Name : _____ ( )

Class : Primary 5 _____

CHIJ ST NICHOLAS GIRLS' SCHOOL

Primary 5

End-Year Assessment

SCIENCE

BOOKLET A

29 October 2020

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

28 questions
56 marks

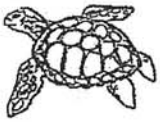
Do not open this booklet until you are told to do so.
Follow all instructions carefully.

This paper consists of 16 printed pages.

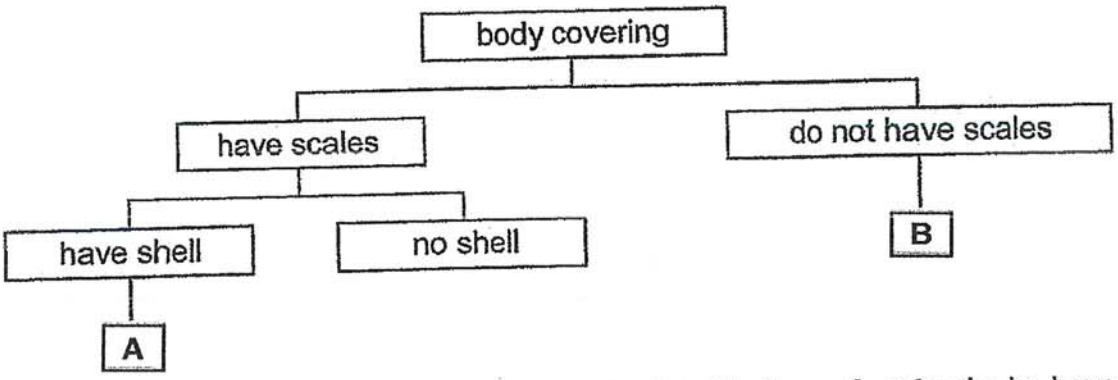
Section A (28 x 2 marks = 56 marks)
For each question from 1 to 28, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). **Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet provided.**

1. Study the classification chart and the three animals below.


frog


turtle


crocodile



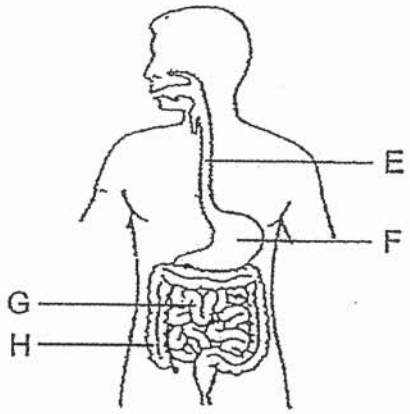
Which of the following shows the correct classification of animals in boxes A and B?

	A	B
(1)	crocodile	turtle
(2)	crocodile	frog
(3)	frog	crocodile
(4)	turtle	frog

2. Which statement is correct about bacteria and moulds?

(1) Both are fungi.
(2) Both reproduce from spores.
(3) Both can cause food to turn bad.
(4) Both are multicellular organisms.

3. The diagram below shows parts of the human digestive system.

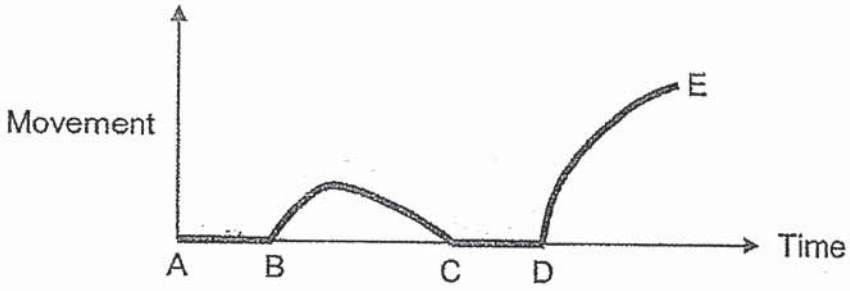


Based on the diagram above, which of the following statements are true?

A Part E takes air into the lungs.
B Part G contains digestive juice.
C Part H is where water is being absorbed into the body.
D Part F is where food is digested and absorbed into the body.

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

4. The graph below shows how active an insect is during the different stages in its 4-stage life cycle.

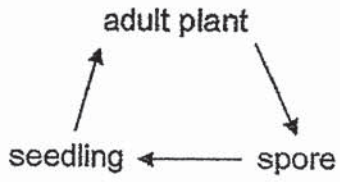


What stage of the life cycle does part BC represent?

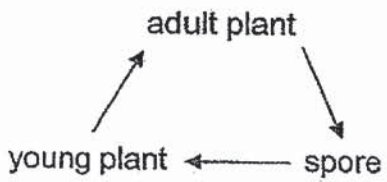
(1) egg
(2) pupa
(3) larva
(4) adult

5. Which of the following best represents the life cycle of the bird's nest fern?

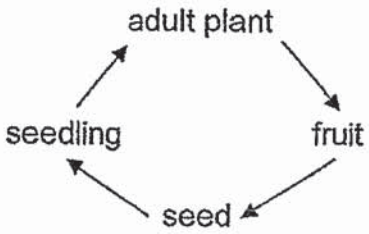
(1)



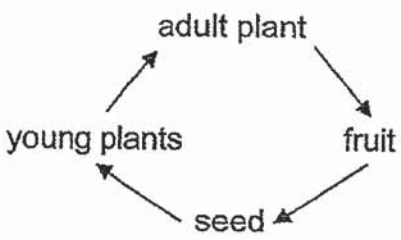
(2)



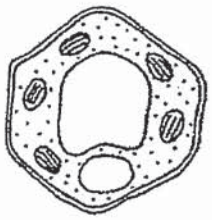
(3)



(4)



6. Siva observed the cell below with a microscope and concluded that it was a plant cell.



Which characteristics of the cell helped Siva to conclude that it was a plant cell?

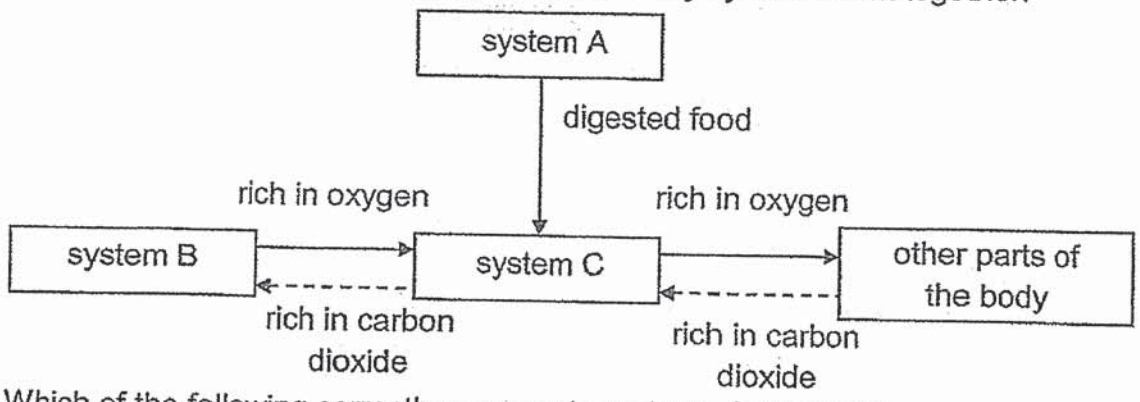
A It has a nucleus.
B It has a cell wall.
C It has chloroplasts.
D It has a cell membrane.

