nest Fern

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5. Study the classification table below.

Group A	Group B	Group C
Paper	Key	Silk scarf
Cotton Socks	Ceramic bowl	Leather bag
Wooden chair	Metal spoon	Wool jacket

In which group would you put a silver coin and a balloon?

	Silver coin	Balloon
1)	Group A	Group B
2)	Group B	Group A
3)	Group C	Group A
4)	Group B	Group C

6. Which of the following body systems is **NOT** correctly matched to its function?

	Body Systems	Function
1)	Circulatory	Pumps blood to the other parts of the body
2)	Respiratory	Transports oxygen and carbon dioxide throughout the body
3)	Skeletal	Gives the body its shape and protects the important organs
4)	Digestive	Breaks down the food we eat into simpler substances

7. Study the diagram of the digestive system below.

What may happen if food passes through Part S too quickly?

1) The food will not be digested at all.
2) The waste from the body will not be removed.
3) Less digested food will be absorbed into the blood.
4) Less water will be removed from the food by the body.

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8. What of the following about plant roots is **incorrect**?

A: Roots make food for the plant.
B: Roots hold the plant firmly to the ground.
C: Roots take in water and mineral salts for the plants.
D: Roots transport water to the leaves and mineral salts to the other parts of the plant.

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

9. May wants to find out whether plants grow better in the dark or in the light. Which set-up must she use?

1)

In the garden

3)

In a cupboard

2)

In the garden

4)

In a cupboard

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10. Hans cut part of the stalk of a chrysanthemum and placed each part into 2 cups of coloured water as shown below.

Which of the following will Hans observe after 1 day?

	Water-carrying tubes			Food-carrying tubes		
	A	B	C	A	B	C
1)	Blue	Red	Purple	White	Blue	Red
2)	White	White	White	Purple	Blue	Red
3)	Purple	Blue	Red	White	White	White
4)	White	Blue	Red	Purple	White	White

11. A bar magnet is placed on a styrofoam board and left to float in a basin of water. It always comes to rest with the North-seeking pole facing the North as shown in diagram below.

What will happen to the styrofoam board if another magnet, X, is placed near the North-seeking pole of the bar magnet on the stryofoam board?

1) The styrofoam board will sink.
2) The styrofoam board will not move.
3) The styrofoam board will move towards Magnet X.
4) The styrofoam board will move away from Magnet X.

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12. Wendy conducted an experiment using 4 rod magnets. She took one of the magnets and brought it near some paper clips. She recorded the number of paper clips attracted to the different parts of the magnet in the table shown below. She then made some markings on the magnet and labelled them.

Part	No. of Paper Clips Attracted
A	3
B	0
C	6
D	4

Which of the following rod magnet was the one Wendy took?

1) A C D B

2) B A D C

3) C D B A

4) C D A B

13. A nail can be made into a temporary magnet by the stroking method as shown below. Which of the following nail/s can be magnetised?

1) Copper only
2) Iron and Steel only
3) Copper and Aluminium only
4) Copper, Steel and Aluminium only

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14. Which of the following electromagnets is the strongest?

(1) 1 battery

(2) 2 batteries

(3) 1 battery

(4) 2 batteries

Use the information in the table below to answer Questions 15 and 16.

Animal	Lays Eggs	3-stage life cycle	Young moults
W	✓	✓	✓
X	✓	✓	
Y			
Z	✓		✓

15. Which of the following animals could be a frog?

1) W
2) X
3) Y
4) Z

16. Based on the table above, which of the following statements is/are **correct**?

1) Animal W could be a cockroach.
2) Animal X could be a grasshopper.
3) Animal Y could be a penguin.
4) Animal Z could be a goldfish.

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17. The diagram below shows a few stages of the growth of a baby plant after the seed has germinated.

The table below shows the mass of the seed leaves as it progresses from stage P to stage T.

Stage	Mass of Seed leaves
P	0.48g
Q	0.35g
R	0.28g
S	0.24g
T	0.15g

Which of the following statements best explains why the mass of the seed leaves decreases from Stages P to T?

1) The leaves made food for the baby plant.
2) The leaves provided food for the baby plant.
3) The seed leaves made food for the baby plant.
4) The seed leaves provided food for the baby plant.

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18. Study the classification chart below.

Which category should water be classified under?

1) W
2) X
3) Y
4) Z

19. Roy twisted an inflated balloon into the shape of a horse.

Which property/properties of air allowed Roy to shape the balloon?

A) Air cannot be seen.
B) Air has definite mass.
C) Air can be compressed.
D) Air has no definite shape.

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

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20. Ali pumped different amounts of air into 4 containers of different volume. The table below shows the data.

Container	Volume of container (cm^3)	Amount of air pumped into container (cm^3)
A	200	200
B	200	300
C	200	400
D	200	500

Which container is the heaviest?

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

21. Water can exist in different states of matter.

What are processes P and Q?

	P	Q
1)	Melting	Freezing
2)	Melting	Boiling
3)	Freezing	Boiling
4)	Freezing	Melting

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22. The water in each of the 3 containers shown below is heated until it boils. What could the temperature of the water in each beaker be when it's boiling?

	Container A	Container B	Container C
1)	120°C	70°C	100°C
2)	100°C	100°C	100°C
3)	100°C	120°C	70°C
4)	70°C	100°C	120°C

23. Rachel conducted an experiment to test if the exposed surface area of water affects the rate of evaporation. She conducted the experiment using water at room temperature.

In order to conduct a fair test, which of the following must be done?

1) The containers must be of the same shape.
2) The containers must be of the same thickness.
3) The water must be of the same volume at the end.
4) The water must be of the same volume at the start.

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24. 4 similar towels are washed together and placed on the tables of 2 different rooms to dry.

Which towel will dry the fastest?

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

25. Susie placed 4 cups in a room with temperature of 30°C. On which of the following cups A, B, C and D will water droplets form on the outer surface as shown below?

1)

Cup A filled with water of 80°C

2)

Cup B filled with water of 30°C

3)

Cup C filled with water of 5°C

4)

Cup D filled with water of 65°C

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SINGAPORE CHINESE GIRLS' SCHOOL
FIRST SEMESTRAL ASSESSMENT 2014
PRIMARY 4 SCIENCE

Name:_____ ( )
Class: 4 SY

Date:
Duration: 1 hr 25 min

Written Paper (Part I)		50
Written Paper (Part II)		30
Total		80
Percentage		%

Parent's Signature

Part II (30 marks)
Read and answer Questions 26 to 35.

26. Mabel found a creature in her garden. She drew a picture of it as shown below.

a) Mabel concluded that the creature is **not** an insect. List 2 characteristics of insects that the creature does not have. (2m)

(i) _____

(ii) _____

b) Mabel then placed the creature in a container and sealed it with a cap. She did not feed the creature as well. After one week, the creature died. What does this tell you about the creature? (1m)

_____

_____

3

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27. The figure below shows a baby cot.

Which of the following are the **main** properties of the materials that are required when making the bed? **Put ONE tick ✓only for each part** in the appropriate boxes below. (3m)

Parts of Bed	Flexible	Opaque	Strong	Can Float
Leg				
Mattress				
Bed frame				

28. a) Complete the life cycle of a butterfly. (1m)

b) State one difference between the life cycles of a butterfly and a cockroach. (1m)

_____

_____

5

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29. The plant transport system carries food and water within the plant.

a) Fill in Food or Water in the appropriate boxes. (2m)

b) In the following cross section of a stem, shade the parts where the water carrying tubes are. (1m)

30. The diagram below shows part of the digestive system.

Joseph observed that his stools (what he passes out) is watery. Which part of the digestive system, A or B, is not functioning well?

a)_____ (1m)

b) Explain your answer in (a). (1m)

_____

5

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31. Kumar wanted to create his own fishing game. He made 4 similar fishes out of cardboard and attached 4 metal bars to the fishes.

When playing the game, Kumar made some observations as shown in the table.

Bar	Observation
A	Was not attracted to the magnet, fish could not be picked up
B	Was attracted to the magnet, fish was lifted but dropped with a slight touch
C	Was attracted to the magnet, fish was lifted and remained attached
D	Was not attracted to the magnet, fish could not be picked up

a) Based on his observations, Kumar cannot determine whether Bars B and C are magnets or magnetic metals. What is the best way to test whether the metal bars are magnets? (1m)

_____

_____

b) If Bars B and C are magnets, which one is stronger? (1m)

_____

c) If Bars B and C are **not** magnets, they can be made of materials such as

_____ and _____. (1m)

d) Bars A and D could be made of _____ and

_____. (1m)

4

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32. The diagram below shows the growth of a plant.

a) When a plant goes from Stage A to Stage B, what is the process called? (1m)

_____

b) At Stage C, what is the function of the leaves? (1m)

_____

c) At which stage does the plant become an adult plant? (1m)

_____

d) How do non-flowering plants like ferns reproduce? (1m)

_____

4

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33. May Lin conducted some experiments involving water and recorded her observations. Some of statements are true but some are false.

Write **'T'** (true) or **'F'** (false) in the boxes provided below. (3m)

	Statements	T or F
a)	The boiling point of water is 100°C.	
b)	At 0°C, water can exist both as a solid and a liquid.	
c)	When water is cooled to 0°C, it changes to ice.	
d)	When water is boiled and left to cool in a room with a temperature of 28°C, its final temperature can be 15°C.	
e)	Water vapour is water in its gaseous state.	
f)	When ice melts, it changes from the solid state to the liquid state.	

3

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34. Sarah took a container and poured some water into it. She put the container into the freezer and the water became ice. She then placed the container on a metal stand in a tilted manner as shown in the diagram.

a) After 30 minutes, the ice has melted. **Draw** in the water level in the tilted container. (1m)

b) What was the change of state that took place when the ice melted? (1m)

c) If the water in the container was left untouched for 3 days, would the water level increase, decrease or remain the same? Explain your answer. (1m)

_____

_____

3

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35. Peter conducted an experiment. He poured 300cm^3 of water into a 500cm^3 bottle. He then placed 5 marbles into the bottle as shown below.

a) Why did the water level rise? (1m)

_____

b) Samy conducted a similar experiment. He took the same 500cm^3 bottle and placed the 5 marbles into it. He then sealed the bottle with a rubber stopper and inserted a tube through the rubber stopper and pumped 800cm^3 of air into it.

i) After Step 2, what is the volume of air in the bottle if the volume of the 5 marbles is 100cm^3? (1m)

_____

ii) What does Samy's experiment tell you about air? (1m)

_____

END OF PAPER

3

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Exam Paper 2014 Answer Sheet

School: SINGAPORE CHINESE GIRLS' SCHOOL
Subject: PRIMARY 4 SCIENCE
Term: SA1

1)	1	6)	2	11)	4	16)	1	21)	2
2)	3	7)	3	12)	3	17)	4	22)	2
3)	2	8)	1	13)	2	18)	2	23)	4
4)	1	9)	2	14)	4	19)	4	24)	1
5)	2	10)	3	15)	2	20)	4	25)	3

26. (a) i. It does not have six legs.
    ii. It does not have three body parts.
    (b) It is a living thing which needs air, food and water to survive.

27. Leg: Strong; Mattress: Flexible; Bed frame: Strong

28. (a) Pupa
    (b) The butterfly has a four-stage life cycle while the cockroach has a three-stage life cycle.

29. (a) Downward arrow: Food; Upward arrow: Water
    (b)

30. (a) B
    (b) Part B removes water from the undigested food.

31. (a) See if they repel, if they repel, they are metal.
    (b) C
    (c) Cobalt and steel
    (d) Gold and silver

32. (a) Germination
    (b) Help the plant to make food.
    (c) D
    (d) They reproduce by spores.

33. (a) T; (b) T; (c) T; (d) F; (e) T; (f) T

34. (a)

    (b) Solid to liquid
    (c) It will decrease. Some of the water may have evaporated into the thin air.

35. (a) The marble had volume and took up space in the bottle.
    (b) i. $400cm^3$
    ii. Air has no definite volume and can be compressed.

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TAO NAN SCHOOL 道南学校

SINCERITY & PERSEVERANCE

PRIMARY 4 MID-YEAR EXAMINATION 2014

Name : _____ ( )

Class : Primary 4 ( )

Parent's Signature : _____

Date: 19 May 2014

Time: 8.00 a.m – 9.30 a.m.

Duration: 1h 30min

Marks: _____ / 60

SCIENCE
BOOKLET A

INSTRUCTIONS TO CANDIDATES

Write your name, register number and class.

Do not turn over this page until you are told to do so.

Follow all instructions carefully.

Answer all questions.

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Section A (30 x 2 marks)

For each question, choose the most suitable answer and shade its corresponding oval (1, 2, 3 or 4) on the optical answer sheet.

1. Study the classification chart below.

How are the animals above classified?

(1) The way they move.
(2) Their outer covering.
(3) How they reproduce.
(4) The number of legs they have.

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2. Study the flow chart below.

Based on the flow chart, what can A and B represent?

	A	B
(1)	Rose	Yeast
(2)	Mushroom	Bird's Nest Fern
(3)	Bird's Nest Fern	Mushroom
(4)	Yeast	Rose

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3. Mr. Tan carried out an experiment to find out how well a material could absorb water. He used 4 different materials labelled P, Q, R and S, which were of the same length and thickness.

Which material is most suitable for making a raincoat?

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

4. A padlock is made of metal because metal is _____.

(1) strong
(2) heavy
(3) flexible
(4) waterproof

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5. Diana had 4 paperclips labelled A, B, C and D which were made of different metals. She found that only paper clip D could **not** be attracted to a magnet. What metal could paper clip D be made of?

