Marks: /100

Thematic Assessment 3

Systems

Name: _____ Class: _____ Date: _____

Section A (30 x 2 = 60 marks)

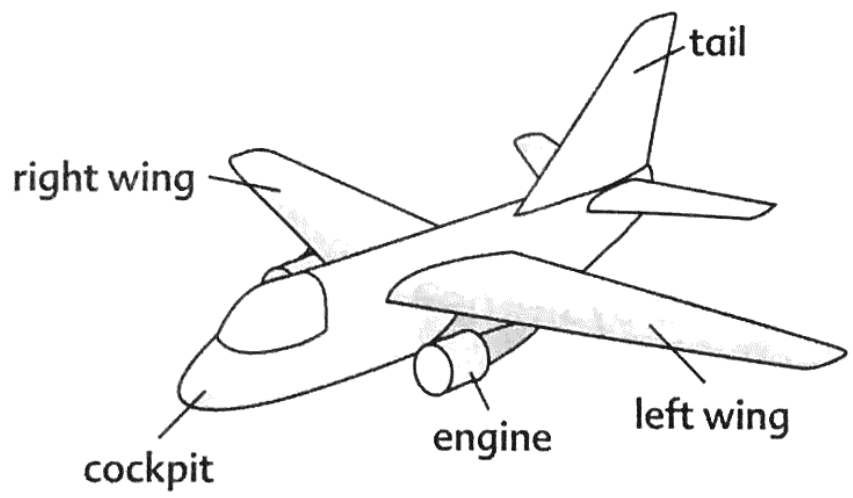
For each question, four options are given. Choose the correct answer and write down your choice, 1, 2, 3 or 4, in the brackets provided.

1. Which of the following are essential parts of the computer system?

   (A) CPU
   (B) Monitor
   (C) Printer
   (D) Keyboard

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

2. The following shows the parts of a plane system.

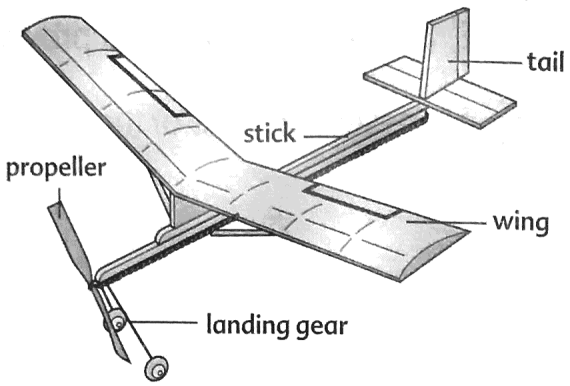


The (a) _____ push(es) the plane forward while the (b) _____ help(s) it glide in the air.

	(A)	(B)
(1)	Cockpit	Left and right wings
(2)	Engines	Left and right wings
(3)	Cockpit	Tail
(4)	Engines	Tail

( )

3. May makes the following model of a plane. Which of the following parts have to function in order for the model plane to fly?



(A) Propeller
(B) Stick
(C) Wings
(D) Tail

( )

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

( )

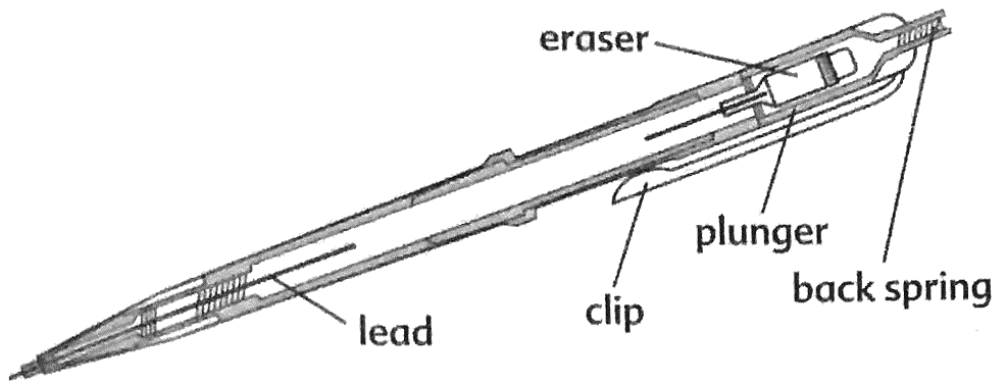
4. Which of the following are systems?

