

NAN HUA PRIMARY SCHOOL CONTINUAL ASSESSMENT 1 2016 PRIMARY SIX SCIENCE

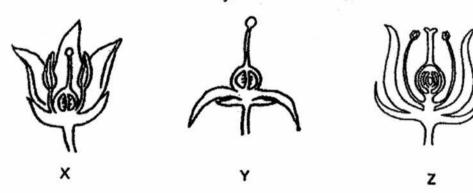
Name	:()	MAR	KS
Class	: Primary 6 /	Sect A:	/ 60
Date	: 1 March 2016	Sect B:	/ 40
Duratio	on : 1 hr 45 min	Total :	/ 100

Parent's Signature : _____

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.

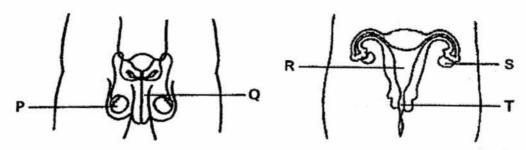
Study the flowers below carefully.



Which of the flower(s) can possibly develop into a fruit? Why?

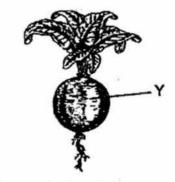
	Flower(s)	Reason
(1)	Flower Y only	Its stigma is not blocked by petals
(2)	Flowers X and Z only	They have petals to attract pollinators
(3)	Flowers X and Z only	They have male and female parts of the flower
(4)	Flower X, Y and Z	They have female parts of the flower

The diagrams below show the male and female human reproductive systems.P, Q, R, S and T are organs of the reproductive systems.

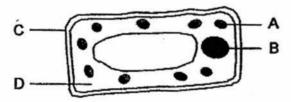


Which of the following statement(s) is/are correct?

- A Fertilisation takes place at T.
- B The fertilised egg develops in R.
- C P and S produce the reproductive cells.
- (1) A only
- (2) B only
- (3) A and C only
- (4) B and C only
- Jason took some cells from part Y of a plant as shown in the diagram below.
 He then observed the cells from part Y under a microscope.



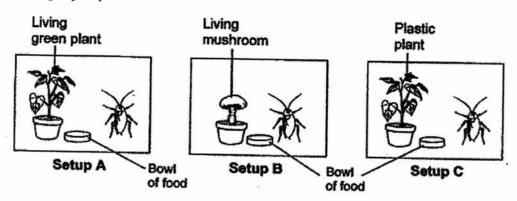
The diagram below shows a leaf plant cell with its parts labelled A, B, C and D.



Which part(s) of the leaf cell is/are missing from the cell that Jason saw from part Y?

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

The diagrams below show three setups. A live cockroach is placed in each setup that has been enclosed in a transparent airtight box. The three boxes were placed in a brightly lit place.



Which cockroach(s) will survive at the end of one week?

- (1) Setup A only
- (2) Setup C only
- (3) Setup A and B only
- (4) Setup B and C only
- Jack has a pet dog. He observed that his dog has the following characteristics:
 - A It eats meat.
 - B It has long eye lashes.
 - C Its fur grew longer after a month.
 - D It sticks out its tongue on a hot day.

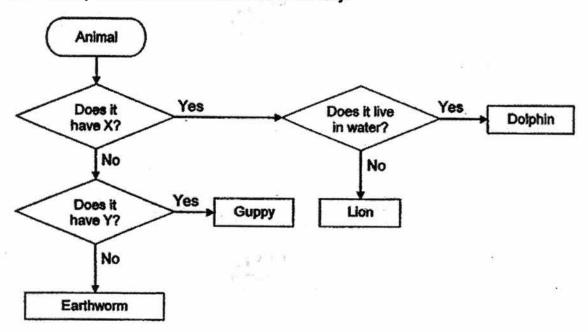
Which of the characteristics above show that Jack's dog is a living thing?

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

14

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

6. Study the classification chart below carefully.



What can characteristics X and Y be?

	X	Y
(1)	gills	lungs
(2)	lungs	gills
(3)	fur	limbs
(4)	limbs	fur

7. Study the classification table below carefully.

S	T	
Grasshopper	Mosquito	
Chicken	Frog	
Cockroach	Mealworm Beetle	

What do S and T represent in the table above?