(1) Iron
(2) Steel
(3) Cobalt
(4) Copper

6. Chandra was given 3 objects labelled X, Y and Z, which were wrapped with black paper. He was told that the objects were a magnet, a magnetic object and a non-magnetic object.

He hung the objects on a bar using strings and placed them in different positions.

Based on the observation above, which is a possible conclusion?

	Magnet	Magnetic object	Non-magnetic object
(1)	X	Y	Z
(2)	X	Z	Y
(3)	Z	Y	X
(4)	Y	Z	X

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7. The diagram below shows 3 bar magnets that are attracted to one another. The poles of each magnet are represented by A, B, C, D, E and F.

Which of the following diagrams shows a possible arrangement of the magnets?

(1)

(2)

(3)

(4)

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8. Study the diagram of a plant below.

What is/are the function(s) of plant part **X**?

A: To hold the plant upright
B: To anchor the plant to the ground
C: To transport food and water to all parts of the plant

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

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9. Ahmad wants to find out whether the presence of light will affect the growth of a plant. He has 4 set-ups as shown below.

Set-up A	Set-up B
Well-lit room Plant is watered daily 	Dark room Plant is watered daily
Set-up C	**Set-up D**
Well-lit room Plant is watered daily 	Dark room Plant is watered daily

Which two set-ups should Ahmad choose to conduct his experiment?

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

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10. The bar graph below shows the amount of food digested at different parts, E, F, G and H of the human digestive system. Which part of the human digestive system most likely represents the mouth?

(1) E
(2) F
(3) G
(4) H

11. Why are we still able to see objects outside the window even though the glass window is closed?

(1) The glass reflects light.
(2) The glass allows light to pass through.
(3) The light from our eyes is reflected by the objects.
(4) The light from the objects are reflected by our eyes.

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12. The diagram below shows the path of light that enabled Alexander to see the ball while playing soccer at the field.

What could **P**, **Q** and **R** be?

	P	Q	R
(1)	Ball	Sun	Alexander
(2)	Alexander	Ball	Sun
(3)	Sun	Alexander	Ball
(4)	Alexander	Sun	Ball

13. Which one of the following is **not** a source of light?

(1) Sun
(2) Stars
(3) Firefly
(4) Moon

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14. Wei Ming can hear a dog barking in his neighbour's garden. He wants to look at the dog but is blocked by a wall. He made a device to help him see the dog. A, B, C, D, E and F are mirrors.

Which mirrors will enable him to see the dog?

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

15. Sam placed both his hands into two containers of water at the same time. His right hand that was placed into container A felt warm. His left hand that was placed into container B felt cold. What were the temperatures of the water in the containers?

	Temperature of the water in container A (°C)	Temperature of the water in container B (°C)
(1)	25	15
(2)	45	40
(3)	15	40
(4)	40	15

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16. Mrs Tay is going to build a display window for her shop. She wants her customers to be able to see clearly into her shop. The graph below shows the amount of light that can pass through each type of glass, A, B, C and D.

Which type of glass should Mrs Tay choose to build her window?

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

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17. Anita had three different materials, namely frosted glass, clear plastic and cardboard, of the same thickness. She shone a torch at each of the three materials and used a light sensor connected to a data logger to record the amount of light that passed through each material. She recorded her readings on a graph. Which one of the following graphs is the one recorded by Anita?

(1)

(2)

(3)

(4)

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18. Annabel has a plate made from frosted plastic and ceramic as shown below.

What is the possible shadow that will be formed when Annabel shines a torch at the plate?

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19. Two pieces of cardboard were placed in front of a light source as shown below.

The shadow formed on the screen is shown below.

One of the pieces of cardboard is a round shape. What could be the shape of the other piece of cardboard?

(1)

(2)

(3)

(4)

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20. Huimin drew the shadow of a pole in a field at 1 p.m. Which shadow did she draw at 1 p.m.?

21. Sharifah placed a metal spoon into a cup of cold water as shown below.

Which one of the following statements is true?

(1) The cup lost heat to the cold water.
(2) The cold water lost heat to the cup.
(3) The spoon gained coldness from the cup.
(4) The spoon gained coldness from the cold water.

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22. A metal ball was able to pass through a ring before it was heated. After heating the ball over a flame for 10 minutes, the ball could not pass through the ring.

Why was the ball unable to pass through the ring after it was heated?

(1) The ball had expanded.
(2) The ring had expanded.
(3) The ball had contracted.
(4) The ring had contracted.

23. The diagram below shows a pot that is used for cooking.

What would be the most suitable material to make part **X**?

(1) Iron
(2) Glass
(3) Plastic
(4) Styrofoam

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24. A beaker of water at room temperature was heated for 1 minute and then left to cool. Which of the following graphs below shows the change in the temperature of the water as it was heated and then left to cool?

(1)

(2)

(3)

(4)

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25. Raj had two cups of water as shown below.

Cup A
200ml
20 °C

Cup B
200ml
80 °C

He poured half the amount of water in cup A and all of the water in cup B into a large container. He then measured the volume and temperature of the water in the large container immediately.

What could be the readings that Raj obtained?

	Volume (ml)	Temperature (°C)
(1)	400	30
(2)	400	60
(3)	300	25
(4)	300	65

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26. Four different metal rods labelled P, Q, R and S were heated. The diagrams below show how the metal rods expanded when they were heated.

Which of the following show the expansion of the metal rods **P**, **Q**, **R** and **S**?

	Expands least →			Expands most
(1)	R	Q	P	S
(2)	Q	R	S	P
(3)	S	P	Q	R
(4)	R	P	Q	S

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27. Shawn wants to measure the temperature of water in a beaker. How should the thermometer be placed to give the most accurate reading?

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28. Siti has 4 set-ups as shown below.

From which set-up will the balloon inflate first?

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

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29. The diagram below shows 3 beakers, A, B and C, containing the same amount of water. The temperatures of the water in the beakers are shown below. The ends of a metal chain and a plastic chain are dipped into the water.

Which of the following most likely shows the temperatures of the water in the three beakers, **A**, **B** and **C**, after 5 minutes?

	Temperature of water in beaker A (°C)	Temperature of water in beaker B (°C)	Temperature of water in beaker C (°C)
(1)	40	70	70
(2)	50	40	60
(3)	30	60	65
(4)	45	60	55

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30. Celine conducted an experiment to find out how cups made of different materials affect the temperature of water in the cups. She heated the water in a cup made of material W for 20 minutes. She repeated the experiment using cups made of materials X, Y and Z, and recorded the change in the temperature of the water on a graph as shown below.

Which material is most suitable for making the handle of a frying pan?

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

End of Booklet A

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TAO NAN SCHOOL 道南学校

SINCERITY & PERSEVERANCE

PRIMARY 4 MID-YEAR EXAMINATION 2014

Name . _____ ( ) Date: 19 May 2014

Class : Primary 4 ( ) Time: 8.00 a.m – 9.30 a.m.

Duration: 1h 30min

Parent's Signature : _____ Marks: _____ / 40

SCIENCE
BOOKLET B

INSTRUCTIONS TO CANDIDATES

Write your name, register number and class.

Do not turn over this page until you are told to do so.

Follow all instructions carefully.

Answer all questions.

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Section B (40 marks)

Write your answers in the spaces provided.

31. Study Animal X and Animal Y below.

Animal X

Animal Y

a) State one similarity between Animal X and Animal Y. (Do not mention their colour and size.) (1m)

_____

_____

b) State one difference between Animal X and Animal Y. (Do not mention their colour and size.) (1m)

_____

_____

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32. John conducted an experiment using the two set-ups below.

a) What was the aim of his experiment? (1m)

_____

_____

b) After 30 minutes, John took a photograph of the set-ups as shown below.

What characteristic of living things was shown by the snails? (1m)

_____

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33. Study the flowchart below. A, B, C and D represent 4 different materials.

a) Describe the material, **B**. (1m)

_____

_____

b) State a similarity between the materials, **C** and **D**. (1m)

_____

_____

c) What is the material, **A**? (1m)

_____

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34. The diagram below shows the parts, A, B, C and D, of the human digestive system.

a) Identify the parts, B and E. (1m)

B: _____

E: _____

b) State the part (A, B, C, D or E) at which digestion of food ends. (1m)

_____

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35. A, B, C, D and E represent processes that take place in the digestive system.

A: Excess water is removed from the undigested food.

B: Partially digested food is passed through a long tube.

C: Food is ground into smaller pieces and mixed with saliva.

D: Digested food is absorbed into the bloodstream.

E: Food is mixed with digestive juices in a muscular organ.

Arrange the processes, **A**, **B**, **C**, **D** and **E**, in the correct order in the boxes below. (2m)

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36. Guo Hao conducted an experiment. He prepared Set-up X and Set-up Y as shown below.

a) Identify the changed variable. (1m)

_____

b) After 3 hours, Guo Hao measured the volume of water left in both pots and recorded it in the table below.

Set-up	Volume of water left in the pot (ml)
X	80
Y	100

What was the aim of his experiment? (1m)

_____

_____

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37. Muthu placed 3 different magnets, F, G and H, one at a time at a retort stand. 'd' is the maximum distance the steel clip could remain suspended in the air from the magnet. He recorded his findings in the table below.

Magnet	Maximum distance between the magnet and the steel clip, d (cm)
F	3
G	2
H	4

Muthu then placed the magnets 1 cm from some steel clips and recorded the number of clips that were attracted to each magnet in the table below.

a) Complete the table by writing F, G and H in the boxes provided. (1m)

Magnet	Number of steel clips attracted
	8
	5
	3

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b) What would Muthu observe if a sheet of paper was placed between the magnet and the steel clip? Explain your answer. (2m)

_____

_____

c) What would Muthu observe if the steel clip was replaced with an aluminium clip? (1m)

_____

_____

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38. Steven looked through a periscope and was able to see the object clearly.

a) In the periscope above, draw two mirrors and the path of light that enabled Steven to see the object. (2m)

b)

Can Steven see the object if he uses the tube above? Explain your answer. (2m)

_____

_____

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39. The experiment below is carried out in a dark room.

Card A, Card B, Card C and Card D are arranged in a straight line.
When the torch is switched on, a bright star is seen on Card C only.

Study the statements below. Put a tick (✓) in the appropriate box. (2m)

	Statement	True	False	Not possible to tell
(a)	Card A allows light to pass through.			
(b)	Card B allows light to pass through.			
(c)	Card C does not allow light to pass through.			
(d)	Card D does not allow light to pass through.			

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40. In a dark room, light was shone at an ice cream cone from the positions, W and X, as shown below.

(a) Draw the shadows cast on Screen A and Screen B in the boxes below. (2m)

Shadow on screen A	Shadow on screen B

b) The torch was moved down from position X. The length of the shadow that was cast on screen B was measured and recorded in the table below.

Distance of torch from cone (cm)	Length of the shadow (cm)
35	5
30	10
25	20

What is the relationship between the distance of the torch from the ice cream cone and the length of the shadow? (1m)

_____

_____

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c) What is the length of the shadow when the distance of the torch from the ice cream cone is 32 cm? (1m)

_____

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41. Study the set-up below.

(a) What should be done to flask Q to move the drop of ink towards flask P? Explain your answer. (2m)

_____

_____

(b) Mark an X on the glass tube below to show the position of the drop of ink when flask P is placed in cold water. (1m)

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42. Jean has three rods, A, B and C, which are made of different metals of equal thickness but different lengths. She attaches a ball of wax to one end of each rod and heated the other end over a flame.

She recorded the time taken for the ball of wax to drop off the rod.

Rod	Length of the rod (cm)	Time taken for the wax to drop (s)
A	30	60
B	20	45
C	50	120

Sumitha commented that the experiment was not a fair test.

a) What should Jean do so that the experiment will be a fair test? (1m)

_____

_____

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Jean conducted the experiment again after ensuring that the experiment was a fair test. She recorded her new findings in the table below.

Rod	Time taken for the wax to drop (s)
A	60
B	65
C	80

b) Which rod is the best conductor of heat? Explain your answer. (2m)

_____

_____

c) Without adding or removing items from the set-ups, what should Jean do so that the wax balls on the rod will take a shorter time to drop? (1m)

_____

d) If the length of the rods were increased, would the time taken for the balls of wax to drop increase or decrease? Explain why. (1m)

_____

_____

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43. The diagram below shows a thermometer.

a) What is the reading on the thermometer? (1m)

_____

b) What would happen to the liquid level in the thermometer when the thermometer is placed in a cup of hot tea? Explain your answer. (2m)

_____

_____

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44) Jimmy placed an ice cube into a cup and heated the cup over a flame. He recorded the time taken for the ice cube to melt completely. He repeated the experiment using identical ice cubes and cups of different thickness. Jimmy's results were recorded in the table below.

Thickness of the cup (mm)	Time taken for the ice cube to melt (s)
3	40
5	60
7	90
10	120

a) What is the relationship between the thickness of the cup and the time taken for the ice cube to melt? (1m)

_____

_____

b) What would be the time taken for the ice cube to melt when a cup of 8 mm thickness were to be used in the experiment? (1m)

_____

End of paper

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Q39 (a) False
(b) True
(c) True
(d) Not possible to tell

Q40 (a)

(b) As the distance of the torch from the ice cream cone decreases, the length of the shadow increases.
(c) 7cm

Q41 (a) Heat flask Q.
The air inside flask Q gains heat from the flame and expanded causing the drop of ink moving towards flask P.