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

7. Which of the following controls most of the activities within the cell?

(1) Nucleus
(2) cell wall
(3) Cytoplasm
(4) cell membrane

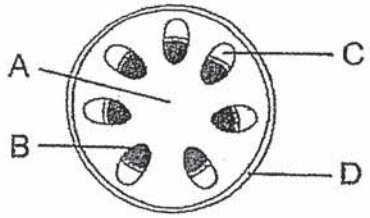
8. The chart below shows how different human body systems work together.



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

	system A	system B	system C
(1)	digestive	respiratory	circulatory
(2)	respiratory	circulatory	digestive
(3)	circulatory	digestive	respiratory
(4)	digestive	circulatory	respiratory

9. The diagram below shows the cross-section of a plant stem.



Which part A, B, C or D transports food to other parts of the plant?

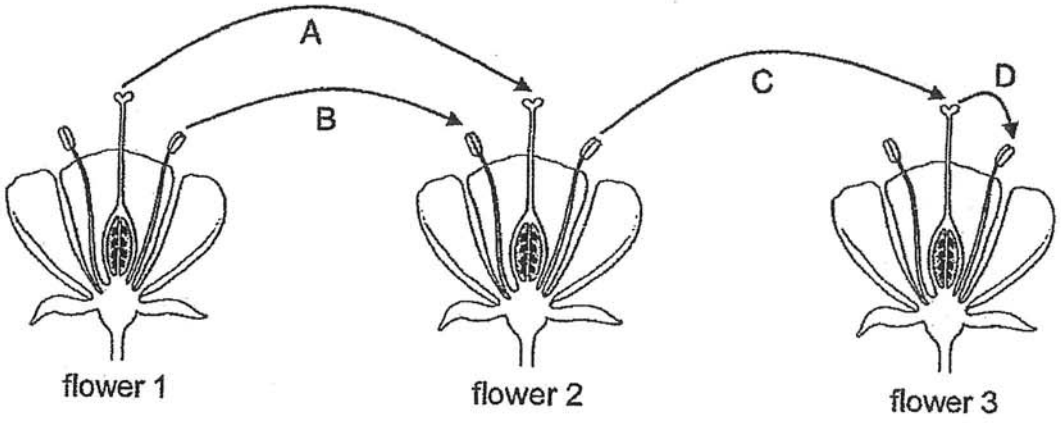
(1) A
(2) B
(3) C
(4) D

10. Which of the following characteristics help to identify flowers which are insect-pollinated?

A Nectar is present and fragrant.
B Stigmas are long and feathery.
C Petals are large and brightly-coloured.
D Long filaments with anthers sticking out of the flowers.

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

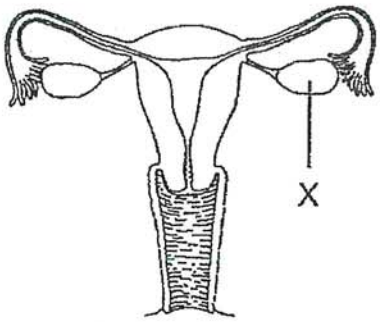
11. The diagram below shows three similar flowers from the same plant. The arrows show the movement of pollen grains.



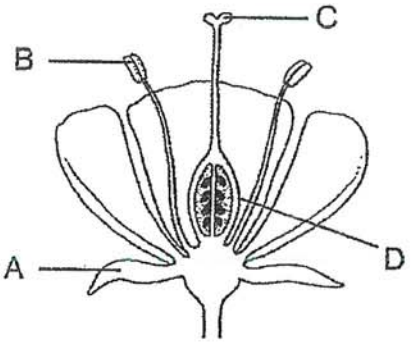
Which arrow(s) correctly show(s) the process of pollination?

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

12. Study the diagram below.



human female reproductive system



flower

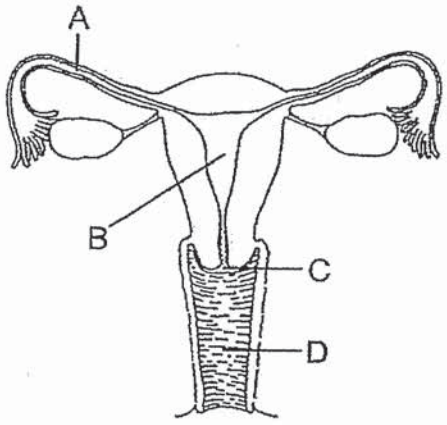
Which part of the flower has a similar function as part X?

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

13. Which one of the following statements about human reproduction is true?

(1) Female egg cells can swim.
(2) Human reproduction ensures the continuity of future generations.
(3) The average duration of a typical pregnancy is about one full year.
(4) A few sperms will be able to successfully fertilize one female egg cell.

14. The diagram below shows the human female reproductive system.



A woman underwent surgery to remove a part of her reproductive system due to a medical condition. Which was the part that was removed which prevented a fertilised egg from developing into a foetus?

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

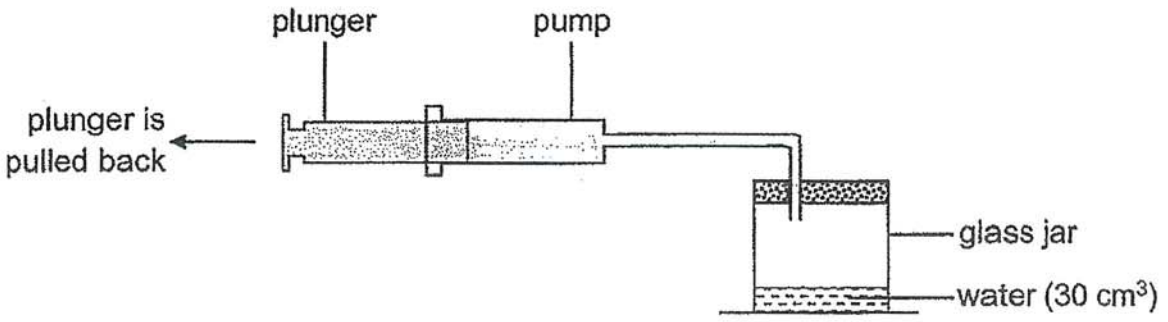
15. A container containing three powders X, Y and Z are mixed. These powders do not dissolve in water. The properties of the three powders are given in the table below.

Powder	Property A	Property B	Property C
	Magnetic material	Sink in water	Good conductor of heat
X	yes	no	yes
Y	no	yes	yes
Z	no	no	no

Which property/properties should we make use of in order to separate the three powders?

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

16. The diagram shows a pump which is connected to a glass jar. The volume of the glass jar is 300 cm^3 and it contains 30 cm^3 of water.