L	8	T
	3-stage life cycle	4-stage life cycle
	Needs both male and female to reproduce	Does not need both male and female to reproduce
	Eggs laid on land	Eggs laid in water
L	Young resembles the adult	Young does not resemble the adult

 The picture below shows a nectar feeding bat. They have long tongues to feed on nectar found in flowers in the night. They have a strong sense of smell that enable them to find the flowers at night.

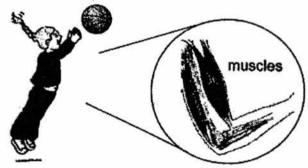


The table below shows some characteristics of flowers P, Q, R and S.

Flower	Colour of Petals	Produces sweet scent?	Blooming
P	Bright	Yes	Day only
Q	Bright	No	Day and night
R	Dull	Yes	Night only
S	Bright	Yes	Day and night

Which flowers are likely to be pollinated by this bat?

- (1) P and Q only
- (2) P and S only
- (3) Q and R only
- (4) R and S only
- Si Min is playing basketball a few hours after her breakfast. She needs to jump and flex her muscles for the activity.



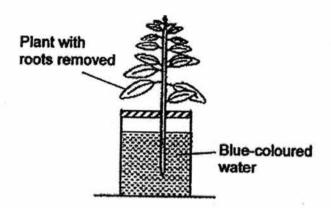
The statements below show how the systems in our body are involved in the above activity.

- A The digestive system is not needed in this activity.
- B The respiratory system works faster to take in more oxygen.
- C The circulatory system works faster to transport oxygen-rich blood to the muscles.

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

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

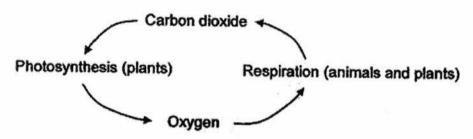
John wanted to find out if plants have water-carrying tubes that can take in water.
 He removed the roots from a plant and placed it in a beaker of blue-coloured water as shown in the diagram below.



What is the variable measured in this experiment that will help John to make a conclusion at the end of the experiment?

- (1) The colour of the leaves
- (2) The number of leaves left
- (3) The plant withered or lived
- (4) The change in height of the plant

 The diagram below shows the exchange of gases with the environment between animals and plants.



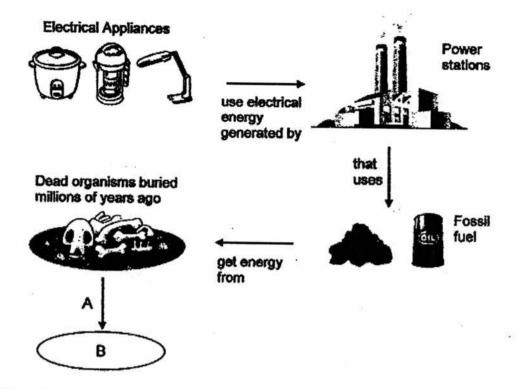
Which of the following statements are true?

- A Both plants and animals respire to give out oxygen.
- B Only plants take in carbon dioxide and give out oxygen.
- Both plants and animals carry out respiration and photosynthesis.
- D Both plants and animals take in oxygen and give out carbon dioxide during respiration.
- (1) A and C only
- (2) A and D only
- (3) B and C only
- (4) B and D only

12. Study the flow chart below carefully.

4-16-

5% 43%



Which of the options below correctly identifies Process A and Object B?

Process A	Object B
Obtain energy directly from	Plants
Obtain energy indirectly from	Living things
Obtain energy directly and indirectly from	Animals
Obtain energy directly and indirectly from	Sun

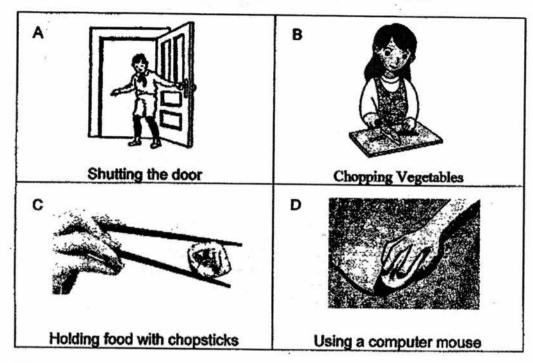
13. Study the classification table below carefully.