(b)

Q42 (a) Make the length of the rod the same.
(b) Rod A.
The time taken for the wax on rod A to melt is the shortest, thus Rod A is the best conductor of heat.
(c) Move the flame nearer to the wax balls.
(d) Increase.
Heat from the candle flame has to travel a longer distance.

Q43 (a) 17°c
(b) It will increase.
The liquid gained heat from the hot tea and expanded.

Q44 (a) As the thickness of the cup increases, the time taken for the ice cube to melt increases.
(b) 115 seconds

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Paper 2

Q1 (a) $8 \div 4 = 2$
$2 \times 5 = 10$
Rani has \$10

(b) $10 + 2 = 12$
They have \$12 altogether.

Q2 (a) $36 \div 3 = 12$
Her son is 12 years old

(b) $48 + 4 = 52$
Their total age will be 52 years.

Q3 $78 \times 6 = 468$
They had 468 stamps altogether.

Q4 (a) $180 \div 12 = 15$
$15 \times 10 = 150$
She has 150 blue beads.

(b) $15 \times 3 = 45$
She should buy 45 more red beads.

Q5 $13 - 1 = 12$
$12 \times 3 = 36$
The distance from the first tree to the last tree is 36m.

Q6 $160 \div 10 = 16$
$16 \times 4 = 64$
One shirt and one tie is \$64.

Q7 $9 \times 9 = 81$
$81 \times 2 = 162$
$162 - 147 = 15$
The area of the shaded part is $15cm^2$.

Q8 $39 \times 4 = 156$
$156 - 122 = 34$
$4 - 2 = 2$
$34 \div 2 = 17$
There are 17 bicycles.

Q9 $6 \times 5 = 30$
She bought 30 tarts.

Q10 Huiling has 6 friends.

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EXAM PAPER 2014
LEVEL : PRIMARY 4
SCHOOL : TAO NAN SCHOOL
SUBJECT : ENGLISH
TERM : SA1

Q1	4	Q6	4	Q11	4
Q2	3	Q7	3	Q12	4
Q3	4	Q8	3	Q13	4
Q4	4	Q9	4	Q14	3
Q5	1	Q10	2	Q15	4

Q16 despised

Q17 TRUE

Q18 FALSE

Q19 2,1,3

Q20 wise

Q21 'They' refers to the moose's antlers.

Q22 His legs saved him from the hunting dogs.

Q23	C	Q25	A
Q24	F	Q26	E

Q27	believes	Q29	contribute
Q28	buy	Q30	is

Q31 Ali, who was my classmate in primary school, is now a famous national sailor.

Q32 John did not win the race even though he ran very fast.

Q33 Due to her laziness, Michelle did not do well for the mid-year examination.

Q34 Jane told her aunt that they had left the resort the previous day.

Q35 They wanted to have a better view of Queen Victoria's coronation procession.

Q36 It refers to the boy.

Q37 The writer ignored her and went near to the boy.

Q38 Old Sam, the supervisor at the match factory, got a belt out and whipped the boy that morning.

Q39 I want a better life for myself and find other work.

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EXAM PAPER 2014
LEVEL : PRIMARY 4
SCHOOL : TAO NAN SCHOOL
SUBJECT : SCIENCE
TERM : SA1

Q1	2	Q7	4	Q13	4	Q19	3	Q25	4
Q2	2	Q8	4	Q14	2	Q20	4	Q26	1
Q3	1	Q9	1	Q15	4	Q21	1	Q27	2
Q4	1	Q10	3	Q16	3	Q22	1	Q28	3
Q5	4	Q11	2	Q17	1	Q23	3	Q29	4
Q6	2	Q12	4	Q18	4	Q24	2	Q30	4

Q31 (a) Both have a body
(b) Animal Y has legs while animal X does not have legs.

Q32 (a) To find out if living things need air to survive.
(b) Living things respond to changes.

Q33 (a) B is a material, it is strong and it does not sink in water.
(b) Both are not strong
(c) Iron

Q34 (a) B: Gullet
E: Large intestine
(b) Part D

Q35 C – B – E – D – A

Q36 (a) The presence of roots
(b) To find out if the absence of roots affects the amount of water absorbed.

Q37 (a) H,F,G
(b) The steel clip would remain suspended in the air from the magnet.
The magnetic force of the magnet can pass through the paper.
(c) The aluminium clip will drop.

Q38 (a)

(b) No. Light travels in a straight line but the tube is bent.

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Q39 (a) False
(b) True
(c) True
(d) Not possible to tell

Q40 (a)

(b) As the distance of the torch from the ice cream cone decreases, the length of the shadow increases.
(c) 7cm

Q41 (a) Heat flask Q.
The air inside flask Q gains heat from the flame and expanded causing the drop of ink moving towards flask P.

(b)

Q42 (a) Make the length of the rod the same.
(b) Rod A.
The time taken for the wax on rod A to melt is the shortest, thus Rod A is the best conductor of heat.
(c) Move the flame nearer to the wax balls.
(d) Increase.
Heat from the candle flame has to travel a longer distance.

Q43 (a) 17°c
(b) It will increase.
The liquid gained heat from the hot tea and expanded.

Q44 (a) As the thickness of the cup increases, the time taken for the ice cube to melt increases.
(b) 115 seconds

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AI TONG SCHOOL
2014
END-OF-YEAR EXAMINATION
PRIMARY 4

SCIENCE

DURATION : 1hr 45 minutes

DATE: 27th October 2014

INSTRUCTIONS

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

Name : _____ ( )

Class : Primary _____

Parent's Signature : _____

Date : _____

Section A	
Section B	
Total	/ 100

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Section A: 60 marks

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

---

1. Study the diagram below.

What could Q be?

(1) bird
(2) insect
(3) mammal
(4) plant

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2. The diagram below shows the growth of a young plant with two missing stages **P** and **Q**.

Which one of the following shows the correct stages for **P** and **Q**?

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

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3. Which one of the following shows the correct order when food moves through some parts of the digestive system?

(1)

(2)

(3)

(4)

4. Which one of the following is **NOT** a source of heat?

(1) A candle flame
(2) A lighted bulb
(3) A woollen cap
(4) The Sun

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5. Which one of the following objects can be bent easily without breaking?

(1) A sheet of glass

(2) A plastic spoon

(3) A towel

(4) A wooden ruler

6. Which one of the following properties is true for both air and a pencil?

(1) They can be seen.
(2) They have fixed shapes.
(3) They have fixed volumes.
(4) They take up space.

7. Matter is anything that has mass and occupies space.

Which one of the following is **NOT** matter?

(1) Air
(2) Shadow
(3) Soil
(4) Water

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8. Look at the picture below.

Which of the following explains why Sue can see the book on the table?

(1)

(2)

(3)

(4)

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9. In the diagram, what is the volume of liquid Y?

(1) 50 ml
(2) 52 ml
(3) 62 ml
(4) 68 ml

10. In which one of the following will the two magnets push each other away?

(1)

(2)

(3)

(4)

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11. Which one of the following is likely to show signs of fungus growth after a few days?

(1)

dry wooden plank

(2)

clean, white paper

(3)

damp pieces of wood

(4)

wet, plastic table

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12. The diagram below shows a tank set up to keep Organism K. Sufficient amount of food and water is given to Organism K.

Lena decided to keep 7 Organism K in the tank. After a week she realised that the tank was too crowded with so many organisms living in it.

Which of the following observations would best support Lena's idea?

	Observation 1	Observation 2
(1)	The amount of food and water decreases.	Organisms playing with one another.
(2)	The tank becomes warmer.	Organisms feeding on the food and water.
(3)	Organisms feeding on the food and water.	Some organisms are running around while some are sleeping.
(4)	Organisms fight with one another.	Amount of food and water decreases a lot.

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13. The following set-ups were used to carry out an investigation.

Which of the following aim of experiment is **NOT** correctly matched to the pairs of set-ups?

	Set-ups	Aim of Experiment
(1)	A and D	To find out if seeds can germinate on cotton wool
(2)	B and D	To find out if temperature affects germination
(3)	B and C	To find out if light is needed for germination
(4)	A and C	To find out if seeds can germinate in a cool place

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14. The following table gives information about four animals, A, B, C and D based on two characteristics. A tick (√) shows that the animal has the characteristic.

Characteristics \ Animal	A	B	C	D
Lives in water		√	√	
Gives birth to young alive	√		√	

Based on the information given in the table above, where should Animal B and Animal D be placed (W, X, Y or Z) in the classification table below?

Which of the following correctly matches animals B and D to the animals in the classification table above?

	Animal B	Animal D
(1)	W	Z
(2)	X	W
(3)	Y	W
(4)	Z	X

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15. Ken ate a sandwich for lunch. The bar graph below shows the amount of sandwich digested at different parts X, Y and Z of his digestive system.

Which of the following shows the correct parts of the digestive system?

	Part X	Part Y
(1)	Stomach	Small intestine
(2)	Small intestine	Mouth
(3)	Mouth	Small intestine
(4)	Small intestine	Stomach

Study the diagram shown below and answer questions **16 and 17**.

16. In the diagram shown above, X refers to _____

(1) undigested food
(2) simpler substances
(3) smaller pieces of food
(4) simpler pieces of food

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17. Which of the following best describes P and Q?

	P	Q
(1)	Absorbs water	Absorbs nutrients
(2)	Shapes food into small balls	Pushes food down
(3)	Partly digests the food	Churns food with digestive juices
(4)	Churns food with digestive juices	Digests the food

18. Two hooks A and B made from different materials were secured to the ceiling.

Two boxes of the same mass were hung onto the hooks. The results were shown below.

From this experiment, we can conclude that _____.

(1) Hook A is lighter than Hook B
(2) Hook A is stronger than Hook B
(3) Hook A is more fragile than Hook B
(4) Hook A is more flexible than Hook B

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19. Four objects are classified into two groups as shown below.

Group A	Group B
keys	schoolbag
Glass cup	blouse

The objects are grouped according to _____.

(1) how hard they are
(2) what materials they are made of
(3) whether they conduct heat easily
(4) whether they allow light to pass through

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20. Keith placed equal drops of wax on the handles of Spoons A and B. The wax hardened and he placed the two spoons into beakers of water at 95 ^{0}C as shown below.

After 10 minutes, he noticed that the wax on Spoon A melted first.

Which one of the following is a possible reason why the wax on Spoon A melted first?

(1) The temperature of the water was higher.
(2) Spoon A expanded when heated by the hot water.
(3) Heat travelled quickly from Spoon A to the hot water.
(4) Spoon A conducted heat more quickly than Spoon B.

21. The diagram below shows hot water in a covered plastic container.

Which of the following correctly describes the temperature changes of the air in the plastic container and the hot water after 10 minutes?

	Temperature of	
	Air in plastic container	**Hot water**
(1)	Decrease	Increase
(2)	Decrease	No change
(3)	Increase	Decrease ✓
(4)	Increase	No change

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22. The diagram below shows some water in set-ups A, B, C and D.

Ali compared 2 set-ups.

Which of the following shows an **incorrect** comparison?

	Set-ups	**Comparison**
(1)	A and B	The water in set-up B has more heat energy.
(2)	A and C	The water in set-ups A and C have equal amount of heat energy.
(3)	C and D	The water in set-up C has less heat energy.
(4)	B and D	The water in set-up D has more heat energy.

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23. Shawn heated 4 materials, P, Q, R and S for 10 minutes. The graph below shows the increase in their temperatures after 10 minutes.

Based on the graph above, which material, P, Q, R or S, is the most suitable material to be made into part X and Y of the iron?

	Part X	Part Y
(1)	P	Q
(2)	Q	R
(3)	S	P
(4)	Q	S

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24. Harry carried out an investigation on a gas.

He placed some of the gas in a flask and sealed it. He drew the diagram below to represent the gas in the flask.

Harry then removed some of the gas from the flask.

Which of the following best represents the gas remaining in the flask?

(1)

(2)

(3)

(4)

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25. Which of the following statements about heat and temperature is true?

	Heat	Temperature
(1)	Heat is the measure of degree of hotness or coldness.	Temperature is a form of energy.
(2)	Heat can be measured using a thermometer.	Accurate temperature can be measured using sense of touch.
(3)	Heat is a form of energy.	Hot objects have higher temperature.
(4)	Heat is not a matter.	Temperature is a matter.

26. The table below shows three problems faced by three different people.

Description	Object used to solve the problem
Mr Tan wants to make doors for the changing rooms in his shop.	X
Baker Wong wants to display his cakes for sale. He wants his customers to be able to see his cakes clearly.	Y
Jane wants to block out the glaring sun while she is driving.	Z

What is the degree of transparency to light of objects X, Y and Z?

	X	Y	Z
(1)	Light cannot pass through the material	Only some light can pass through the material	Most light can pass through the material
(2)	Light cannot pass through the material	Most light can pass through the material	Only some light can pass through the material
(3)	Only some light can pass through the material	Most light can pass through the material	Light cannot pass through the material
(4)	Most light can pass through the material	Only some light can pass through the material.	Light cannot pass through the material

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27. Justin measured the length of a shadow formed by a tree at hourly intervals in his school field on a sunny day.

Which one of the following graphs would best represents the results that Justin had obtained?

(1)

(2)

(3)

(4)

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28. Minhui carried out an experiment to find out the strength of magnets labelled A, B, C and D, as shown in the diagram below.

She took each of the magnets and placed them 15 cm away from a pile of paper clips.

The table below shows the number of paper clips attracted by magnets A, B, C and D.