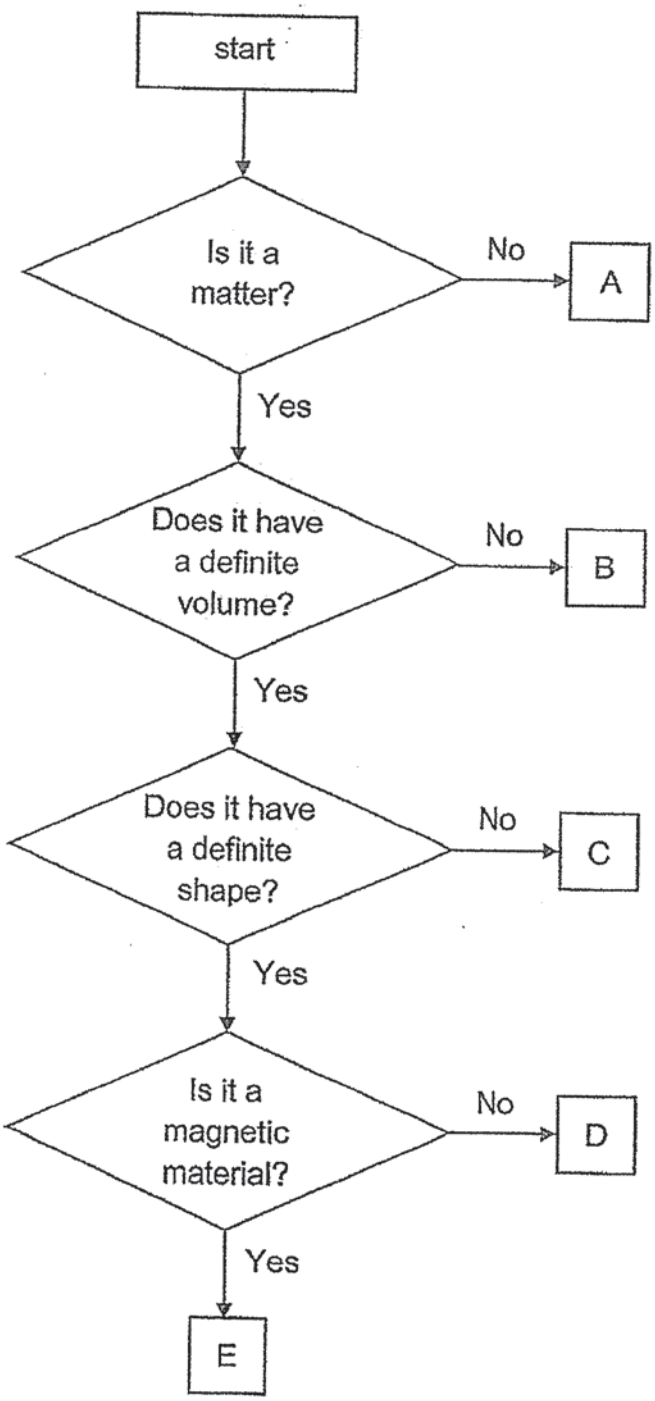


Each time the plunger of the pump is pulled back completely, 20 cm^3 of air would be drawn out of the glass jar.

Which of the following shows the correct volume of air and water in the glass jar after the plunger is pulled back completely once?

	Volume of air (cm^3)	Volume of water (cm^3)
(1)	300	30
(2)	300	10
(3)	270	30
(4)	270	50

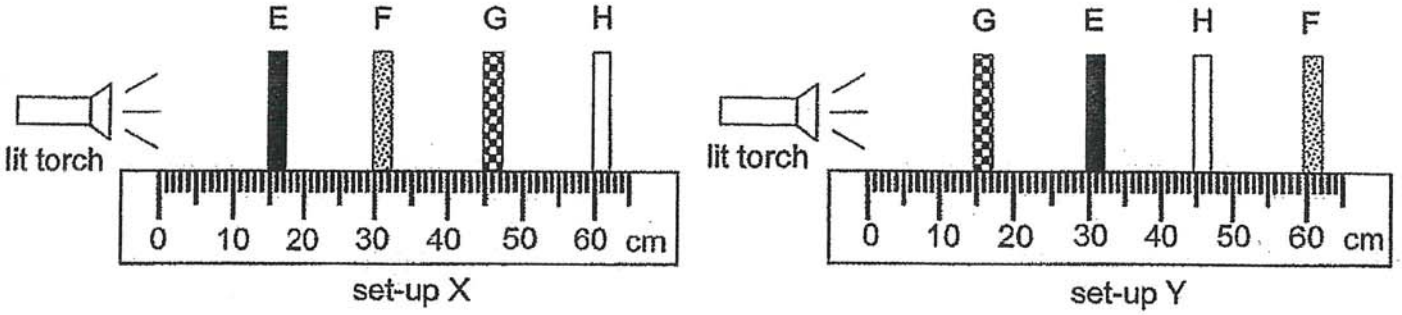
17. Study the flow chart below.



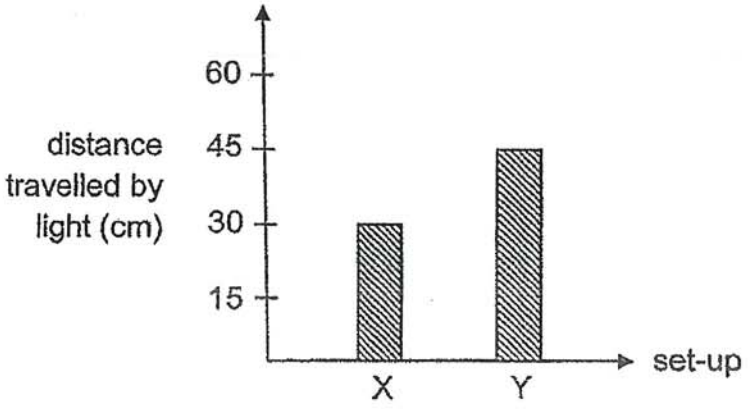
Which of the letters correctly represent a copper rod, oil and heat?

	Copper rod	Oil	Heat
(1)	C	D	B
(2)	D	C	A
(3)	D	B	C
(4)	E	C	A

18. Aishah conducted an experiment to find out if light can pass through four different materials E, F, G and H. The materials were arranged in two set-ups X and Y as shown below.



The distance travelled by the light in each set-up was measured and shown in the graph below.

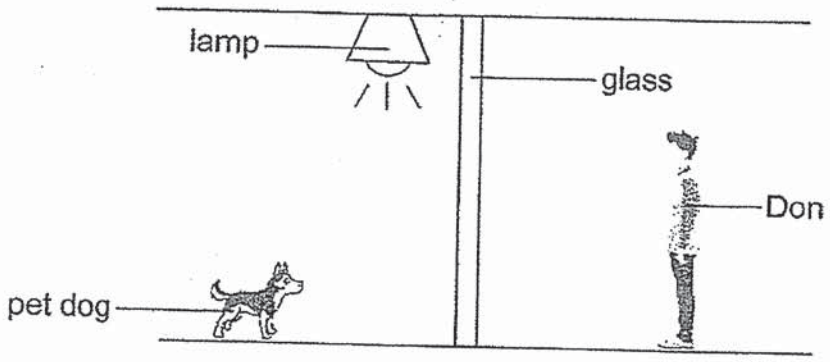


Based on the results given, which of the following statements are correct?

A Material E allows light to pass through.
B Material G does not allow any light to pass through.
C Materials F and H do not allow any light to pass through.

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

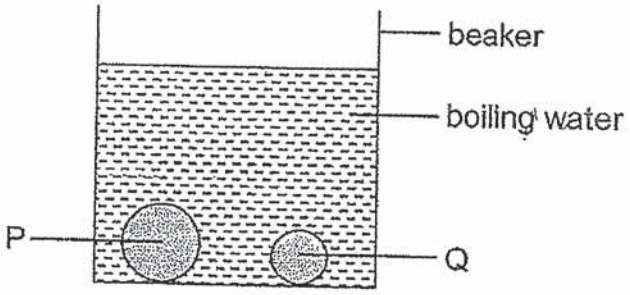
19. Don could see his pet dog when he stood behind the glass.



Which one of the following explains why Don could see his pet dog?

(1) The glass reflected light from the lamp into Don's eyes.
(2) Light from the lamp passed through the glass and entered Don's eyes.
(3) The pet dog gave off light and light entered Don's eyes through the glass.
(4) The pet dog reflected light from the lamp and light entered Don's eyes through the glass.