Forms of energy				
Р	Q	R		
Sea waves Wind	Bread Natural gas	Water in a dam Hot air balloon in the air		

What could be the possible forms of energy P, Q and R?

- 2	P	Q	R
(1)	Kinetic energy	Heat energy	Gravitational potential energy
(2)	Sound energy	Light energy	Kinetic energy
(3)	Kinetic energy	Chemical potential energy	Gravitational potential energy
(4)	Gravitational potential energy	Sound energy	Heat energy

14. The diagrams below show some daily activities that we engage in.



Which of the above activity/ activities involve(s) only a pull?

- A only
- C only
- A and D only B and D only

The diagram below shows a picture of a car crash.



Four students provided their responses to the effects of the force of the crash on the car.

Jim	It stopped the moving car.
Aini	It changed the shape of the car.
Sam	It changed the position of the car.
Citi	It changed the direction of the car.

Whose responses to the effects of the force on the car are correct?

- (1) Jim and Aini only
- (2) Sam and Citi only
- (3) Jim, Aini and Sam only
- (4) Aini, Sam and Citi only

16. Study the following actions carefully.



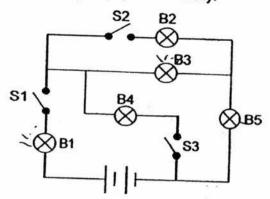




Which of the following force(s) make(s) all the above activities difficult?

- (1) Friction
- (2) Gravitational force
- (3) Friction and gravitational force
- (4) Elastic spring force, friction and gravitational force

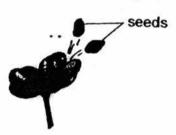
17. Study the circuit diagram below carefully.



When switch S1 is closed, which of the bulbs will light up?

- (1) B1, B2 and B3 only
- (2) B1, B3 and B5 only
- (3) B2, B4 and B5 only
- (4) B3, B4 and B5 only

18. The diagram below shows a fruit splitting open, throwing the seeds outwards.



Which of the following forms of energy do the seeds that are thrown out have?

- (1) Light energy and kinetic energy
- (2) Light energy and elastic potential energy
- (3) Kinetic energy and gravitational potential energy
- (4) Elastic potential energy and gravitational potential energy

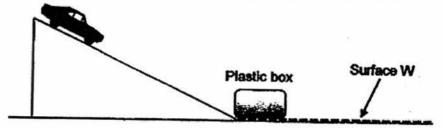
19. Study the activities illustrated in the diagrams below.



Which of the above activities show that friction is useful?

- Sawing and climbing Writing and swimming (2)
- Sawing, writing and climbing Writing, swimming and climbing

 A toy car was rolled down a ramp from the same position as shown in the diagram below. The toy car will hit and move a plastic box over surface W.



He repeated the experiment using three other surfaces, X, Y and Z, placed under the plastic box. The distance moved by the plastic box was recorded in the table below.

Surface	Distance moved by the plastic box (cm)		
W	4		
Х	8		
Υ	6		
Z	3		

Which of the following can be inferred from the experiment?

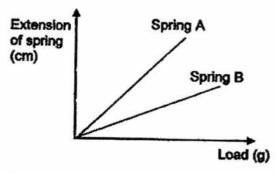
(1) The friction between the plastic box and surface X is the highest.

(2) Surfaces W and Z are made of smoother materials than the other surfaces.

(3) The rougher the surface, the greater the force needed to move the plastic box.

(4) The friction between the plastic box and surface Y is higher than the plastic box and surface X.

21. Shanthi conducted an experiment on springs A and B that have the same original length of 4cm. She hung various loads one at a time and recorded the extension of the spring. The results are shown in the graph below.



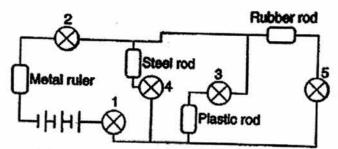
Based on the graph, which of the following statement is definitely correct?