Magnet	Number of paper clips attracted
A	13
B	13
C	17
D	14

Which of the following statement(s) is/are most likely to be correct?

A Magnet C is the strongest magnet.
B Magnet D is the weakest magnet.
C Magnet A is as strong as magnet B.
D Magnet B is stronger than magnet D.

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

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29. Regan used the set-up below to find out if the number of batteries used affects the strength of the electromagnet.

What can Regan conclude from the results of his experiment?

(1) The electromagnet is a strong magnet.
(2) The type of batteries used will affect the strength of the electromagnet.
(3) The pins become magnetized when they were attracted to the electromagnet.
(4) The number of pins attracted increases with the number of batteries used.

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30. Four magnets W, X, Y and Z were hung at the same height. The magnets attracted some pins as shown in the diagram below.

Which of the following would be possible observations if magnet W was replaced with magnet A that can attract 8 pins when hung from the same height as the rest?

	Observation 1	Observation 2
(1)	Magnet X would swing away from Magnet A	Magnet A would attract the least pins
(2)	Magnet X swing towards to Magnet A	Magnet A would attract the most pins
(3)	Magnet X and Y would be attracted to each other	Magnet Z would be attracted to Magnet Y
(4)	All the pins would be attracted to only Magnet A	Magnets Z would attract the least pins

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Name: _____ ( ) _____/40

Class: 4 _____

Section B: 40 marks

Read the questions carefully and write down your answers in the spaces provided.

31.

a) The caterpillar needs food, water and _____ to stay alive. [1]

b) The caterpillar eats leaves and becomes longer after some time. This shows that it can _____ [1]

2

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32. The diagram below shows the stages in the life cycle of a butterfly.

Choose the correct words from the box to answer the question below.

caterpillar	egg	pupa	seed

Name the two stages **P** and **Q**. [2]

P : _____

Q : _____

2

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33. The diagram below shows a car.

a) Part **X** is made of glass because it allows _____ [1]
to pass through so that the driver can see the road.

b) Part **Y** is made of _____ because **Y** has to be strong. [1]

34.

Susan places a magnet near an iron rod. The iron rod moves towards the magnet.

a) The magnet exerts a _____ on the iron rod. [1]

Choose the correct word from the box to answer the question below.

hard	magnetic	strong

Susan's observation shows that iron is a _____ material. [1]

4

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35. Leena shines a torch on a ball and a shadow is formed on a smooth wall.

a) A shadow is formed when light is _____ by an object. [1]

b) Draw the shadow of the ball that is formed on the wall. [1]

2

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36. Two boys found Organisms P and Q in the garden.

Organism P

Organism Q

By examining the physical differences of the two organisms, the boys concluded that Organism Q is an insect but not P.

Compare Organisms P and Q and write down the two physical differences that the boys had observed which made them arrive at that conclusion. [2]

Difference 1: _____

_____

Difference 2: _____

_____

2

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37. The diagram below shows a tree with a thick canopy. This means that the tree has many leaves and branches and forms a thick crown on the tree.

Kate placed a light sensor and a measuring cylinder at positions A and B respectively.

The table below shows the average amount of light detected and the average amount of rainfall collected at Positions A and B in a day.

Position	Average amount of light detected / units	Average amount of rainfall collected / ml
A	2	10
B	85	300

a) Why was there less light detected at Position A? [1]

Kate wants to grow a potted plant as shown below.

b) Which position, A or B, would be a more suitable place to grow the potted plant? Explain your choice. [2]

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38. Tom prepared three similar Containers A, B and C that looked like the one shown below.

Same amount of water was poured into all the containers. They were then left under different conditions for 2 days and observed if the seeds germinated.

Table 1 below shows the different conditions that Containers A, B and C were placed in.

Table 1		Container A	Container B	Container C
Conditions	Temperature of the surrounding / °C	20	50	30
	Was there light?	Yes	Yes	Yes

Table 2 shows the observations recorded 2 days later.

Table 2		Container A	Container B	Container C
Observations	Dampness of soil after 2 days	Very Damp	Dry	Damp
	Did the seeds germinated after 2 days?	Yes	No	Yes

a) Based on the table above, what is the relationship between the temperature of the surrounding and the dampness of the soil after 2 days? [1]

_____

_____

b) Based on the table above, give 2 reasons why the seeds in container B did not germinate? [2]

_____

_____

_____

3

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39. Tim wanted to find out if the amount of digestive juice affects the rate of digestion of starch. He prepared 4 similar test-tubes containing different amounts of digestive juices and starch.

	Test-tube A	Test-tube B	Test-tube C	Test-tube D
Amount of starch solution/ ml	20	10	20	20
Amount of digestive juice / ml	20	20	10	5

a) Which 2 test-tubes should Tim use for his experiment? Explain your choice. [2]

_____

_____

_____

b) The more the digestive juice added to the solution, the faster the rate of digestion. In the space below, draw a line graph to show this relationship. [2]

4

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40. Similar cups A and B are used to conduct two experiments.

Experiment 1

a) Which cup, A or B would need less amount of orange juice to completely fill up the cup? Explain your answer. [2]

_____

_____

_____

Experiment 2

When cup B was placed into cup A, the two cups could not be separated.

b) State 2 actions that can be done to separate the two cups. [2]

Action 1: _____

_____

Action 2: _____

_____

4

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41. Study the set-up below. Samuel wanted to find out what would happen to the ink drop when the empty flask was heated for a few minutes.

a) When the flask was heated, will the ink drop move right, left or remain in the same position? [1]

_____

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

_____

_____

b) How would the result in part (a) be different if she repeated the experiment using 2 bunsen burners? [1]

_____

4

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42. Mary used a horse shoe magnet to carry out an investigation. She labelled Postions A, B and C on the magnet as shown below.

She dipped the magnet into a container of iron nails and counted the number of nails attracted to Positions A, B and C of the magnet.
She recorded the results in the table below.

Position	Number of iron nails attracted
A	6
B	1
C	6

a) What can Mary conclude about the strength of the magnet at Positions A, B and C? [1]

_____

b) What should Mary do to find out which Position A, B or C is the north-pole of the horse shoe magnet? Mary is given another bar magnet. [2]

_____

_____

_____

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43. Jane carried out an experiment as shown below

The light sensor records the amount of light passing through Cloth A. She repeated the experiment using Cloths B, C and D

Types of Cloth	Amount of light recorded / Units
A	10
B	50
C	24
D	15

a) What was the aim of the experiment? [1]

_____

_____

b) Arrange the degree of transparency to light of Cloths A, B, C and D. [1]

Jane wanted to use the above cloths to make curtains for her bedroom. She prefers to keep her room dark.

c) Which cloth, A, B, C or D should she choose? Explain your answer. [2]

_____

_____

_____

4

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44. Diagram 1 shows a bar magnet that had its poles dipped into a container of iron filings.

Diagram 1

Diagram 2

Diagram 2 shows the same magnet being heated at the centre.

After being heated for some time, 2 observations were made. Give possible explanations for the 2 observations made.

a) Observation 1: The two ends of the bar magnet became hot. [1]

_____

_____

b) Observation 2: Some iron fillings found at the two ends of the magnet dropped. [2]

_____

_____

END OF PAPER

3

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EXAM PAPERS 2014

SCHOOL: AI TONG SCHOOL
SUBJECT: SCIENCE
LEVEL: PRIMARY 4
TERM: SA 2

BOOKLET A

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
1	3	4	3	3	4	2	3	2	2
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
3	4	1	2	2	2	4	2	1	4
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
3	2	4	2	3	2	4	3	4	2

BOOKLET B

Q31 a) air b) grow
Q32 P: egg. Q: pupa
Q33 a) light b) metal
Q34 a) pulling force, magnetic
Q35 a) blocked b)

Q36 Difference 1: Organism Q has 6 legs but P has 8 legs.
Difference 2: Organism Q has three segmented body parts but P has two segmented body parts.
Q37 a) The canopy blocked some light.
b) Position B. It received more light and water which is needed by the plant to grow plant.
Q38 a)As the temperature of the surrounding increases, the dampness of the soil decreases.
b) There was not enough water for it to germinate. It wa too hot for the seed to germinate.
Q39 a) A and C
The correct variable was changed and it was the amount of digestive juice.
b)

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39b)

Q40 a) Cup A. The ice cubes occupies space in the cup leaving less space for the orange juice.
b) Put ice in cup B. Place cup A in hot water.

Q41 a) The ink drop moved right.
b) The air gained heat from the burner and expand and pushed the ink drop to the right.
c) It will move to the right faster.

Q42 a) Poles at A and C are stronger than B.
b) Bring the north-pole of the bar magnet close to Position A, B and C. The position that repels the bar magnet is the north pole.

Q43 a) To find out if the type of cloth affects the amount of light pass through it.
b) B, C, D, A
c) Cloth A. The amount of light detected by the light senor was the least when cloth A was used. Thus, cloth A blocked the most light from outside the bedroom.

Q44 a) Heat travelled from the heat source to the cooler ends.
b) Heat causes the magnet to lose some of the magnetism hence it attracts less iron fillings.

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Anglo-Chinese School (Primary)

END-OF-YEAR EXAMINATION 2014
SCIENCE
PRIMARY FOUR
BOOKLET A

Name: _____ ( ) **Class: Primary 4** ___

Date: 30 October 2014 **Duration of paper: 1 h 45 min**

_____
Parent's/Guardian's signature

INSTRUCTION TO CANDIDATES

1. This question paper consists of 22 printed pages including this cover page.
2. Do not turn this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Shade your answer on the Optical Answaer Sheer (OAS) provided.

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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. [60 marks]

1 Which one of the following shows the correct order when food moves through some parts of the digestive system?

(1)

(2)

(3)

(4)

(Go on to the next page)

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2 In which one of the following set-ups will the two magnets push each other away?

(1)

(2)

(3)

(4)

3 Which one of the following substances has a fixed shape?

(1) Air

(2) Oil

(3) Stone

(4) Water

(Go on to the next page)

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4 A snail hides itself in its shell when touched.

Which one of the following statements best explains the above about living things?

(1) The snail is a living thing because it can grow.

(2) The snail is a living thing because it can breathe.

(3) The snail is a living thing because it can respond.

(4) The snail is a living thing because it can reproduce.

5 The diagram below shows a young plant.

How does the leaf help the plant?

(1) The leaf helps the plant to absorb nutrients.

(2) The leaf helps the plant to absorb water.

(3) The leaf helps the plant to grow upright.

(4) The leaf helps the plant to make food.

(Go on to the next page)

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6 Study the classification table below.

Group A	Group B

Which one of the following pairs of leaves is correctly placed in group A and B?

	Group A	Group B
(1)		
(2)		
(3)		
(4)		

(Go on to the next page)

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7 Kenneth lowered an empty glass with a small plastic ball into a container of water as shown below. He observed that the level of water inside the glass was lower than the level of water outside the glass.

Which one of the following explanations best describes the difference in the levels of water inside and outside the glass?

(1) The plastic ball in the glass occupied space.

(2) The air trapped in the glass occupied space.

(3) The plastic ball absorbed the water in the glass.

(4) The plastic ball pushed the water out of the glass.

(Go on to the next page)

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Use the diagram below to answer questions 8 and 9.

The ring and the ball shown above were made of the same material.

8 At room temperature, the ball was unable to pass through the ring. After heating the ring for a while, the ball passed through the ring easily.

Which one of the following explains this observation?

	The ring	The ball
(1)	expanded	contracted
(2)	expanded	remained the same size
(3)	remained the same size	contracted
(4)	remained the same size	remained the same size

9 Based on the observation in Question 8, what material could the ball and ring possibly be made of?

(1) Steel

(2) Glass

(3) Plastic

(4) Rubber

(Go on to the next page)

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10 The diagram below shows a metal bridge with gaps at its end.

Why are the gaps necessary?

A The gaps enable the metal bridge to slide sideways.

B The gaps allow rainwater to flow into the river during a storm.

C The gaps enable the metal bridge to expand on a hot day so it will not buckle.

(1) A only

(2) B only

(3) B and C only

(4) A, B and C

11 A fully inflated ball was being further pumped with air. The table below shows the volume of the ball after each successive pump.

Number of pump(s)	Volume of ball (cm^3)
1	200
2	200
3	200

What property of air is illustrated in the experiment above?

(1) Air has mass.

(2) Air occupies space.

(3) Air can be compressed.

(4) Air has no definite shape.

(Go on to the next page)

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12 Which one of the following objects is **not** a source of heat?

(1) The Sun

(2) A lit bulb

(3) A pair of sunglasses

(4) A piece of burning charcoal

13 Michelle set up an experiment to find out which liquid, A or B, expands more when heated.

Which one of the following variables did Michelle change?

(1) The type of liquid

(2) The amount of heat

(3) The size of the glass tubes

(4) The temperature of the liquids at the start of the experiment

(Go on to the next page)

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14 Fahim wanted to cook a pot of curry.

Which one of the following statements best explains why he used a wooden spoon instead of a metal spoon to stir the curry?

(1) Wood is a better conductor of heat than metal. Therefore, it will not burn Fahim's hand.

(2) Wood is a poorer conductor of heat than metal. Therefore, it will not burn Fahim's hand.

(3) Wood is a better conductor of heat than metal. Therefore, the curry will be cooked faster.

(4) Wood is a poorer conductor of heat than metal. Therefore, the curry will be cooked faster.

(Go on to the next page)

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15 Kelly wanted to find out if the amount of water affects the rate at which water loses heat to the surroundings. She has four similar-sized containers, P, Q, R and S. The table below shows the material of each container, the amount of water and the temperature of the water in each container at the start of the experiment.