20. Two steel balls P and Q of different masses were put into a beaker of boiling water at the same time.

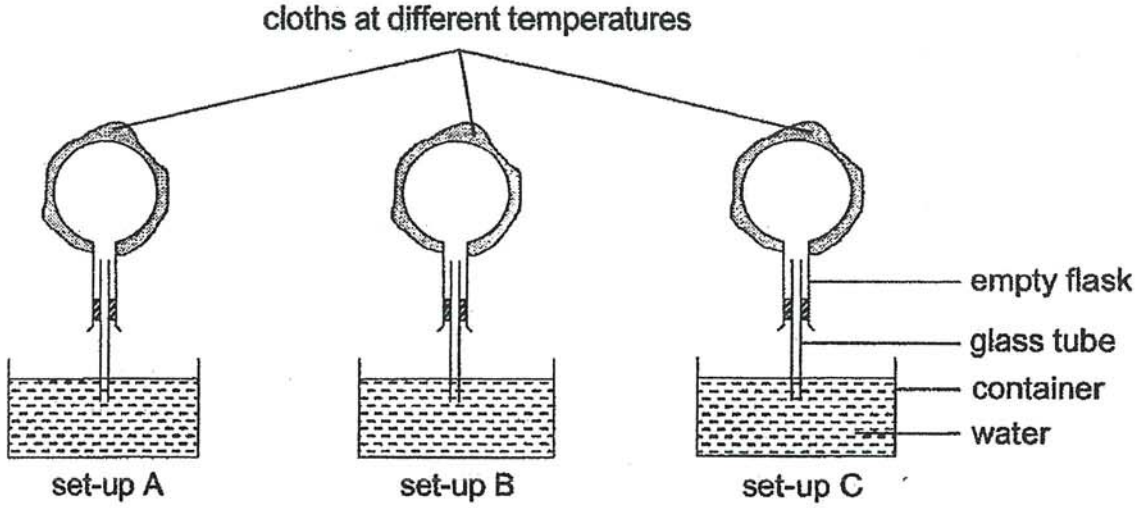


Which of the following statements about the steel balls are correct after five minutes?

A Q is hotter than P.
B P has more heat than Q.
C Q is a better conductor of heat than P..
D Both P and Q have the same temperature.

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

21. Hassan conducted an experiment as shown below.



He recorded his observations in the table below.

Set-up A	Water rose up the glass tube.
Set-up B	No changes were observed.
Set-up C	Bubbles were observed in the water in the container.

Which of the following correctly shows the temperature of the cloth used to wrap the flask in each set-up?

	Set-up A	Set-up B	Set-up C
(1)	5 °C	90 °C	room temperature
(2)	5 °C	room temperature	90 °C
(3)	room temperature	5 °C	90 °C
(4)	90 °C	room temperature	5 °C

22. John magnetised a nail using a bar magnet as shown in Diagram 1. Diagram 2 shows the poles of the magnetised nail.

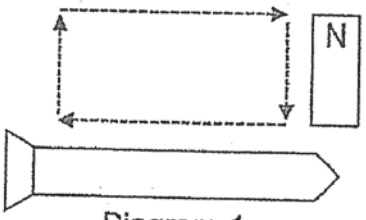


Diagram 1

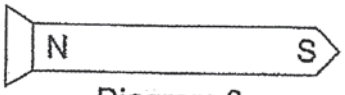


Diagram 2

He magnetised two more nails as shown in Diagrams 3 and 4.

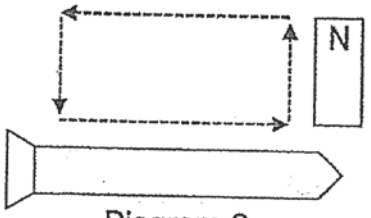


Diagram 3

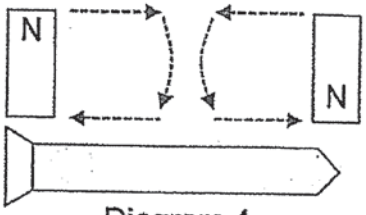
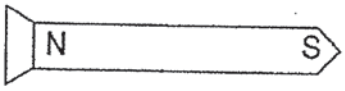
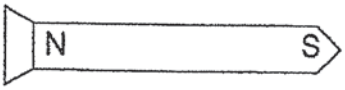
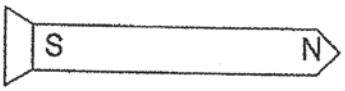
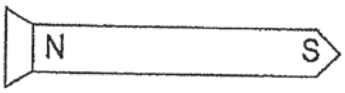
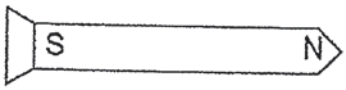
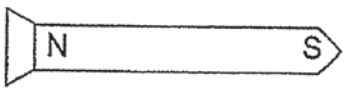


Diagram 4

Which of the following shows the magnetic poles of the magnetised nails in Diagrams 3 and 4?

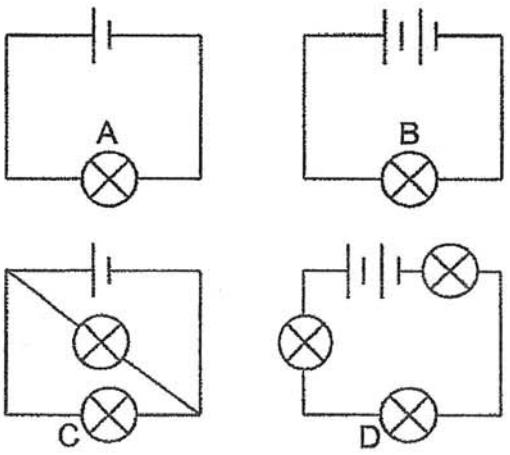
	Diagram 3	Diagram 4
(1)		
(2)		
(3)		
(4)		

23. When two objects X and Y were brought near each other, they moved in the directions indicated by the arrows as shown.

From the observation above, which one of the following statements about objects X and Y is definitely correct?

(1) Both are magnets.
(2) Both are made of iron.
(3) One of the objects is a magnet.
(4) Their like poles are facing each other.

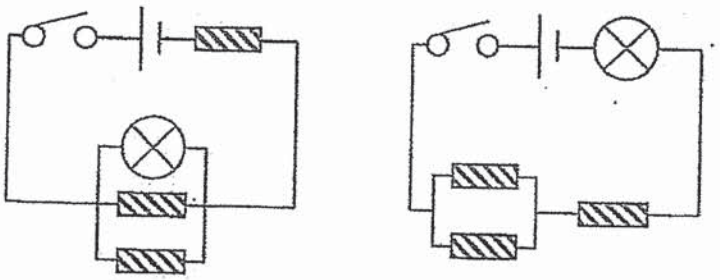
24. Study the circuits below. All bulbs are identical and in good working condition.



Which of the following shows the correct comparison for the brightness of the bulbs?

	brightest ⟶		dimmest
(1)	B	A	D
(2)	B	A	C
(3)	D	C	B
(4)	D	A	C

25. Each of the circuits below has a copper rod, a wooden rod and a plastic rod.



circuit A

circuit B

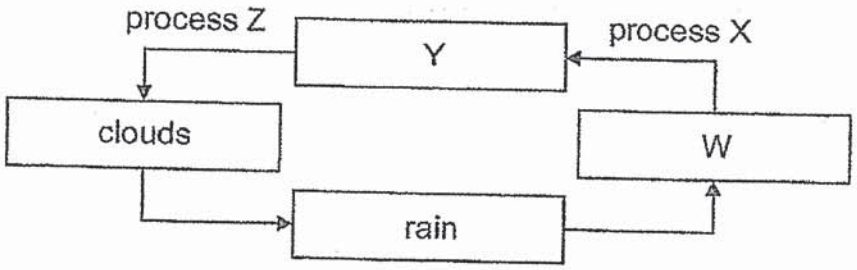
In which of the above circuit(s) would it be possible for the bulb(s) to light up?