 For the duration of the experiment, the length of Spring A was longer than Spring B.

(2) If more load was added to both springs, Spring A would reach its elastic limit first.

(3) When the loads were removed, Spring A returned to its original length faster than Spring B.

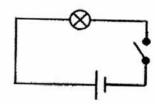
(4) When the same load was added to both springs, Spring B extended more than Spring A. Study the circuit diagram below carefully. All the bulbs and batteries are in working condition.



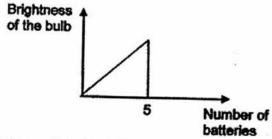
Which bulbs will light up?

15.

- (1) Bulbs 1, 2 and 4 only
- (2) Bulbs 1, 3 and 5 only
- (3) Bulbs 2, 3 and 4 only
- (4) Bulbs 2, 4 and 5 only
- The diagram below shows a simple circuit. The bulb will light up when the switch is closed.



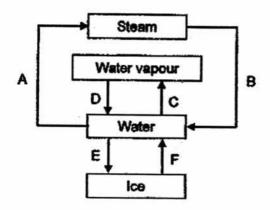
Jieqi added batteries, one at a time, in series to this circuit and recorded the brightness of the bulb without changing anything else. She plotted the graph with the measurements she recorded.



Which statement(s) about the experiment above is/are definitely true?

- A The more batteries added, the brighter the bulb.
- B One of the batteries went flat when the 5th battery was added.
- C The brightness of the bulb remains at zero when the 6th battery is added.
- (1) A only
- (2) Conly
- (3) A and B only
- (4) B and C only

24. The diagram below shows the various states of water. Letters A, B, C, D, E and F represent different processes.



Which of the following correctly matches the letters to the processes?

	Evaporation	Condensation	Freezing	Melting	Boiling
(1)	A, F	В	D	E	С
(2)	C	A, D	F	E	В
(3)	C	B, D	E	F	A
(4)	A, C	E	В	D	F

Four containers, P, Q, R and S, were filled with 200ml of water. Each container
were placed at different locations and exposed to different conditions as shown
in the table below.

Container			Exposed surface area of water (cm²)
P	20	High	20
Q	30	Low	10
R	20	Low	10
8	30	High	20

Which container will have the most water left after two hours?

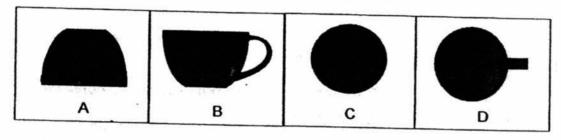
- (1) P
- (2) Q
- (3) R
- IA) S

The diagram below shows a mug.



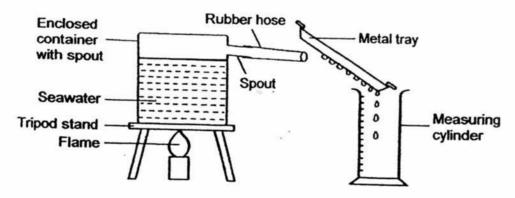
A beam of light is shone onto the mug to form a shadow on a white wall in a dark room.

Which of the following could possibly be the shadows formed?



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

27. Matthew prepared the setup below to show how rain is formed.

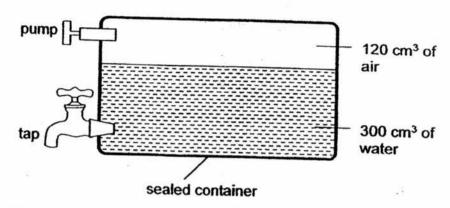


At the start of the experiment, the measuring cylinder began to fill quickly. However, after five minutes, the amount of water droplets formed on the metal tray reduced even though nothing was changed.

What could be a possible reason for this observation?

- The seawater in the container was running out.
- (2) The amount of steam from the spout had reduced.
- (3) The metal tray had lost heat to the steam and contracted.
- (4) The metal tray had gained heat from the steam and increased in temperature.