Container	Material of the container	Amount of water in container (ml)	Temperature of water in container at the start of the experiment (°C)
P	Rubber	100	80
Q	Steel	150	70
R	Steel	100	70
S	Rubber	100	80

Which two containers should she use for the experiment to ensure a fair test?

(1) P and R

(2) P and S

(3) Q and R

(4) R and S

(Go on to the next page)

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Refer to the information below to answer Questions 16 and 17.

Mason took out some crushed ice from the freezer and left it in a beaker in the living room, as shown in the diagram below.

The temperature of the set-up was taken every five minutes and recorded in the table below.

Time (min)	Temperature measured (°C)
0	0
5	0
10	6
15	18
20	24
25	24
30	24

16 Based on the above diagram, what is the measuring instrument used in the above experiment?

(1) Test tube

(2) Datalogger

(3) Heat sensor

(4) Thermometer

17 Based on the results in the table above, what is most likely the surrounding temperature of the living room?

(1) 6°C

(2) 18°C

(3) 24°C

(4) 30°C

(Go on to the next page)

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18 The diagram below shows a drop of black ink placed in a glass tube which was connected to two flasks, X and Y. Each flask was placed in a basin of water of unknown temperature.

After four minutes, it was observed that the drop of black ink moved towards flask X.

Which one of the following shows the likely temperature of water in each of the basin?

	Flask X is placed in a basin of	Flask Y is placed in a basin of
(1)	water at 80 °C	water at 30 °C
(2)	water at 10 °C	water at 80 °C
(3)	water at 60 °C	water at 60 °C
(4)	water at 30 °C	water at 10 °C

(Go on to the next page)

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19 Jason filled three glass containers with water as shown in the diagram below.

Which one of the following correctly compares the amount of heat in containers P, Q and R?

(1) The water in containers P and Q has the same amount of heat.

(2) The water in containers Q and R has the same amount of heat.

(3) The water in container P has less heat than the water in container Q.

(4) The water in container P has more heat than the water in container Q.

(Go on to the next page)

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20 Isabel poured equal amounts of hot water into four identical cups. The material used to make each cup was different.

After ten minutes, the temperature of the water in each cup was measured and recorded as shown in the table below.

Material of cup	Temperature of water at the start (°C)	Temperature of water after 10 minutes (°C)
A	90	62
B	90	69
C	90	65
D	90	88

Based on the results in the above table, which one of the following conclusions is **correct?**

(1) Material D is the best conductor of heat.

(2) Material B is a better conductor of heat than Material C.

(3) Material A is a poorer conductor of heat than Material B.

(4) Material D is a poorer conductor of heat than Material C.

(Go on to the next page)

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21 Joe walked in a straight line from A to C as shown in the diagram below. At B, he was directly under the lamp. The distance between A and B is the same as the distance between B and C.

The line graph below shows how the length of Joe's shadow changed during his walk.

Based on the above, which one of the following statements is correct?

(1) Joe took six seconds to walk from A to C.

(2) When Joe was directly under the lamp, his shadow was 15 m.

(3) As Joe walked towards the lamp from A to B, his shadow became longer.

(4) As Joe walked away from the lamp from B to C, his shadow became longer.

(Go on to the next page)

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22 Study the diagram below. The girl is able to see the plant in the presence of light from the lamp.

Which one of the following shows correctly the path of light that makes it possible for the girl to see the plant?

(1) From lamp to girl to plant

(2) From lamp to plant to girl

(3) From girl to plant to lamp

(4) From girl to lamp to plant

(Go on to the next page)

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23 Which one of the following is **not** a source of light?

(1) Torch	(2) Candle
(3) Television	(4) Moon

(Go on to the next page)

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24 Shawn attached a light sensor to a datalogger and used it to find out the amount of light passing through four sheets of different materials, P, Q, R and S. He recorded the results as shown below.

Sheet	Amount of light that passed through (Lux)
P	374
Q	1000
R	0
S	550

A material is made of clear glass will allow more than 800 Lux of light to pass. Which one of the following materials is most suitable to be used to make a fish tank?

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

25 A ball was placed in the middle of a metal box as shown in the diagram below

Which boy can view the ball?

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

(Go on to the next page)

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26 The diagram below shows the life cycle of an animal.

Which one of the following is likely to have the life cycle as shown above?

(1) duck

(2) butterfly

(3) cockroach

(4) grasshopper

27 The diagram below shows the life cycles of Animal X and Y.

Based on the life cycles above, which one of the following statements is correct?

(1) Both Animal X and Y do not lay eggs.

(2) Both Animal X and Y have the same diet.

(3) Both Animal X and Y undergo a three-stage life cycle.

(4) Both Animal X and Y have young that resembles the adult.

(Go on to the next page)

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28 Four students, Ali, Bala, Caiyun and Dave were discussing about life cycles and made the following statements.

A A life cycle does not repeat itself.

B A life cycle is made up of different stages.

C Different life cycles may differ in their length of time.

D A life cycle is important because it ensures continuity of a species.

Which statements are correct?

(1) A, B and C only

(2) A, B and D only

(3) B, C and D only

(4) A, B, C and D

29 In the diagram below, what is the volume of liquid X?

(1) 50 ml

(2) 52 ml

(3) 62 ml

(4) 68 ml

(Go on to the next page)

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30 The diagram below shows the growth of a young plant with two missing stages, **A** and **B**.

Which one of the following shows the correct stages for **A** and **B**?

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

END OF BOOKLET A

Please go on to Booklet B

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Anglo-Chinese School (Primary)

END-OF-YEAR EXAMINATION 2014
SCIENCE
PRIMARY FOUR
BOOKLET B

Name: _____ ( ) **Class: Primary 4** ___

Date: 30 October 2014 **Duration of paper: 1 h 45 min**

_____
Parent's/Guardian's signature

INSTRUCTIONS TO CANDIDATES

1. This question paper consists of **12** printed pages including this cover page.
2. Do not turn over this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Write all your answers in this booklet..

Booklet	Maximum marks	Marks obtained
A	60	
B	40	
Total	100	

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For questions 31 to 44, write your answers in the spaces provided in this booklet.

The number of marks available is shown in the brackets [ ] at the end of each question or part question. (40 marks)

---

31 Draw lines to match the following animals to the correct groups. [2]

Animals	Groups
	mammal
	insect
	fish
	bird

32 Classify the following into matter and non-matter. [3]

Air	Sand	Shadow

Matter	Non-matter

(Go on to the next page)

Score	/ 5

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33 Martin grew three similar beans in three pots, A, B and C. He gave the beans different amounts of water and minerals. After four weeks, he recorded the growth of the bean plants.

His results are shown in the table below.

	Pot A	Pot B	Pot C
Minerals	4 g	6 g	6 g
Water	80 ml	50 ml	80 ml
Height of plant	25 cm	30 cm	37 cm
Number of leaves	10	13	18

What can he conclude from the experiment above? [2]

34 Three pieces of materials were suspended from a line with clothes pegs as shown in the diagram below. They were made to hang down with their ends touching some coloured water in a tray.

(a) Absorbency is the ability of a material to absorb liquid.
Arrange the materials, X, Y and Z, in ascending order of their absorbency. [2]

Least absorbent → Most absorbent

(b) Which material would be the most suitable to be made into a swimsuit? [1]

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

(Go on to the next page)

Score	/ 6

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35 James moulded a piece of clay into a sphere. He then measured its mass and volume. Using the same piece of clay, he then went on to reshape it into a cube and lastly into a cylinder. Each time, he also measured their mass and volume.

(a) What was James trying to find out from this activity? [1]

(b) What will be the mass and volume of the cube and cylinder given that the mass of the sphere is 65 g and its volume is 25 cm^3? Complete the table below. [2]

Shape of clay	Mass (g)	Volume (cm^3)
Sphere	65	25
Cube	(i)	(ii)
Cylinder	(iii)	(iv)

(Go on to the next page)

Score	/ 3

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36 Two identical beakers were filled to the brim with water and marbles respectively, as shown in the diagram below.

(a) Looking at the water and marbles in the beakers, what can you tell us about the shape of water and the marbles? [1]

(b) When the beaker of marbles was poured into the beaker of water, the water overflowed. When the beaker of water was poured into the beaker of marbles, the water also overflowed.

What property of matter is observed from the above experiment? [1]

37 Arthur took out a jam jar from the refrigerator. He was unable to open the jar so he placed the jam jar in a basin of warm water as shown in the diagram below.

(a) After ten minutes, Arthur removed the jam jar from the basin of warm water and tried to unscrew the metal lid. The lid came off easily. Explain why. [1]

(b) Explain how Arthur can now make use of a basin of iced water instead of warm water to unscrew the metal lid of the jam jar. [2]

(Go on to the next page)

Score	/ 5

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38 (a) Read each statement carefully. Put a tick (✔) in the appropriate boxes to indicate if each statement is true or false. [2]

	Statement	True	False
(i)	Heat is a form of energy.		
(ii)	Heat is the same as temperature.		
(iii)	Heat travels from a place of higher temperature to a place of lower temperature.		
(iv)	Heat loss will result in an increase in the temperature.		

(b) The measuring instrument as show in the diagram below can be used to find the temperature of water in a beaker.

Arrange the following steps in order by indicating 1, 2, 3 and 4 in the blanks below, to describe the correct procedure to find the temperature of water in a beaker. [2]

(i) Place the measuring instrument in the beaker of water such that the tip does not touch the bottom of the beaker. _____

(ii) Hold the measuring instrument upright by its tip. _____

(iii) Observe the level of the liquid in the measuring instrument. _____

(iv) Read the marking nearest to the level of the liquid in the measuring instrument. _____

(Go on to the next page)

Score	/ 4

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39 Susie carried out an experiment to find out how long heat takes to travel along rods made of different materials, as shown in the diagram below.

In her table of results below, complete the headings. [2]

(a) _____	(b) _____
copper	21 sec
glass	147 sec
steel	35 sec

(c) Arrange the materials, copper, glass and steel, in ascending order based on their ability to conduct heat [1]

Poorest conductor of heat → Best conductor of heat

(Go on to the next page)

Score	/ 3

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40 Amy classified ~~six living~~ four living things according to the characteristics of their life cycles. The living things were classified into two groups as shown in the diagram below.

(a) Based ~~o~~ on the classification table above, complete the table below with suitable headings for Group 1 and Group 2. [2]

(i)	Group 1	
(ii)	Group 2	

(b) Put a tick (✓) below to indicate which living thing(s) can be classified under Group 1. [1]

Crocodile	
Butterfly	
Dragonfly	

(Go on to the next page)

Score	/ 3

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41 Dave set up an experiment as shown in the diagram below. He placed some green beans into a glass beaker filled with moist cotton wool. Dave left the set-up in a room at room temperature.

He observed the green beans for a week and realised that the green beans had germinated.

(a) What conditions are needed for the seed to germinate? [2]

(b) Dave also wanted to find out if the amount of fertilizer affects the germination of the seed.

The table below shows the variables for his experiment. Put a tick (✓) in the appropriate boxes to identify the variables that need to be kept the same or changed in order for Dave to carry out a fair test. [1]

Variable	Keep the same	Changed variable
Number of seeds		
Amount of water added to each beaker		
Amount of fertilizer added to each beaker		
Temperature of the room		

(Go on to the next page)

Score	/ 3

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42 Mary shone a torch on a ball and a shadow was formed on a smooth wall.

(a) A shadow is formed when light is _____ by an object. [1]

(b) Using a pencil, draw the shadow of the ball that is formed on the wall in the box below. [1]

(c) How can Mary cast a smaller shadow by moving only the ball? [1]

_____

_____

(d) How can Mary cast a smaller shadow by moving only the torch? [1]

_____

_____

(Go on to the next page)

Score	/ 4

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43 Tom set up an experiment in a dark room as shown below. He placed four sheets of materials, A, B, C and D as shown in the diagram below. He then placed a ball on top of a wooden block between material A and B. Tom switched on the torch and a clear dark shadow was cast on material C.

Based on the above observation, Tom drew the following conclusions. Put a tick (✓) in the appropriate box to indicate if each conclusion is 'True', 'False', or 'Not possible to tell'. [2]

	Conclusions	True	False	Not possible to tell
(a)	Material A allows light to pass through.			
(b)	Material B allows light to pass through.			
(c)	Material C allows light to pass through.			
(d)	Material D allows light to pass through.			

(Go on to the next page)

Score	/ 2

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44 Study the flowchart below:

Based on the above flowchart,

(a) State one similarity between object B and object C. [1]

_____

(b) State one difference between object B and object C. [1]

_____

_____

END OF BOOKLET B

Please check all your answers carefully

Score	/ 2

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Year: 2014

Level: Primary 4

School: Anglo-Chinese School

Subject: Science SA2

Booklet A:

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
3	3	3	3	4	4	2	2	1	3
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
3	3	1	2	3	4	3	2	4	4
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
4	2	4	2	3	2	3	3	2	3

Booklet B:

Q31

Animals ----- Groups

Horse -------mammal

Eagle ------bird

Goldfish-----fish

Q32)

Matter	Non-matter
Sand Air	Shadow

Q33) Plants grow best with more water and more minerals.

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Q34) a)

X	Z	Y

Least absorbent ----------> Most absorbent

b) X

c) I chose mineral X as it absorbs the least amount of water so that the swimming suit won't get wet so easily.