(1) A only
(2) B only
(3) A and B only
(4) None of the circuits

26. Substance X is a liquid at 40 °C and a gas at 300 °C. Which of the following is true about substance X?

	Melting point of X (°C)	Boiling point of X (°C)
(1)	50	200
(2)	50	400
(3)	30	200
(4)	30	400

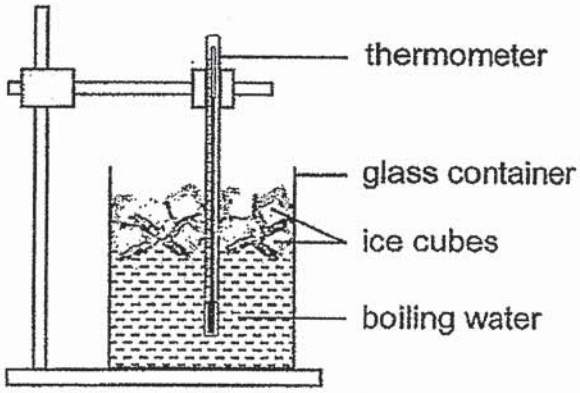
27. The diagram below shows the water cycle.



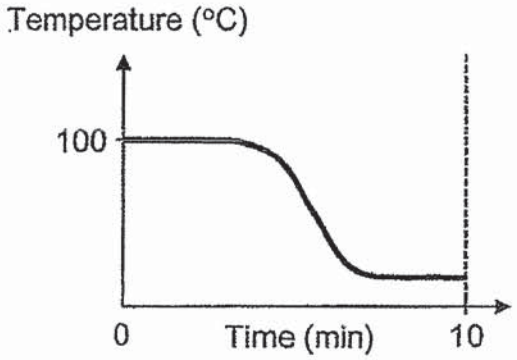
What are substances W and Y and processes X and Z?

	W	Y	process X	process Z
(1)	water vapour	water bodies	condensation	evaporation
(2)	water bodies	water vapour	evaporation	condensation
(3)	water vapour	water vapour	condensation	evaporation
(4)	water bodies	water bodies	evaporation	condensation

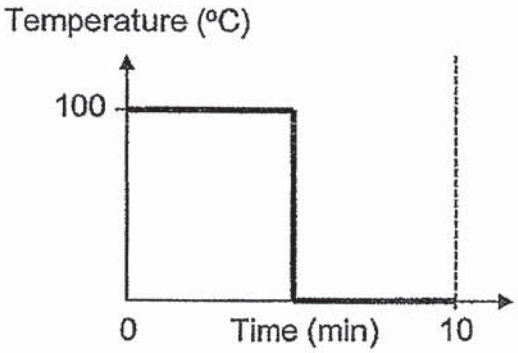
28. Hashim poured some boiling water into a glass container and immediately added some ice cubes. Which of the following graphs show the possible changes in temperature of the water in the container over a period of 10 minutes?



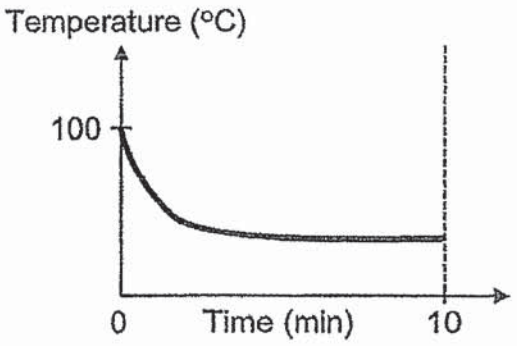
(1)



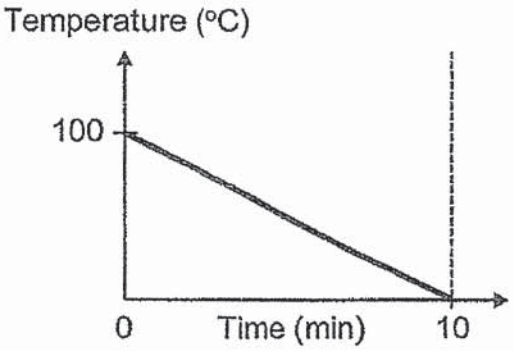
(2)



(3)



(4)



END OF BOOKLET A

Name : _____ ( )

Class : Primary 5 _____

CHIJ ST NICHOLAS GIRLS' SCHOOL

Primary 5

End-Year Assessment

SCIENCE

BOOKLET B

29 October 2020

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

13 questions
44 marks

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

This booklet consists of 13 printed pages.

Booklet A	/56
Booklet B	/
Total	/100

_____

Parent's Signature/Date

Section B (44 marks)

For questions 29 to 41, 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.

29. Boon Tong carried out three different activities P, Q and R. He measured his heart rate and breathing rate after completing each activity. He recorded the readings in the table below.

Activity	Heart rate (units/min)	Breathing rate (units/min)
P	65	30
Q	75	38
R	115	50

(a) What is the relationship between heart rate and breathing rate? [1]

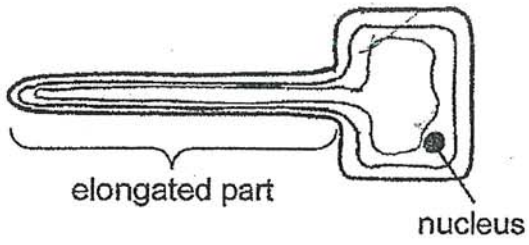
_____

(b) What can you say about Boon Tong's heart rate during activity R, compared to during other activities? Explain why. [2]

_____

_____

30. The diagram below shows a plant cell.



(a) Name the part of the plant that the cell can be found. [1]

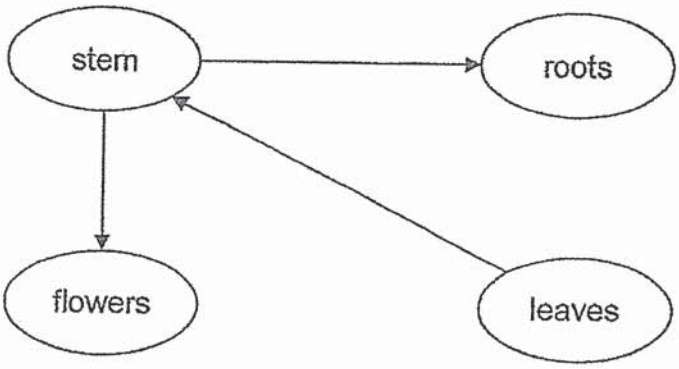
_____

(b) Why does the cell have an elongated part? [2]

_____

_____

31. The arrows show the movement of a material/substance within the plant transport system.



(a) What is the material/substance being transported? [1]

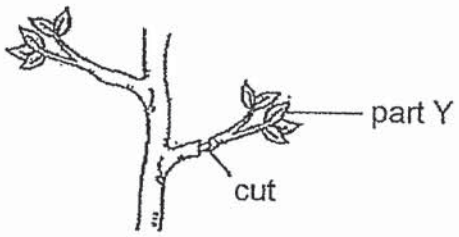
_____

(b) Name the two tubes involved in the transportation of materials/substances in the plant system. [1]

(i) _____

(ii) _____

A cut was made on the branch of a plant as shown below.