28. The diagrams below shows a sealed container filled with 300 cm³ of water.

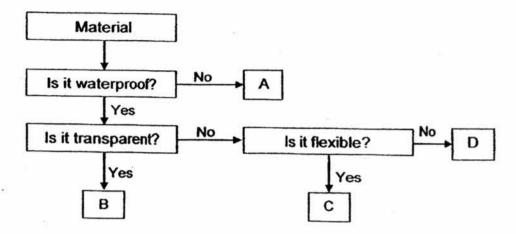


100 cm³ of water was released through the tap and then 50 cm³ of air was pumped out of the container.

What is the volume of air and water left in the sealed container?

1	Volume of air (cm ³)	Volume of water (cm ³)
L	70	150
L	70	200
L	170	. 150
L	220	200

29. Study the flow chart below carefully.



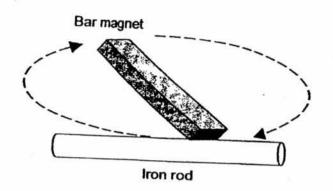
The picture below shows a car cover being used to protect the car when the owner is away on a long vacation.



Which one of the materials is best used to make the car cover?

- (1) A
- (2) В
- C
- (3) (4) D

The diagram below shows an iron rod being stroked by a bar magnet in a circular motion to magnetise it.



Which of the statements about magnetizing the iron rod is/are incorrect?

- Stroke the iron rod hard until it gets hot to make a strong magnet B
- Use both ends of the bar magnet to stroke the iron bar without moving the
- Stroke from one end of the iron rod to the other using one end of the bar C magnet only.
 - (1) A only
 - (2) C only
 - (3) A and B only
 - (4) B and C only

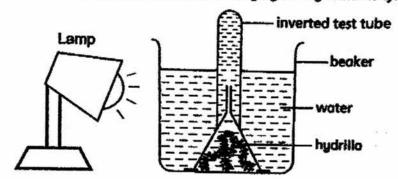
End of Section A



NAN HUA PRIMARY SCHOOL **CONTINUAL ASSESSMENT 1 2016** PRIMARY SIX SCIENCE

Na	me :()	MARKS	
Cla	RSS : Primary 6 /	40	
The	ction B: (40 marks) ite your answers to question 31 to 44. number of marks available is shown in brackets [] at the er t question.	nd of each question	or
31.	Study the diagram of the human circulatory system below of	arefully.	
	A Rest of body heart		
(a)	Name 2 substances that are transported in the circulatory sy	/stem. [1]	j
(b)	Name the gas that is in greater amount at B than at A. Why	is this so? [2]	•
_			et .
	8:		€5
_			
	Score	3	E.

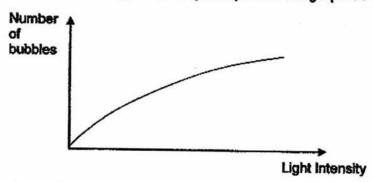
32. Jamie placed some hydrilla into a funnel and inverted it together with a test tube into a beaker of water as shown in the diagram below. She placed a lighted lamp next to the beaker for five hours without changing the light intensity.



(a) After five hours, an air space is observed at the top of the inverted test tube. What is the gas collected at the top of the inverted test tube and what is the process that enabled the plant to produce the gas?

Gas: _____ Process: ____

(b) Jamle repeated the above experiment but this time, she increased the light intensity over the five hours. She counted the number of bubbles produced as she increased the light intensity and plotted the graph below.



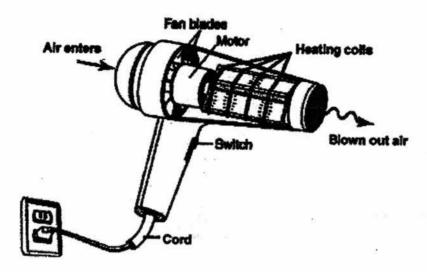
(i) Identify the changed variable and measured variable in this experiment. [1]
Independent (Changed) variable:

Dependent (Measured) variable:

(ii) Based on the graph, how was the rate of bubbles produced affected by the light intensity?
[1]

Score

33. A hair dryer is an electrical appliance used to blow out hot air to dry our hair quickly after a shower. The diagram below shows the internal parts of the hair dryer.



(a) Identify the useful energy(s) found at the various parts when using the hair dryer.