Q35) a) James is trying to find out if the mass and volume of the clay will change when the shape is changed.

b)

Shape of clay	Mass (g)	Volume (cm^3)
Sphere	65	25
Cube	65	25
Cylinder	65	25

Q36) a) Water does not have a definite shape while marbles have a definite shape.

b) Water and marbles takes up space.

Q37) a) The metal gained heat from the warm water and expanded.

b) Place the jar upright in a basin of iced water covering only the glass body. Arthur will be able to unscrew the material as the jar body will lose heat to the ice water and contract.

Q38) a)

	Statement	True	False
(i)	Heat is a form of energy.	✓	
(ii)	Heat is the same as temperature.		✓
(iii)	Heat travels from a place of higher temperature to a place of lower temperature.	✓	
(iv)	Heat loss will result in an increase in the temperaure		✓

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b) (i) 2

(ii) 1

(iii) 3

(iv) 4

Q39) a) material used

b) time taken for the paper clip to fall

c)

Glass	Steel	Copper

Poorest conductor of heat ----------->Best conductor of heat

Q40) a) (i) 4 staged of life cycle

(ii) 3 stages of life cycle

b)

Crocodile	
Butterfly	✓
Dragonfly	

Q41) a) Air, water, warmth

b)

Variable	Keep the same	Changed variable
Number of seeds	✓	
Amount of water added to each beaker	✓	
Amount of fertilizer added to each beaker		✓
Temperature of the room	✓	

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Q42) a) Blocked

b)

c) Move he ball further away from the torch.

d) Move the torch away from the ball.

Q43)

	Conclusion	True	False	Not possible to tell
(a)	Material A allows light to pass through	✓		
(b)	Material B allows light to pass through	✓		
(c)	Material C allows light to pass through		✓	
(d)	Material D allows light to pass through			✓

Q44) a) B and C do not give off light.

b) Light can pass through C but light cannot pass through B.

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CATHOLIC HIGH SCHOOL
SEMESTRAL ASSESSMENT 2
2014
PRIMARY FOUR

SCIENCE

BOOKLET A

Name: _____

Class: Primary 4 _____

Date: 29 October 2014

30 questions

60 marks

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

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.
Follow all instructions carefully.
Answer all questions.
Shade your answers in the Optical Answer Sheet (OAS) provided.

This booklet consists of 16 printed pages, excluding cover page.

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Booklet A **(30 × 2 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 your answer on the Optical Answer Sheet. (60 marks)

1 Xiao Li saw a mimosa plant in the school's eco-garden and touched its leaves.

Before Xiao Li touched it

After Xiao Li touched it

This shows that the mimosa plant is a living thing because it can

_____.

(1) grow

(2) breathe

(3) respond

(4) reproduce

2 The chart below shows how some living things can be grouped.

Which one of the following is the most suitable heading for group X?

(1) fish

(2) fungi

(3) insects

(4) bacteria

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3 Which one of the following shows the correct order when food moves through some parts of the digestive system?

(1)

(2)

(3)

(4)

4 The diagram below shows the life cycle of an animal.

Which animal is likely to have the life cycle as shown above?

(1) frog
(2) beetle
(3) butterfly
(4) cockroach

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5 Which one of the following is the function of a stem of a plant?

(1) makes food

(2) takes in water

(3) takes in mineral salts

(4) holds the plant upright

6 Which one of the following objects can be bent easily without breaking?

(1) plastic fork

(2) handkerchief

(3) pencil

(4) mirror

7 An object A was attracted to a magnet, as shown in the diagram below.

Object A is made of _____.

(1) steel

(2) wood

(3) plastic

(4) rubber

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8 Which one of the following is a source of light?

(1) an apple

(2) the moon

(3) camp fire

(4) a flower

9 Jean places a metal spoon in a cup of hot tea.

The spoon becomes hotter after a while.

Which one of the following explains this?

(1) The cup loses heat to the hot tea.
(2) The spoon loses heat to the hot tea.
(3) The hot tea gains heat from the spoon.
(4) The spoon gains heat from the hot tea.

10 Matter is anything that has mass and occupies space.

Which one of the following is **NOT** matter?

(1) air
(2) heat
(3) rice
(4) water

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11 The diagram below shows a potted plant that was placed in a black box with a small hole for two weeks.

In which direction, A, B, C or D, will the plant grow towards?

(1) A

(2) B

(3) C

(4) D

12 Peter sets up an experiment to find out if the size of the glass jar affects the growth of the plants as shown below.

To ensure a fair test, only one variable is changed. Which one of the following variables must Peter change?

(1) type of plant

(2) amount of water

(3) amount of sunlight

(4) size of the glass jar

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13 Sally classified the characteristics of four animals with the help of the chart below.

Which one of the following correctly represents A, B and C?

	Question A	Question B	Question C
(1)	Does it swim?	Does it give birth to the young alive?	Does it live on land?
(2)	Does it lay eggs?	Does its young live in water?	Does it have wings?
(3)	Does it have hair?	Does it swim?	Does it live in water?
(4)	Does it live on land?	Does it lay eggs?	Does it have feathers?

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14 Four children made some statements about micro-organisms.

Abdul Micro-organisms are living things.

Beth Micro-organisms reproduce from spores.

Cathy Micro-organisms can make their own food.

Dan Micro-organisms can only be seen under the microscope.

Who had made the correct statements?

(1) Abdul and Dan

(2) Cathy and Dan

(3) Abdul and Beth

(4) Beth and Cathy

15 Ali conducted an experiment to find out the temperature at which mould grows best. He put equal amount of cheese into four different places where the temperatures were monitored and kept constant. After two weeks, he made the observations as shown in the table below.

	Cheese in plastic bag 1	Cheese in plastic bag 2	Cheese in plastic bag 3	Cheese in plastic bag 4
Temperature at which the cheese was left	5°C	12°C	18°C	25°C
Observations of the cheese after two weeks				

Based on the observations above, which one of the following statements best explains the relationship between temperature and the growth of mould?

(1) Temperature has no effect on the growth of mould.

(2) As temperature increases, the growth of mould increases.

(3) As temperature increases, the growth of mould decreases.

(4) As temperature decreases, the growth of mould increases.

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16 In the experiment below, Bryan put a balsam plant into a beaker of red-coloured water. A few days later, he observed that the water level in the beaker had decreased and some parts of the plant had turned red.

Which of the following statements explain(s) his observation?

A The roots of the plant absorbed the water.

B The leaves of the plant transported the water to the roots.

C The food-carrying tubes of the plant transported the food from the leaves.

D The water-carrying tubes of the plant transported the water to the leaves.

(1) D only

(2) A and B only

(3) A and D only

(4) A, C and D only

17 Mr Farooq asked, "In which part of the digestive system can digestive juices be found?" Some pupils gave their answers:

Dan	gullet and large intestine
Frank	mouth, gullet and stomach
Steve	mouth, stomach and small intestine
George	stomach, small intestine and large intestine

Which one of the pupils gave the correct answer?

(1) Dan

(2) Frank

(3) Steve

(4) George

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18 Ali conducted an experiment with green bean seeds and sunflower seeds. The table below shows the type of seed and soil used for each jar, W, X, Y and Z as well as where Ali had placed the jars. The number of seeds in each jar was the same.

Jars	Type of seed	Type of soil used	Location of the jar
W	green bean	garden	under the shade
X	green bean	sandy	in the sun
Y	sunflower	garden	under the shade
Z	sunflower	sandy	under the shade

Which two jars should Ali use in order to find out if seeds of green bean or sunflower germinate into seedlings faster?

(1) W and Y only

(2) W and Z only

(3) X and Z only

(4) Y and Z only

19 Yong Kang did a study on three animals, J, K and L. He drew a checklist and placed a tick (√) in the box for each observation made. The completed checklist is as shown below.

Observation	Animal J	Animal K	Animal L
4 stages in life cycle			
Gives birth to young alive			
Young resembles adult			
Moults several times at one stage in its life cycle			

Which of the following correctly represents animals J, K and L?

	Animal J	Animal K	Animal L
(1)	beetle	cow	grasshopper
(2)	butterfly	hen	mosquito
(3)	mosquito	frog	cockroach
(4)	cockroach	horse	grasshopper

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20 Chris had 2 pots of seedlings, A and B, in his garden as shown below. Both seedlings have been grown from seeds of the same plant for the same number of days. He had cut away the seed leaves of seedling in Pot A and the green leaves of seedling in Pot B.

Pot A with seed leaves cut off

Pot B with green leaves cut off

What would happen to the seedlings in Pots A and B after two weeks?

(1) Both seedlings in Pots A and B would die.

(2) The seedling in Pot A would grow taller and the seedling in Pot B would die.

(3) The seedling in Pot A would grow more leaves and the seedling in Pot B would grow seed leaves.

(4) The seedling in Pot A would grow seed leaves and become taller while the seedling in Pot B would die.

21 Alex drove to a building as shown below and reached there at 3 p.m. He wanted to find a car park that can shade his car from the afternoon sun.

Which car park should he choose?

(1) A

(2) B

(3) C

(4) D

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22 Dinesh conducted a test to find out the property of the materials used to make cubes P, Q and R as shown below. Cubes P, Q and R are of the same shape and size.

He then classified the cubes as shown in the classification chart below.

Based on the information above, which of the following best describes the property represented by X and Y?

	X	Y
(1)	Weak	Strong
(2)	Flexible	Not flexible
(3)	Waterproof	Not waterproof
(4)	Floats on water	Sinks in water

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23 The diagram below shows four similar bar magnets with their poles labelled and arranged in the following manner.

Which of the following shows a possible arrangement of the magnets?

(1)

(2)

(3)

(4)

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24 Suhaimi wanted to find out if magnetism can pass through a piece of wood with different thickness. He had three similar magnets of the same strength. Then he put a magnet on each of the three pieces of wood with different thickness. Next a nail was placed below each of the three pieces of wood. The distance between the nails and the pieces of wood were the same. He observed the nail in set-ups D and E moved but the nail in set-up F did not move.

What can Suhaimi conclude from this experiment?

(1) Magnetism can pass through wood.

(2) The iron nails are magnetic materials.

(3) Magnetism can only pass through a piece of wood of certain thickness.

(4) Wood is the only material that should be used to test whether iron nails are magnetic materials.

25 Pooja fixed 3 iron pins, A, B and C, with equal amount of wax and at equal distance from each other, on a metal rod as shown in the diagram below.

Pin A was the last one to drop because heat _____.

(1) is lost from X to Y

(2) is gained from X to Y

(3) travelled from X to Y of the metal rod

(4) travelled from Y to X of the metal rod

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26 Study the graph below.

Which one of the following examples best represents the graph as shown above?

(1) A pot of soup being warmed.

(2) An ice cube taken out of the freezer.

(3) A slice of bread being toasted in the oven.

(4) A hot bowl of noodles being left on the table.

27 Four identical mugs containing the same amount of water were left on a table for 2 hours.

Which mug, A, B, C or D, will have the least amount of water left after 2 hours?

(1) A

(2) B

(3) C

(4) D

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28 The diagram below shows the properties of various matter at room temperature.

Which one of the following represents the matter, W, X and Y?

	W	X	Y
(1)	air	wood	milk
(2)	water	stone	oxygen
(3)	oxygen	juice	sand
(4)	carbon dioxide	oxygen	flour

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29 The table below matches the change in state of water with the process that describes it. Which of the processes has been wrongly matched?

	Change in state	Process
(1)	Gas to solid	Boiling
(2)	Gas to liquid	Condensation
(3)	Solid to liquid	Melting
(4)	Liquid to gas	Evaporation

30 Which of the following activities are good habits to conserve water?

A Taking shorter showers.

B Washing cars using a water hose.

C Using a mug when brushing teeth.

D Washing dishes under running water.

(1) A and B only

(2) A and C only

(3) B and D only

(4) C and D only

End of Booklet A

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CATHOLIC HIGH SCHOOL
SEMESTRAL ASSESSMENT 2
2014
PRIMARY FOUR

SCIENCE

BOOKLET B

Name: _____ ( )

Class: Primary 4 _____

Date: 29 October 2014

Parent's Signature: _____

CHECKED

Booklet A	60
Booklet B	40
Total	100

14 questions

40 marks

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

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.
Follow all instructions carefully.
Answer all questions.
Write your answers in this booklet.

This booklet consists of 16 printed pages, excluding cover page.

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Booklet B (40 marks)

For questions 31 to 44, 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 Look at the diagram below.

Fill in the blank by ticking (√) the box below.
(You may tick more than one box).

It is an insect because it _____ [2]

- [ ] can fly
- [ ] has 6 legs
- [ ] has wings
- [ ] has 3 body parts

(Go on to the next page)

SCORE	/ 2

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32 The diagram shows a plant.

(a) Name plant part Y. [1]

Y : _____

(b) One substance that the roots of plant take in from the soil is [1]

_____

From Questions 33 to 35, fill in each blank with only one word.

33 Talib places a magnet near an iron paper clip.

iron paper clip magnet

(a) The iron paper clip moves towards the magnet. The magnet exerts a [1]

_____ on the iron paper clip.

(b) Choose the correct word from the box to answer the question below. [1]

hard	magnetic	strong

Talib's observation shows that iron is a _____ material.

(Go on to the next page)

SCORE	/ 4

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34 Jane shines a torch on a ball and a shadow is formed on a screen.

(a) A shadow is formed when light is _____ by an object. [1]

(b) Draw the shadow of the ball that is formed on the screen. [1]

35 The diagram below shows a cooking pot.

(a) The handle is made of plastic because it is a _____ conductor of heat. [1]

(b) The pot is made of metal because it is a _____ conductor of heat. [1]

(Go on to the next page)

SCORE	/ 4

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36 The diagram below represents a human body system.