(c) After some time, part Y was observed to have wilted. What could be the reason for this observation? [1]

_____

_____

32. The table below shows the genetic characteristics of four different persons.

	Person			
Characteristic	**A**	**B**	**C**	**D**
Type of eyelid	single	double	single	double
Ability to roll tongue	no	yes	yes	yes
Fingernail length	long	long	long	short
Hair colour	black	brown	black	brown

(a) Based on the table, which two persons are most likely identical twins? Explain your answer. [1]

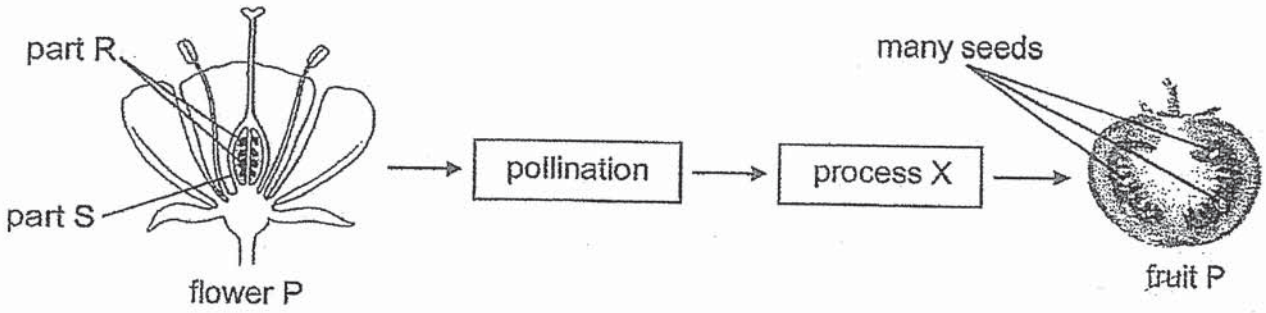
_____

_____

(b) Besides the characteristics mentioned in the table, name one **<u>other</u>** characteristic that can be passed down from parents to their young. [1]

_____

33. The diagram below shows how a fruit P is formed from the flower of plant P. Fruit P has been cut open.



(a) State and describe process X. [1]

_____

_____

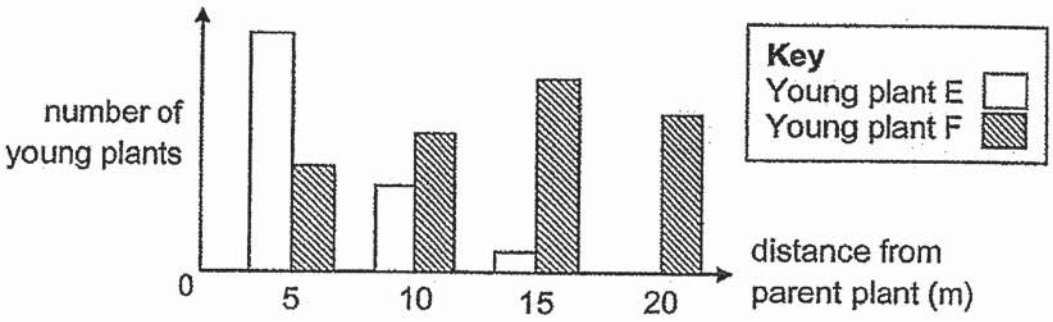
(b) During process X, parts R and S of the flower undergo some changes to form some part(s) of fruit P. Complete the table below to show the changes to these parts. [1]

Part of Flower P (before process X)	Part of Fruit P (after process X)
R	
S	

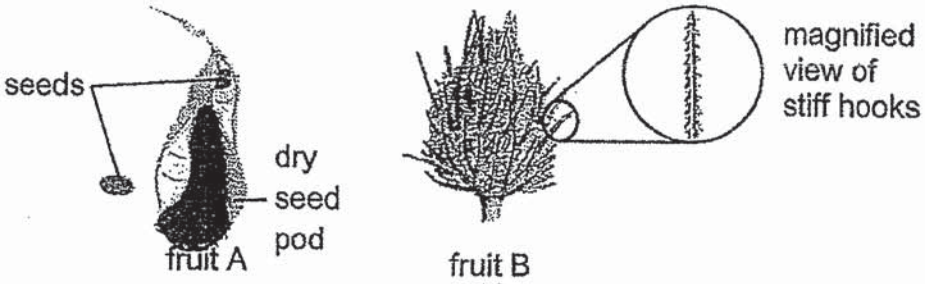
(c) Name a fruit or plant which goes through the same process as plant P. [1]

_____

34. Devi counted the number of two different types of young plants E and F at various distances from their respective parent plants in a park. She recorded the results in the graph below.



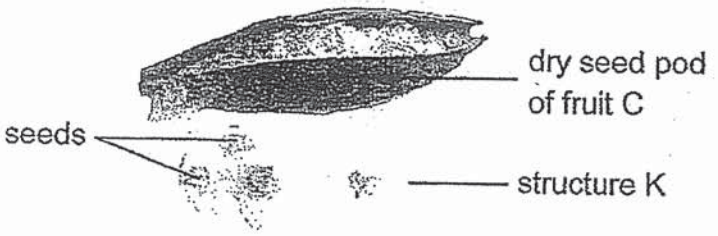
Study the two fruits below carefully.



(a) Which fruit A or B, is most likely to be the fruit of plant E? Explain your answer. [2]

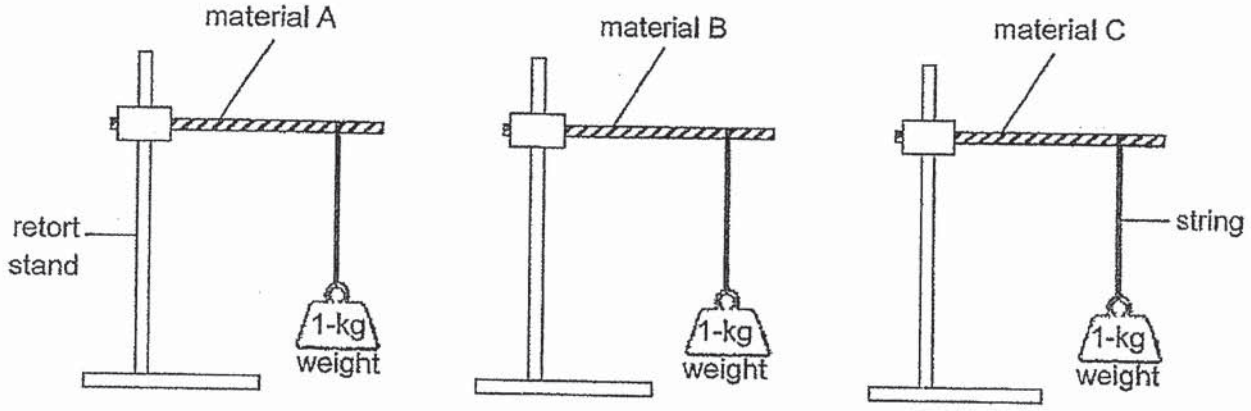
(b) Devi also noticed that the young plants of plant F grew more healthily than those of plant E. Explain this observation. [1]

She later found another type of fruit C as shown below. Fruit C undergoes the same dispersal method as fruit A. Upon inspection, she noticed that fruit C has structure K.



(c) Explain how structure K helps fruit C to be dispersed further away from its parent plant as compared to fruit A. [1]

35. Fauzi wanted to test the flexibility of materials A, B and C. He used rods made of materials A, B and C for his investigation. He added weights of 1-kg to each rod as shown below.