Ŋ	Cord	
ii)	Fan blades	V
iii)	Heating coils	
iv)	Blown out air	

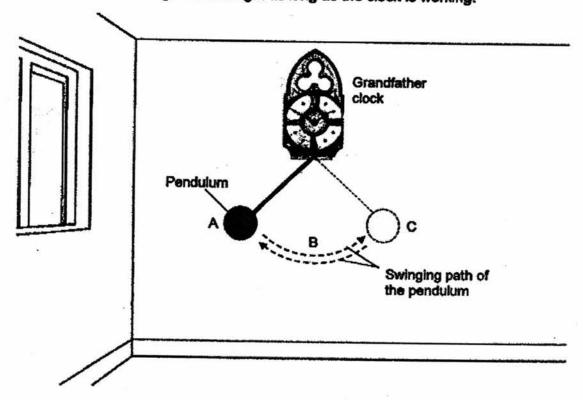
(b) The fan below is another common household appliance.



Name two unwanted energy produced by the fan when it is turned on.

[1]]

34. The diagram below shows a grandfather clock hung on a wall in a room. It has a pendulum that swings left and right as long as the clock is working.



(a)	Identify the energy possessed by the pendulum at:		[1]
	B:	- 1 N	

(b) The grandfather clock runs on electricity. During a blackout, the entire room is left without electricity. The pendulum is observed to swing a few more times before it finally stopped.

Without electricity, why did the pendulum continue to swing a few more times before it finally stopped? [1]

Score 2

35. The diagram below shows a baseball player swinging his bat to hit the ball.



(a) State two possible effects of the force exerted by the baseball bat on the ball?

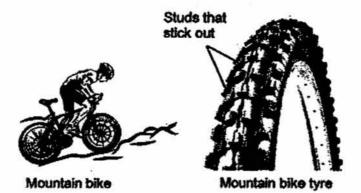
[1]

After the player hits the ball, he sends the ball flying up into the air.



(b) Explain why the flying baseball begins to slow down in the air and falls to the ground. [2]

36. The diagrams below shows a mountain bike and a close-up picture of a mountain bike tyre. These bikers normally cycle on mud-paths and forest tracks. Their tyres are so rough, they look like having studs that stick out of the tyres.



(a) How do these tyres help to prevent the mountain bike from slipping when travelling on the mud-paths?

(b) What is a disadvantage of using such tyres? [1]



(c) What change would you make to the mountain bike tyres in order to go faster on the Park-Connector cycling paths? [1]

37. The diagram below shows how we can shoot a rubber band.

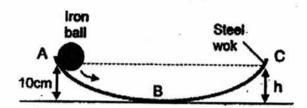


The table below shows the distance moved by the rubber band when it is stretched at various lengths

Stretched length of rubber band (cm)	Distance moved by the rubber band (m)
10	2
15	4
20	6

(a)	What is the relationship between the extension of the rubber band and distance moved by the rubber band?		
(b)	Explain why the rubber band moved further when stretched to 20cm as compare to 10cm.		

38. Jessie prepared an experiment as shown below.



She released an iron ball at the top edge of side A of the steel wok and measured how high the ball reached, height h, at side (. She recorded the measurement in the table below.

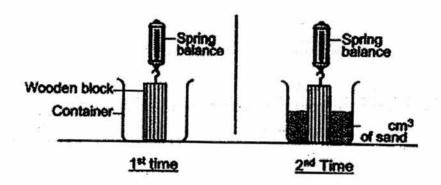
Attempt	Height h (cm)	
1 st	9.5	

Jessie was puzzled that the iron ball did not reach the helght of 10cm on the opposite side of the wok.

- (a) What should Jessie do to ensure the reliability of her results? [1]
- (b) Write down the energy conversion from the time that she released the iron ball at A, to B and to C. [1]
- (c) Why was the ball not able to roll to a height h of 10cm at C? [1]

 Kenny set up an experiment to measure the amount of force needed to lift the wooden block out of the container.

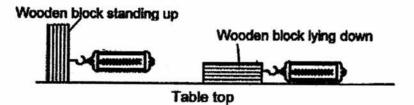
He did the experiment the first time with nothing in the container. He then poured in 200 cm³ of sand and measured the amount of force needed to lift the wooden block out of the container.