(a) Name the parts labelled above. [1]

W	
Y	

(b) What human body system does the above diagram represent? [1]

_____

(c) Name the part of the skeletal system that protects Y. [1]

_____

(Go on to the next page)

SCORE	/ 3

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37 Khalid was given some materials as shown in the table below.

paper	silver	iron	gold	glass

(a) Classify the materials in the classification chart below. [1]

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(Go on to the next page)

SCORE	/ 1

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Continued from Question 37

(b) Khalid made some observations about the materials and recorded them in the flow chart below.

Based on this observation, give a suitable heading for Groups M and N in (i) below. [1]

Then, classify all the given materials into the classification chart in (ii) below. [1]

(Go on to the next page)

SCORE	/ 2

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38 Ah Mei wanted to find out how the number of batteries affects the number of paper clips attracted to the electromagnet as shown below.

The results of her experiment was shown in the graph below.

(a) Ah Mei's teacher said that she had made an error in the result of her experiment. In the graph above, shade the bar column which she had most likely made the error in. [1]

(b) If one battery is used, predict how many paper clips will be attracted to the electromagnet if the iron nail has been replaced with a copper nail. [1]

(Go on to the next page)

SCORE	/ 2

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39 Jenny used a datalogger to measure the amount of light that passed through 4 beakers of different liquids, W, X, Y and Z. The amount of liquids, distance between the torch and the liquid as well as the distance between the liquid and datalogger are the same in each set-up as shown below.

The results are recorded in Table 1 below.

Table 1

Type of liquid	Amount of light (units)
W	5
X	10
Y	35
Z	25

(a) Which of the following statements would be the aim of the experiment? [1]

	Statements	Put a tick (√) to indicate the correct statement
(i)	To find out if the distance between the torch and the liquid affects the amount of light that can pass through.	
(ii)	To find out if the distance between the datalogger and the liquid affects the amount of light that can pass through.	
(iii)	To find out if the volume of the liquid affects the amount of light that can pass through.	
(iv)	To find out if the type of liquid affects the amount of light that can pass through.	

(Go on to the next page)

SCORE	/ 1

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Continued from Question 38

(c) Which of the following variables had to be changed or kept the same so that the experiment was a fair test? Indicate your choice with a tick (√) in the table provided below. [1]

	Variable	Keep the same	Change
(i)	The number of batteries		
(ii)	The shape of paper clips		
(iii)	The number of coils around the iron nail		
(iv)	The distance between the electromagnet and the paper clips		

(d) Ah Mei made a change to the experiment. She wanted to find out if the number of coils of the wire around the iron nail will affect the number of paper clips that can be attracted. The result of her experiment is as shown below.

Number of coils around the nail	Number of paper clips attracted
3	5
4	7
5	9

Based on the results above, what is the relationship between the number of coils around the nail and the number of paper clips attracted to the electromagnet? [1]

(Go on to the next page)

SCORE	/ 2

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Continued from Question 39

(b) Based on the results in Table 1, [2]
   (i) label the horizontal axis,
   (ii) label the vertical axis and mark the readings on it,
   (iii) draw a bar graph to represent the results of the experiment in the graph below. (Liquid W has been done.)

(c) What conclusion can Jenny make based on the experiment? [1]

_____

_____

(Go on to the next page)

SCORE	/ 3

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40 Imran placed a glass of hot milk at 55°C in a basin of tap water at 30°C in the classroom at room temperature as shown in the diagram below.

(a) What observation could Imran make to the temperature of the hot milk after 20 minutes? [1]

_____

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

_____

_____

(c) Indicate in the table below if the hot milk and basin of tap water has gained or lost heat. [1]

Glass of hot milk	
Basin of tap water	

(d) What could be the temperature of the hot milk after 20 minutes? [1]

_____

(Go on to the next page)

SCORE	/ 4

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41 Look at the classification chart below. P, Q and R are examples of matter.

(a) What are the characteristics of P? [1]

_____

_____

(b) Q and R are both matter. Give another similarity between Q and R. [1]

_____

_____

(Go on to the next page)

SCORE	/ 2

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42 Dinesh was given a 50 cm^3 of plasticine and a beaker containing 100 ml of water.

He then lowered the lump of plasticine into the beaker of water.

(a) Draw the water level after he had lowered the plasticine into the beaker of water in the diagram below. [1]

(b) Then he took the plasticine out of the beaker of water and flattened it. After that he lowered the flattened plasticine into the beaker containing 100 ml of water again.

What would be the new water level after he had lowered the flattened plasticine into the beaker? [1]

_____

(Go on to the next page)

SCORE	/ 2

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Continued from Question 42

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

_____

_____

(d) Base on this experiment, what does this tell us about the property of solids? [1]

_____

_____

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(Go on to the next page)

SCORE	/ 2

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43 Aini had 4 containers, A, B, C and D, made of the same materials. She filled each container with the same amount of water at the same temperature. The experiment was conducted in the same part of the school Eco-garden. She then recorded the volumes of four containers of water, A, B, C and D, at the start of the experiment and at the end of the experiment. The amounts of water are as shown below.

Containers	Amount of water at the start of the experiment (ml)	Amount of water at the end of the experiment (ml)
A	70	55
B	70	40
C	70	50
D	70	30

Aini made some statements about the data she had recorded. [2]
Write, True (T) or False (F), for each statement.

	Statements	Write 'T' for True, 'F' for False
(a)	The water in Container C evaporates the fastest.	
(b)	Container A has the smallest exposed surface area.	
(c)	Container B has a bigger exposed surface area than Container D.	
(d)	The temperature of water in Container A is higher than the temperature of water in Container C.	

(Go on to the next page)

SCORE	/ 2

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44 The diagram below shows an experiment that represents the water cycle in nature.

(a) Does the hot water vapour gain heat, lose heat or remain the same as it touches the aluminium dish? [1]

_____

(b) Without changing or moving the above set-up, suggest one way that can be done to the aluminium dish to increase the amount of water droplets formed. [1]

_____

(c) Which part in the above set-up represents the Sun? [1]

_____

(d) State the process(es) involved in the water cycle in nature. [1]

_____

End of Booklet B

SCORE	/ 4

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EXAM PAPERS 2014

SCHOOL: CATHOLIC HIGH SCHOOL
SUBJECT: SCIENCE
LEVEL: PRIMARY 4
TERM: SA 2

BOOKLET A

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
3	2	4	4	4	2	1	3	4	2
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
2	4	2	1	2	3	3	1	1	2
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
4	4	4	3	4	4	1	1	1	2

BOOKLET B

Q31 has 6 legs. Has 3 body parts.
Q32 (a) leaf (b) water
Q33 (a) magnetic force (b) magnetic
Q34 (a) blocked (b)

Q35 (a) bad (b) good
Q36 (a) windpipe, lung (b) respiratory c) ribcage
Q37 (a) Metals - silver, gold, iron. Non-metals - paper, glass.
(b) (i) Group M:magnetic (ii) iron
(i) Group N:non-magnetic (ii) gold, silver, paper, glass
Q38 (a)

(b) 6 paper clips.
c) (i)Change(ii)Keep the same(iii)Keep the same(iv)Keep the same

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(d) The greater the number of coils around the nail, the greater amount of paper clips attracted.

Q39 (a)(iv) To find out if the type of liquid affects the amount of light that can pass through.

(b) (i) Type of liquid (ii) Amount of light(units)

c) Liquid Y allowed most amount of light to pass through, followed by Z and X. W allowed the least amount of light to pass through.

Q40 (a) The hot milk's temperature will become lower.

(b) The hot milk lost heat to the cooler temperature of the tap water.

c) lost heat, gained heat.

(d) 30°C

Q41 (a) P has a definite shape and a definite volume.

(b) Both Q and R have no definite shape.

Q42 (a)

(b) 150ml

c) Plasticine is a solid and solids have a definite volume so even if Dinesh flattens it and puts it into the water, the water level will be the same like when he puts the plasticine in without flattening it.

(d) Solids have a definite volume.

Q43 (a) F (b) T c) F (d) F

Q44 (a)The water vapour loses heat.

(b) You could put ice in it.

c)The bunsen burner.

(d) Evaporation and condensation.

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Name _____( )

Class : Primary 4 _____

CHIJ ST NICHOLAS GIRLS' SCHOOL

SIMPLE IN VIRTUE

STEADFAST IN DUTY

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Primary 4
Semestral Assessment 2 – 2014
SCIENCE

BOOKLET A

30 October 2014

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

30 questions
60 marks

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

This booklet consists of 26 printed pages.

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Section A : (30 x 2 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.

1. The diagrams below show the growth of a young plant with two missing stages A and B.

A B

Which one of the following best represents stages A and B?

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

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2. The diagram below shows 4 jars, A, B, C and D, each containing an equal number of seeds. Jars B, C and D are placed near the window while Jar A is placed in the refrigerator with a temperature of 2°C.

In which jar(s) will the seeds grow into seedlings?

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

3. The table below shows how some living things can be grouped.

Which one of the following is the most suitable heading for group X?

(1) Fungi
(2) Plants
(3) Bacteria
(4) Mammals

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4. The pictures below show a fern and a rose plant.

Fern

Rose plant

How is the fern similar to the rose plant?

A Both bear flowers.

B Both need water to survive.

C Both reproduce from seeds.

D Both need sunlight to make food.

(1) A and C only

(2) B and D only

(3) B, C and D only

(4) A, B, C and D

5. Which one of the following statements is not true for <u>all</u> birds?

(1) They can fly.

(2) They have wings.

(3) They have feathers.

(4) They have two legs.

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6. Vivian had to classify the four animals as shown below.

grasshopper lion penguin bat

She used the flowchart below to compare the characteristics of the four animals given.

Based on the flowchart above, which one of the following best represents A, B and C?

	A	B	C
(1)	Can it swim?	Does it lay eggs?	Does it live on land?
(2)	Does it lay eggs?	Does it have six legs?	Does it have wings?
(3)	Does it live on land?	Does it have wings?	Does it have hair?
(4)	Does it have hair?	Does it live on land?	Can it swim?

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7. The table below gives information about two organisms, R and S, based on two characteristics. A tick (√) shows that the organism has the characteristic.

Characteristics \ Organism	R	S
Have six legs	√	
Live on land		√

Based on the information above, where letters best represent organisms R and S in the following classification table?

	Organism R	Organism S
(1)	A	C
(2)	B	C
(3)	C	D
(4)	D	A

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8. Which one of the following is the function of a leaf on a plant?

(1) makes food
(2) takes in water
(3) holds plant upright
(4) takes in mineral salts

9. Amy filled 2 similar beakers, A and B, with the same amount of water before pouring a layer of oil on the water surface. She placed a plant in Beaker B and recorded the volume of water in each beaker at the end of 2 days.

Beaker	Volume of water in the beaker at first (mℓ)	Volume of water in the beaker after 2 days
A	200	?
B	200	?

Which one of the following best represents the volume of water in beakers A and B at the end of 2 days?

	Volume of water after 2 days (mℓ)	
	Beaker A	Beaker B
(1)	200	170
(2)	180	160
(3)	200	200
(4)	150	170

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10. Which one of the following shows the correct order of the movement of food through some parts of the digestive system?

(1)

stomach → large intestine → small intestine

(2)

large intestine → stomach → small intestine

(3)

stomach → small intestine → large intestine

(4)

small intestine → large intestine → stomach

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11. Timothy ate a plate of chicken rice. The graph below shows the amount of food that was digested at different parts of his digestive system.

Based on the graph above, which one of the following correctly matches the part of the digestive system to the amount of food being disgested?

	P	Q	R
(1)	stomach	mouth	gullet
(2)	stomach	small intestine	large intestine
(3)	small intestine	stomach	mouth
(4)	small intestine	stomach	large intestine

12. Which one of the following property is true for both air and a glass?

(1) They can be seen.
(2) They take up space.
(3) They have definite shapes.
(4) They have definite volumes.

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13. The diagram below shows a beaker that contains two substances, X and Y.

The diagram below shows what happens when the beaker is tilted.

Based on the observation, which one of the following correctly represents the states of matter of substances X and Y?

	X	Y
(1)	Solid	Solid
(2)	Liquid	Solid
(3)	Liquid	Liquid
(4)	Solid	Liquid

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14. A syringe was filled with some water as shown in Diagram 1. When its plunger was pushed in, a jet of water shot out as shown in Diagram 2.

Diagram 1

Diagram 2

Which one of the following correctly shows the changes in the volume of water and air in the syringe after the plunger was pushed in?

	Volume of Water	Volume of Air
(1)	Increases	Decreases
(2)	Increases	Increases
(3)	Decreases	Increases
(4)	Decreases	Decreases

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15. Fiona filled two identical containers, A and B, with the same amount of water. She then added two objects, X and Y, into containers A and B, respectively. She observed the final water level in each container as shown below.

Based on her observations, which of the following conclusions can she make about objects X and Y?

A Objects X and Y have the same mass.

B Objects X and Y have the same volume.

C Objects X and Y are made of the same material.

(1) B only

(2) A and C only

(3) B and C only

(4) A, B and C

16. The diagram shows an umbrella.

Iron is used to make Part Y of the umbrella because iron _____.

(1) is shiny

(2) is strong

(3) sinks in water

(4) conducts heat well

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17. The flowchart below is used to classify 4 objects, A, B, C and D.

Which one of the above objects, A, B, C and D, is most likely a bath towel?