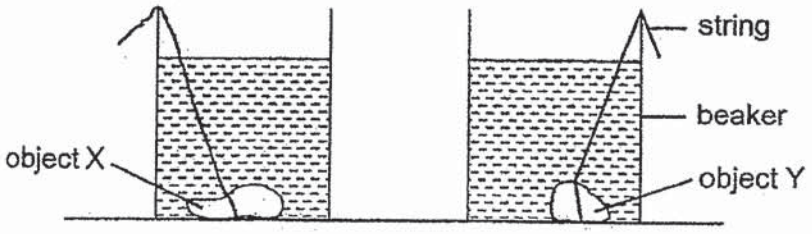


(a) Tick (✓) the variables that he must keep the same to ensure a fair test. [2]

Variable	Keep the same (✓)
length of the string	
length of the rod	
type of material	
thickness of the rod	

(b) What must he measure in order to compare the flexibility of the materials? [1]

36. The diagram below shows two identical beakers with two objects X and Y made of plasticine. The water levels in the two beakers are the same.



(a) If you are not allowed to use any other apparatus or to add or remove water from the beaker, describe how you can find out which object X or Y has a bigger volume. [2]

(b) Based on what you have done in (a), how can you tell if object X has a bigger volume than object Y? [1]

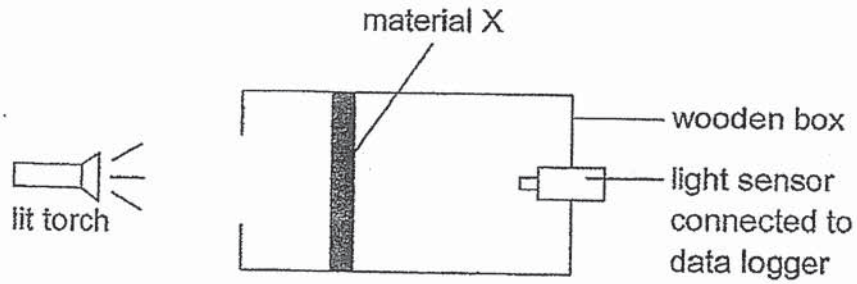
37. A boy has four pieces of metals P, Q, R and S. The table below shows the interaction between the metals when they are brought closed together.

Metals	Observation
P and Q	no attraction or repulsion
P and S	attraction
Q and S	attraction
R and S	no attraction or repulsion

(a) Based on his observations, which metal is most likely to be a magnet? [1]

(b) What conclusion can you make about metals P and Q? Explain your answer. [2]

38. A group of students wanted to investigate a property of three materials X, Y and Z. They placed material X in a wooden box as shown in the set-up below and recorded the amount of light detected by the light sensor.



They repeated the experiment with materials Y and Z of the same thickness. The amount of light detected by the light sensor is recorded in the table below.

Material	Amount of light detected (units)
X	0
Y	2500
Z	1000

(a) What property of the three materials are they investigating? [1]

_____

(b) A greenhouse is a place where plants are grown. If a farmer wants to build a greenhouse using one of the materials X, Y and Z, which material is the most suitable? Explain your answer. [2]

_____

_____

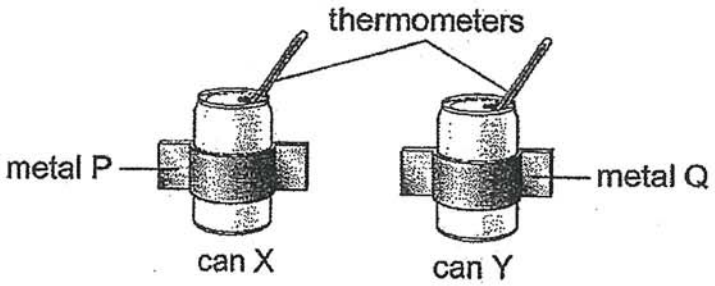
_____

(c) Is the moon a light source? Explain your answer. [1]

_____

_____

39. Ben filled two identical metal cans X and Y with 150 cm^3 of water at 80 °C. Next, he wrapped a strip of metal P around can X and another strip of metal Q around can Y, as shown in the diagram. The metal strips, which extended out of the cans, are of the same length and thickness. He then left his set-ups on a table in a room.



Ben recorded the temperature of the water in each can at 5-minute intervals for 25 minutes in the table below.

Time (min)	Temperature of water in the can (°C)	
	X	Y
0	80	80
5	64	60
10	53	47
15	45	36
20	36	31
25	?	31

(a) Based on the results of the experiment, state whether the following statements is **true (T), false (F)** or **not possible to tell (NP).** [2]

	Statement	T / F / NP
A	Can Y is a better conductor of heat than can X.	
B	Metal Q is a better conductor of heat than metal P.	
C	The temperature of water in can Y drops more quickly than that in can X.	
D	The water in can X gains heat more quickly from the surroundings than the water in can Y.	

(b) What could be the temperature of the water in can X at 25 minutes? Explain your answer. [2]

_____

_____

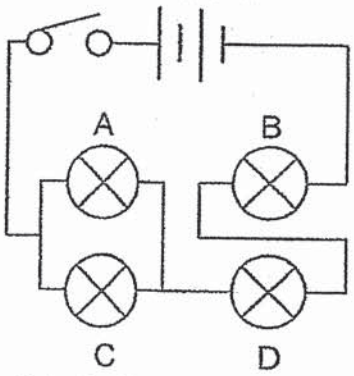
(c) Which materials P or Q is more suitable for making a frying pan? Explain your answer. [1]

_____

_____

40. Four identical bulbs A, B, C and D were connected in circuit 1 as shown below. All the bulbs lit up when the switch was closed.

circuit 1



(a) Haresh removed one light bulb from the circuit each time and observed what happened to the rest of the light bulbs. Complete the table below to show the number of bulbs remaining lit. [2]

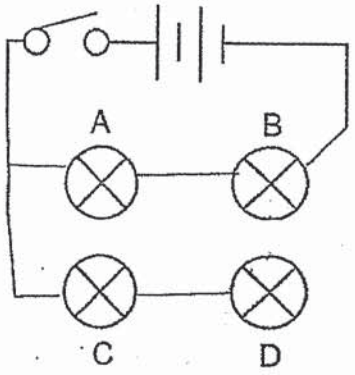
Bulb removed	No. of bulbs remaining lit
A	
B	
C	
D	

(b) Using only the same electrical components, Haresh rearranged circuit 1 into circuit 2 so that the bulbs will be lit as described in the table below.

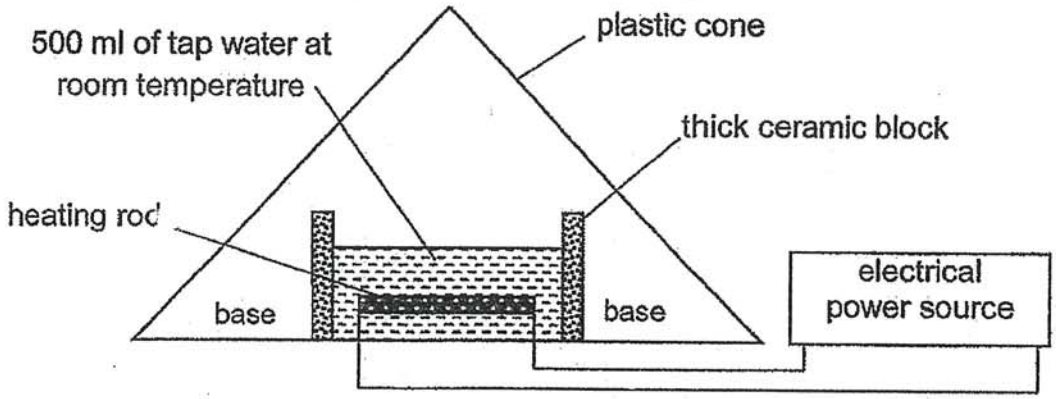
Bulb removed	Bulbs remaining lit
A	B, C and D
B	None
C	A and B
D	A and B

In the space below, complete the circuit so that it will work as described. [1]