He recorded the measurements in the table below.

-	Force needed to lift the wooden block (N)
1st time	200
2 nd Time	250

- (a) What is the force that caused the spring balance to stretch the first time? [1]
- (b) After adding the sand, an additional 50N force was needed to lift the wooden block out of the container with the sand. What is this additional 50N force for? [1]

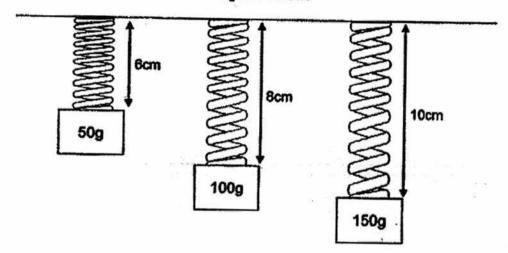


Using the same wooden block and spring balance, Kenny measured the force needed to move the wooden block when different sides are placed on the same table top. He tabulated the results as shown below.

Wooden block position	Surface area in contact with the table top (cm ³)	Force needed to move the wooden block (N)	
Standing up	25	100	
Lying down	50	100	

(c)	What can you conclude from the results of the experiment?	•	[1]
	, 1 -		

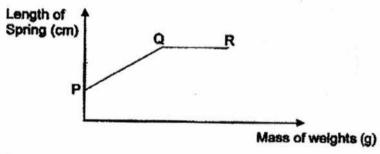
 In an experiment, various loads were hung on a spring to measure how much they stretched as shown in the diagram below.



(a) Explain why did the spring stretch when a load was hung on it?

[1]

After the experiment above, 50g weights was continued to be added to the spring above. The length of the spring was recorded and shown in the graph below.



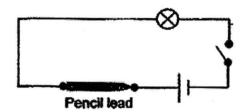
(b) What is P?

[1]

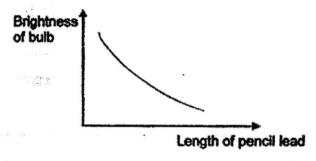
(c) The spring had reached its elastic limit at Q. From the graph, explain clearly why this is true.
[1]

Score 3

41. Alex set up the experiment as shown in the diagram below.



During the experiment, he used pencil leads of different lengths and measured the brightness of the bulb. With the results, he plotted a graph.

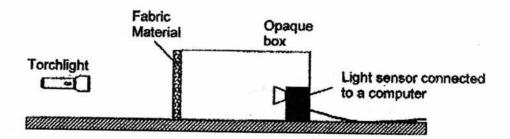


(a) What is the property of the pencil lead that allowed the experiment to be carried out?

(b) What is a possible conclusion you can infer from this experiment? [1]

(c) During the experiment, what could have happened to the battery that could make this experiment an unfair test? [1]

42. Mr Chua prepared a setup using an opaque box that is open at one end. He placed a fabric material over the open end and shone a torchlight through it as shown in the diagram below.



Mr Chua then recorded the amount of light measured by the light sensor fixed inside the box. He repeated the experiment using different fabric materials and recorded the amount of light measured by the light sensor.

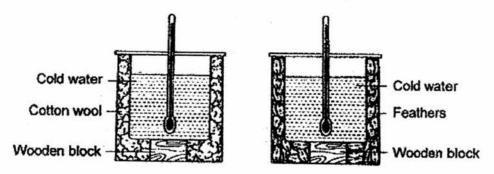
(a)	Name two variables Mr Chua ne	ed to keep constant to make this exp	eriment a
	fair test.		[1]

(b)	What do you think is the aim of Mr Chua's experiment?	[1]

(c).	Why did Mr Chua use a light sensor instead of t	s own eyes to see how mucl	
	light passed through the material?	[1]	

Score 3

43. Eli prepared two identical beakers filled with equal amount of cold water and placed them in two identical larger beakers, one filled with cotton wool and the other filled with feathers.



The aim of Eli's experiment was to find out if cotton wool or feathers was the poorer conductor of heat. He recorded the temperature of the water at the start of the experiment and after one hour in the table below.

Material	Starting Temperature (°C)	Temperature after one hour (°C)
Cotton wool	5	10
Feathers	5	8

- (a) Based on the results in the table, which material was the poorer conductor of heat? Explain. [1]
- (b) The diagram below shows a sleeping bag.