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

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18. Heather carried out an experiment to test the hardness of 3 different materials, A, B and C. She used the materials to scratch one another. The table below shows how the scratch tests were carried out and the results of the tests.

Which one of the following shows the correct order of hardness of materials, A, B and C, starting with the least hard ?

	least hard →		hardest
(1)	B	A	C
(2)	A	C	B
(3)	B	C	A
(4)	C	A	B

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19. In which one of the following will the two magnets push each other away?

(1)

(2)

(3)

(4)

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20. Tim wanted to find out whether the number of batteries affects the strength of an electromagnet.

Which of the following set-ups should he use to conduct a fair experiment?

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

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21. Sam used a bar magnet to stroke iron nail A 30 times in the direction shown below.

He then placed the magnetised iron nail near some paper clips and recorded the number of paper clips attracted. He repeated his experiment using 2 similar iron nails, B and C, and recorded his results in the table as shown below.

Nail	Number of strokes	Number of paper clips attracted to the iron nail
A	30	8
B	50	15
C	70	29

What was the aim of his experiment?

He wanted to find out if _____.

(1) the magnetic pole of the nail will be affected by the magnet
(2) the material of the nail would affect the number of paper clips attracted
(3) the nail could be magnetised by the magnet using the 'Stroke' method
(4) the number of strokes made would affect the magnetic strength of the nail

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22. Which one of the following is a source of light?

(1)

an orange

(2)

the moon

(3)

a campfire

(4)

a sharpener

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23. 4 pupils, Annie, Beth, Chris and Dale, used a light sensor connected to a datalogger to measure the amount of light that could pass through six different objects, A, B, C, D, E and F. They recorded their results in the bar graph below.

Based on their experimental results, the pupils made the following conclusions about objects, A, B, C, D, E and F.

Annie:	Object C is transparent.
Beth:	Object F is able to block light completely.
Chris:	Object D is more translucent than Object A.
Dale:	Object B would cast a darker shadow than Object E.

Which of the above pupils' conclusions are definitely correct?

(1) Beth and Dale
(2) Chris and Dale
(3) Annie and Beth
(4) Annie and Chris

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24. Penny conducted an experiment in a dark room as shown below. She placed 4 wooden boxes, W, X, Y and Z, on a table edge. There are holes made to the boxes as shown below.

When the candle was lighted, Penny could see the light from the hole in Box Z.

Penny moved Box Y such that Box Y is away from the table edge. She discovered that she could no longer see the light from the hole in Box Z.

Which one of the following statements best explains her observation?

(1) Light travels in a straight line.
(2) Light cannot pass through small holes.
(3) Light cannot be reflected into her eyes.
(4) Light is reflected away from the candle and into other directions.

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25. The diagram below shows three similar soccer balls, A, B and C, placed at different distances in front of a screen. An even light source was switched on and the shadows of the soccer balls were cast on the screen.

Assuming the soccer balls do not block one another, which one of the following diagrams correctly shows the shadows of the soccers balls A, B and C, on the screen?

(1)

(2)

(3)

(4)

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26. Which one of the following is not a source of heat?

(1) The Sun
(2) A lighted bulb
(3) A candle flame
(4) A bright red cap

27. Larry filled two identical flasks with the same amount of liquid A and B. He placed both flasks into a container of hot water as shown in the diagram below.

After 20 minutes, Larry observed the change in height of the red plastic marker in each tube.

Which one of the following statements best explains the change in the height of the red plastic marker in each tube after 20 minutes?

(1) Less heat was conducted to liquid A.
(2) Liquid A lost more coldness than liquid B.
(3) Liquid A has a higher temperature than liquid B.
(4) Liquid B expanded less than liquid A when heated.

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28. Sally wanted to find out more about heat. She recorded the temperature of air in a bottle as shown in diagram 1. She placed some hot stones in the bottle and sealed it with a rubber stopper as shown in diagram 2. After 5 minutes, she noticed that the temperature of air in the bottle increased.

Diagram 1 Diagram 2

Which one of the following best explains the increase in the temperature of air in Diagram 2?

(1) Air is a poor heat conductor.
(2) Heat is being conducted to the thermometer.
(3) Air in the bottle gains heat from the surrounding air.
(4) Heat is conducted from the stones to the air in the bottle.

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29. Jill has 3 containers, X, Y and Z, made of different materials. She poured some water into container X as shown below and recorded the time it took for the water to boil.

She then repeated the experiment using containers, Y and Z, and recorded the results in the table below.

Container	Ability to conduct heat	Time taken for water to boil (min)
X	very good	10
Y	poor	10
Z	good	10

Jill had poured different amounts of water into the containers.

Which one of the following best represents the volume of water poured into each container?

	Volume of water in X (cm^3)	Volume of water in Y (cm^3)	Volume of water in Z (cm^3)
(1)	100	200	300
(2)	300	100	200
(3)	100	300	200
(4)	300	200	100

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30. Shirley filled four cups of the same size and thickness with the same amount of hot tea. The cups are made of different materials.

She measured the temperature of the tea in the cups, A, B, C and D, at the start and after 20 minutes and recorded them as shown in the table below.

Material	Temperature of tea at the start (°C)	Temperature of tea after 20 minutes (°C)
A	60	50
B	60	30
C	80	40
D	80	60

Based on the above results, which material, A, B, C or D, is most suitable for making a container to store cold drinks?

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

End of Booklet A

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Name : _____ ( )

Class : Primary 4_____

CHIJ ST NICHOLAS GIRLS' SCHOOL

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Primary 4
Semestral Assessment 2 – 2014
SCIENCE

BOOKLET B

30 October 2014

Booklet A	60
Booklet B	40
Total	100

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

14 questions
40 marks

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

This paper consists of 16 printed pages.

Parent's Signature/Date

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Section B (40 marks)
For questions 31 to 44, write your answers in this booklet.

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

31. The diagram below shows the stages in the life cycle of a butterfly.

Choose the correct words from the box to answer the question below.

Caterpillar	Egg	Pupa	Seed

Name the two stages X and Y. [2]

X : _____

Y : _____

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32. Delia found some some animals in her garden and classified them into two groups, X and Y, as shown below.

Group X	Group Y

(a) Suggest suitable headings for X and Y. [1]

X : _____

Y : _____

Delia then found another animal P in the garden as shown below.

Animal P

(b) Based on your observation, in which group, X or Y, does animal P belong to? Suggest 2 reasons for your answer. [2]

_____

_____

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33. The pictures below show two similar potted plants, each placed under a different tree.

The potted plants were given the same amount of water every day. After 3 weeks, it was observed that one potted plant had wilted while the other potted plant continued to grow healthily.

Healthy plant with green leaves Wilted plant with yellow leaves

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

_____

(b) Under which tree, A or B, was the wilted plant with yellow leaves placed? Explain your answer. [1]

_____

_____

The pictures below show the roots of trees A and B.

Roots of Tree A Roots of Tree B

(c) During a storm, which tree, A or B, is more likely to be uprooted? Explain your answer.

_____

_____

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34. The diagram below shows the human digestive system.

Identify the part where

(a) digestion first begin : _____ [1]

(b) there is no digestion : _____ [1]

35. The diagram below shows a bottle of food-colouring. A food-colouring is a substance that adds colour to food or drink.

Complete the sentences below to state whether the parts are solid, liquid or gas.

(a) The cover is a _____ [1]

(b) The food-colouring is a _____ [1]

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36. Jason poured some detergent from a container into a smaller plastic bottle using a funnel as shown in the diagram below.

(a) Jason noticed that initially the detergent was able to flow into the bottle easily. After a while, the detergent in the funnel could not flow into the bottle even though it was not full. Suggest reasons for his observations. [2]

(i) Initially: _____

_____

(ii) After a while: _____

_____

(b) Using the same apparatus as above, suggest what Jason could do to enable the detergent to continue flowing into the bottle. [1]

_____

_____

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37. The diagram below shows two fully inflated beach balls, X and Y, balanced on a pole.

(a) When more air is pumped into ball X, what will you observe about the pole? [1]

_____

(b) State the property of matter that you use to obtain the answer in (a). [1]

_____

(c) Will there be a change in the size of ball X? Explain your answer. [1]

_____

_____

In another experiment, two metal cubes, A and B, are balanced on a pole and a flame is placed under cube A as shown below.

(d) After 10 minutes, will the pole remain balanced? Explain your answer. [1]

_____

_____

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38.

Susan places a magnet near an iron rod as shown above. The iron rod moves towards the magnet.

(a) The magnet exerts a _____ on the iron rod. [1]

(b) Choose the correct word from the box to answer the question below.

hard	magnetic	strong

Susan's observation shows that iron is a _____ material. [1]

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39. Martha bought a cleaning device to clean the exterior of the windows of her house.

When Martha held the handle of the cleaning device that is on the interior surface of the window and slid it up and down, the two cleaning sponges moved together.

(a) What property of magnets does this device work on? [1]

_____

_____

(b) Martha noticed a warning sign on the cleaning device which states that it could only be used on windows with a thickness of not more than 3cm. Suggest a possible reason why the cleaning device could not be used to clean windows more than 3cm thick. [1]

_____

_____

(c) Martha accidentally dropped the cleaning device several times from a great height and she found that it could no longer work. What could be a possible reason for her observation? [1]

_____

_____

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40. Izzie set up the experiment as shown below in a dark room.

Sheets A, B, C and D are arranged in a straight line. When the torch is switched on, a bright triangular patch of light is seen on Sheet C only

(a) Based on Izzie's observation, put a tick (✓) in the correct box to indicate if each of the following statements is **'True'**, **'False'** or **'Not possible to tell'**. [2]

	Statement	True	False	Not possible to tell
(i)	Sheet A is transparent.			
(ii)	Sheet B is opaque.			
(iii)	Sheet C does not allow light to pass through.			
(iv)	Sheet D is transparent.			

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Izzie then conducted another experiment by shining a torch on two identical stars made of styrofoam as shown below. She observed that shadows were formed on white paper A and B.

(b) Draw in the boxes provided below the shadows observed on paper A and B. [2]

A	B

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41. The graph below shows how the length of Daisy's shadow changes over a period of time as she walks in a straight line near a street lamp at night.

(a) Two properties of light caused shadows to be formed. One of these properties is light travels in a straight line. State the other property. [1]

_____

_____

(b) Is Daisy walking towards or away from the lamp during the period Y shown in the graph above? Give a reason for your answer. [2]

_____

_____

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42. The diagram below shows a frying pan.

(a) The handle is made of plastic because it is a _____ conductor of heat. [1]

(b) The pan is made of metal because it is a _____ conductor of heat. [1]

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43. Sandy set up the experiment below.

(a) What will happen to the balloon after the metal rod is heated for 20 minutes? Explain your answer. [2]

An MRT track has gaps as shown below.

(b) Suggest a reason why MRT tracks have gaps. [1]

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44. Kenny used four rods, A, B, C and D, of identical diameters for an experiment. The rods were made of different materials. He put a ring of wax around each of them and heated each rod at end X with the same amount of heat. He recorded the time it took for each ring of wax to melt completely.

Rod	Time taken for wax to melt completely (minutes)
A	12
B	15
C	6
D	21

(a) What do you think was the aim of Kenny's experiment? [1]

_____

_____

(b) Compare the results for rod B and rod D. Which rod is a better conductor of _____ [2]

_____

(c) If he increased the thickness of rod C and repeated the experiment, would the time taken for the ring of wax to melt completely be longer, shorter or remained the same? Explain your answer. [1]

_____

_____

End of Paper

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ANSWER SHEET

EXAM PAPER 2014
SCHOOL : CHIJ
PRIMARY : P4
SUBJECT : CHIJ
TERM : SA2

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

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
3	3	3	4	3	2	1	2	4	4	4	2	1

31)X: Pupa Y: egg

32)a)X: Animals with 8 legs and 2 body parts.
Y: Animals with 6 legs and 3 body [arts.
b)Animal P belongs in Group Y. Animal P has 6 legs and 3 body parts like the animals in group Y. Thus animal P belongs in group Y.

33)a)To find out if amount of light affects plant growth.
b)Tree A. There is lesser sunlight to make food.
c)Tree B. B has roots that are not wildly spread out so it cannot hold the plant find out.

34)a)A
b)D

35)a)solid
b)liquid

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36)a)i)Air in the bottle can be compressed.
ii)The air could not escape from the bottle and occupies space.
b)Poke a tiny hole on the bottle neck. Air can escape and detergent can flow in easily again.

37)a)It will tilt towards Ball X.
b)Matter has Mass.
c)No, the air in ball X could be compressed as air does not have a definite volume.
d)Yes, it will remain balanced. Metal cube A gains heat and expanded but mass remained the same.

38)a)magnetic force
b)magnetic

39)a)Unlike poles attract.
b)Magnetic strength will be too weak to pass though thicker Materials.
c)The magnetic in Martha's device have lost their magnetism and can no longer work.

40)a)i)F ii)F iii)T iv)Not
b) A B

41)a)When path of light is blocked by an opaque object, a shadow is formed.
b)Walking away. When Daisy was walking away from the lamp, Daisy's shadow is long and casted in front of her.

42)a)poor
b)good

43)a)The balloon will burst. The balloon gained heat from the Metal rod which gained heat from the Bunsen burner and expanded, thus the balloon burst after 10 minutes.
b)To allow space for the track to expand on a hot day that it will not buckle.

44)a)To find out which rod is a better conductor of heat.
b)Rod B,. B takes a shorter time to melt the wax. Heat is conducted to the wax faster.
c)Longer time. More heat is needed to melt the wax.

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