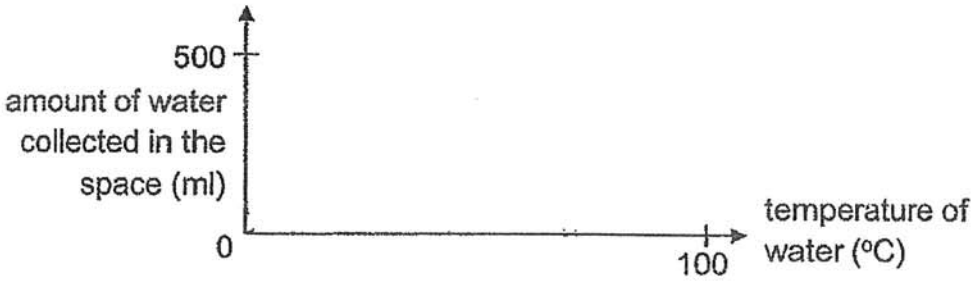
circuit 2



41. Anwen conducted an experiment using the set-up below to find out if the temperature of water affects the rate of water collected. Using a heating rod, she gradually increased the temperature of the water until it reached 100 °C. After 15 minutes, she saw that some water was collected at the base of the cone.



(a) Complete the graph below by drawing a line to show the relationship between the temperature of water and the amount of water collected at the base of the cone. [1]



(b) Explain how water was collected at the base of the cone. [2]

(c) Anwen placed some freshly baked buns in a plastic container as shown below. She left the plastic lid open for a while before closing it.

(i) State what can be observed about the condition of the buns when she closed the lid of the container after a while. [1]

(ii) Explain the observation in (c) (i). [1]

END OF PAPER

ANSWER KEY

YEAR : 2020
LEVEL : PRIMARY 5
SCHOOL : CHIJ
SUBJECT : SCIENCE
TERM : SA2

BOOKLET A

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

P5 EYA Science

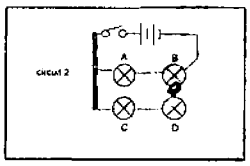
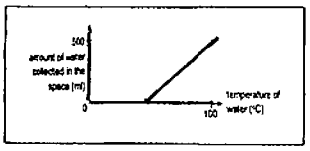
Name: _____ _____ Class ( ) Date: _____

Question	Common Misconception(s) / Error(s) / Common Issue(s)
29a	Generally well done. Pupils able to state relationship that when heart rate increase, breathing rate increases
29b	Did not state the full comparision of heart rate among the 3 activities. Key word is 'most'
30a	Generally well done
30b	fail to state that exposed surface area will lead to absorption of more water
31a	Generally well done
31b	Generally well done
31c	Did not mention that water could not be transported and cause wilting to occur. Some fail to mention the water carrying tube. Quite a few mentioned that foood cannot be transported.
32a	Fail to list down the characteristics from the given table. Many fail to state that genetic characteristics are passed down from the parents to the young.
32b	Generally quite well done except for a few who did not name other but list the given characteristic from the table. Most are able to identify the genetic traits/characterisitc and they must be inherited from parents
33a	Must state that the nucleus of the reproductive cells fuses. Some wrote the formation of fruits and seeds first before fertilisation.
33b	Generally well done
33c	Did not read the question stem. The fruits must have many seeds (uncountable). Many wote apple, which has only a few seeds.
34a	Lack of comparison between number of seeds between young plants E and F. Tends to use descriptions such as ' does do not travel too far from the parent plant.
34b	usage of 'prevent' overcrowding ...instead of 'reduce' / Some explained for plant E instead of plant F.
34c	most state just one function of structure K. Many restate the question stem as part of the answer : help the seeds dispersed further away from its parent plant. Many explained for 'Why' stucture K.... instead of 'how' the structure K
35a	Generally well done
35b	lack of the keyword the distance the material bent ' downwards'/ Usage of the word 'length' of material.Most think that the question is asking for 'strength' and provided answers ' how much weights the material can hold before it breaks'.
36a	Most unable to use water level as the measurement, many seem not to understand that the objects are already in the water.
36b	Generally if (a) is wrong, this follow-on is also not well done.
37a	Generally well done
37b	Mostly well answered except missing out on 'do not repel one another'. Some 'Nothing happened'
38a	Cannot write the property. Mosty wrote aim/ amount of light passing through.
38b	Did not mention about sufficient / more light to pass through. (Did not mention about the comparison of Y and Z.)
38c	Did not mention moon does not give off light.
39a	Mostly have A and D wrong.
39b	A lot did not write the units/ wrong units.
39c	Uses good conductor of heat instead. Also did not mention cook food faster.
40a	Generally well done. Some pupils mistook the 'no. of bulbs' for 'units of light (lux)'.
40b	Sizeable number of pupils were not able to complete the circuit to fit the conditions given in the table.
41a	Most pupils got the wrong start but correct trend.
41b	Some pupils had missing references (i.e. water vapour), missing concepts (i.e. lose heat). Some other pupils used the wrong concept to explain (i.e. water gained heat from the heating rod, expanded until it overflowed and spilled into the base)
41c	(i) Most either got this part wrong or had wrongly focussed on the lid instead of the buns. Some did not show comparison (i.e. 'wet buns' instead of 'the buns were less wet') (ii) Many pupils did not mention or explain about lesser water vapour from the buns leading to the lower rate of condensation.

BOOKLET B

SECTION B

Q29	a) The higher the heart rate, the higher the breathing rate. b) Heart rate is the highest. He needs to most energy when during activity R so his heart pumps fasters to deliver the most oxygen and digested food to all part of the body for higher rate of oxygen.
Q30	a) Root b) To increase the surface area so that more water can be absorbed.
Q31	a) Food b) i. water carrying tubes ii. food carrying tubes c) As a cut was made at the branch , the water could not go to part Y. The xylem were removed so water cannot be transported to part Y.
Q32	a) B and D as they both have double eyelids, same hair colour and able to roll their tongue which are characteristics that can be passed down. b) Skin colour
Q33	a) We never learnt to put nucleus , the only thing bout nucleus we learnt is it controls thing in the cell. The nucleus of the malt reproductive cell fuses with the nucleus of the female reproductive cell. b) R : seeds S : fruit c) Strawberry
Q34	a) Fruit A as is dispersed by explosive this results in more seeds found closer to the parent plant. b) As the seed of plant F were dispersed farther away from the parent plant , this reduces overcrowding and competition for space , water and sunlight. c) Structure K and fruit A albus the seeds to stay in the air so that it can be carried water away from the wind from the parent plant.
Q35	a) Length of the string , length of the rod , thickness of the rod b) He must measure how much QR how far is the distance for the material to breaks.

Q36	a) Romove the two object from the beakers by pulling the string tied to each object and compare the water levels in the 2 beakers. b) The water levels in the beakers with object Y is higher than the water level in the beaker with object X.
Q37	a) S b) They are magnetic material. They do not attract or repel each other which show that they are not magnets.
Q38	a) If it is opaque , translucent or transparent. b) Y , it allows the most light to pass through so the plants will have enough sunlight to carry out photosynthesis. c) It does not give off light. It shines because its surface reflects light from the sun.
Q39	a) A : F B : T C : T D : F b) 31 °c , as it will reach room temperature after 25 minutes. c) Q , as it is a better conductor of heat than P. And you would want a frying pan to be hot to cook faster.
Q40	a) A : 3 B : 0 C : 3 D : 0 b) 
Q41	a)  b) The water gains heat from the heating rods and evaporates to form water vapour. c) i. The buns will not be soggy. ii. When the buns are cooler, less water will be condensed to form lesser water droplets. Which may drip back on to the buns when the lid is closed.