If you were to go camping and had to sleep outdoors in the cold, the sleeping bag keeps you warm.

Feather is used as stuffing for your sleeping bag to keep you warm.

Explain why feather is used.

[2]

44. Ravi has two steel bars, X and Y. He thinks that one of them is a magnet but he was not sure.

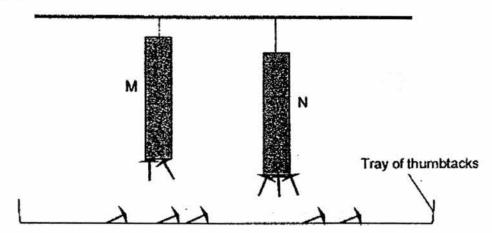


He conducted a simple experiment by bringing the different ends of the steel bars together and recorded his findings in a table.

Ends that me	et each other	Observation		
P	R	Attracted		
Q	S	Attracted		
Р	S	Repelled		

(a) From the results of Ravi's experiment, what can you conclude about steel bars X and Y? Explain your answer clearly.

In a separate experiment, Magnets M and N were hung over a tray of thumbtacks to see how many thumbtacks each magnet can attract as shown in the setup below.



(b) From the simple experiment above, is it possible to tell which magnet is stronger? Explain your answer. [2]

End of Paper

Score

3

EXAM PAPER 2016

SCHOOL:NAN HUA

SUBJECT: P6 SCIENCE

TERM:CA1

ORDER CALL:

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

31)a)Oxygen and carbon dioxide.

b)Oxygen At B. The blood had taken in oxygen from the lungs. At A, the blood is returning to the heart from the rest of the body where oxygen is taken in for respiration.

32)a)Gas: oxygen

Process: photosynthesis

b)i)The intensity of the light

The number of bubbles

- 32)b)ii)The higher the light intensity the light rate of bubbles produced.
- 33)a)i)electrical energy

ii)kinetic energy

iii)heat energy

iv)heat energy + kinetic energy

b)Sound energy and heat energy.

34)a)B: Gravitational potential + kinetic energy

C: Gravitational potential energy

- b)There is still gravitational potential energy and kinetic energy to let the pendulum continue swinging a few more times.
- 35)a)The ball moves in a different direction. The ball moves faster.
- b)There is air resistance that slows the ball down and gravity pulling the ball down the ground.
- 36)a)These types increases friction between the types and these paths preventing the bike from slipping.
- b)The friction produced will slow the bike down and not let it go very fast.
 - c)I will change the tyres to tyres with less studs.
- 37)a)The further the rubber band is stretched the further the rubber and moves.

- 37)b)The rubber band has more elastic potential energy to be converted to more kinetic energy when released.
- 38)a)Jessie should repeat the experiment two more times.
- b)Gravitational potential energy→kinetic energy→ Gravitational potential energy.
- c)When the ball reached B, some kinetic energy has been converted into other types of energy.
- 39)a)The weight of the wooden block.
- b)The 50N force was needed to overcome the friction between the sand and the wooden block.
- c)The position and surface area in contact does not affect the force needed to move the wooden block.
- 40)a)Gravity pulls the load down and the spring is stretched.
 - b)The length of the spring without loads.
- c)From Q to R the length of the spring is contact, thus, the spring will reach its limit.
- 41)a)The pencil lead is able to conduct electricity.
 - b)The longer the pencil lead, the dimmer the bulb light up.
 - c)The battery may become weaker/ flat.

- 42)a)The thickness of the fabric material and the intensity of the light.
- b)To find out if different material allow different amounts at light to pass through.
 - c)The light sensor is more accurate.
- 43)a)Feathers was the poor conductor of heat as the temperature of water is cower after one hour. The water gainer heat slower from the surrounding.
- b)I would use feathers since it is a poor conductor of heat and can reduce heat loss from my body to the surrounding.
- 44)a)They are both magnets. Like poles repel and both bars repel each other, thus, making them magnets.
- b)No. It is an unfair test as M and N are hung at different heights, thus, I am unable to tell which magnet is stronger.