(A) A coin
(B) A pair of glasses
(C) An animal
(D) A stone

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

( )

5. The diagram shows a mechanical pencil.



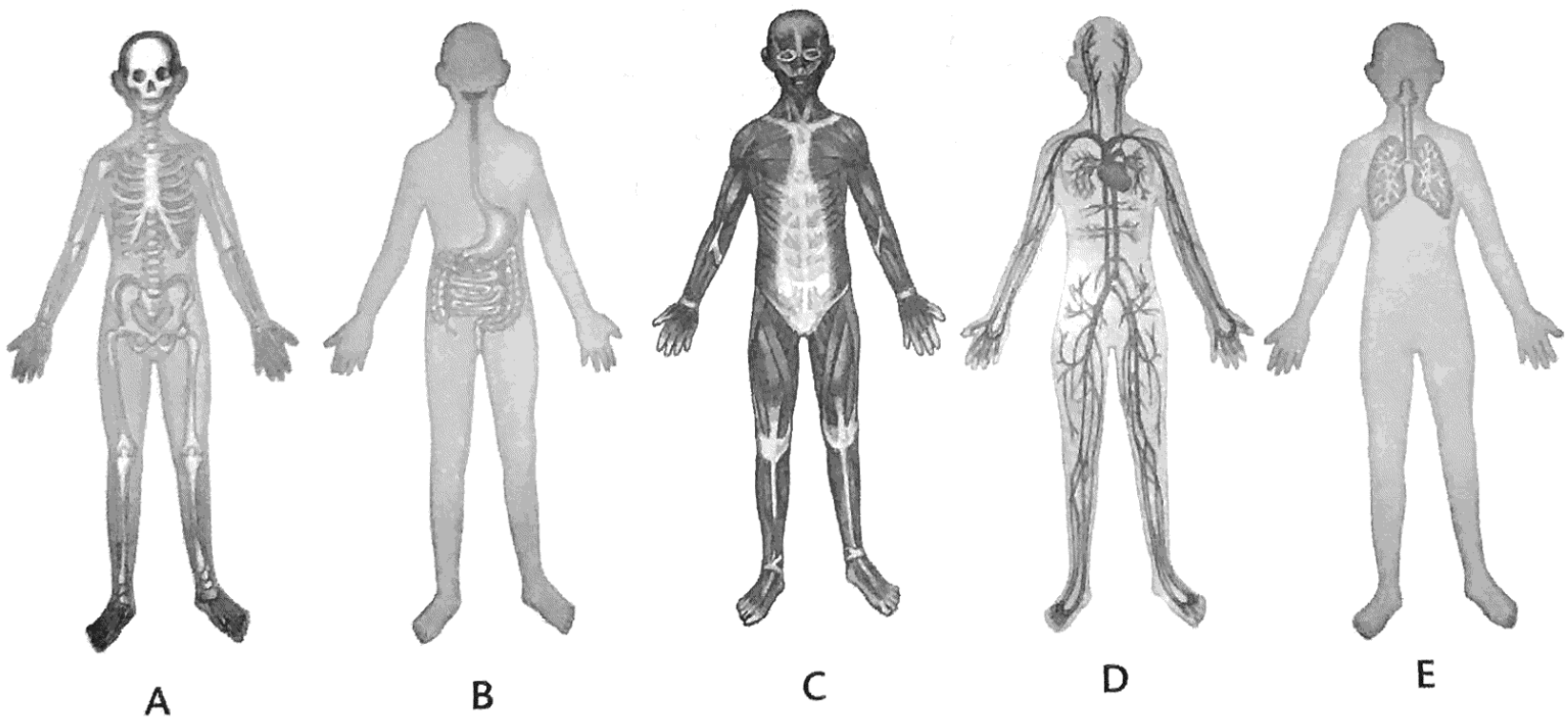
Which of the following parts, when removed from the mechanical pencil, will prevent the pencil from fulfiling its main function?

(A) Back spring
(B) Clip
(C) Eraser
(D) Plunger

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

( )

6. A page of a science book illustrates the following body systems.



Which of the above two systems work together to produce movement of the limbs?

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

( )

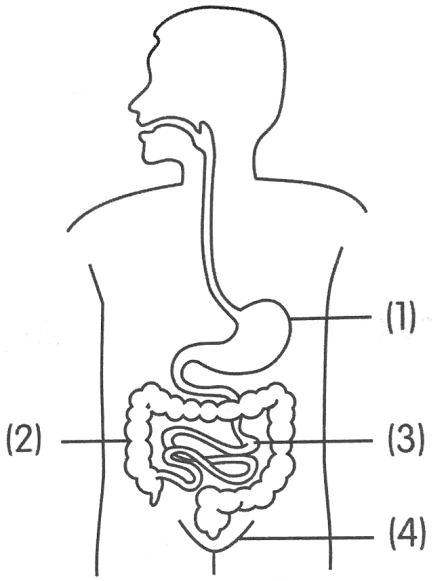
7. Which are parts of a green plant?

(A) Leaf
(B) Stem
(C) Flower
(D) Fruit

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

(

8. The diagram below shows the digestive system. In which part does absorption of water take place?



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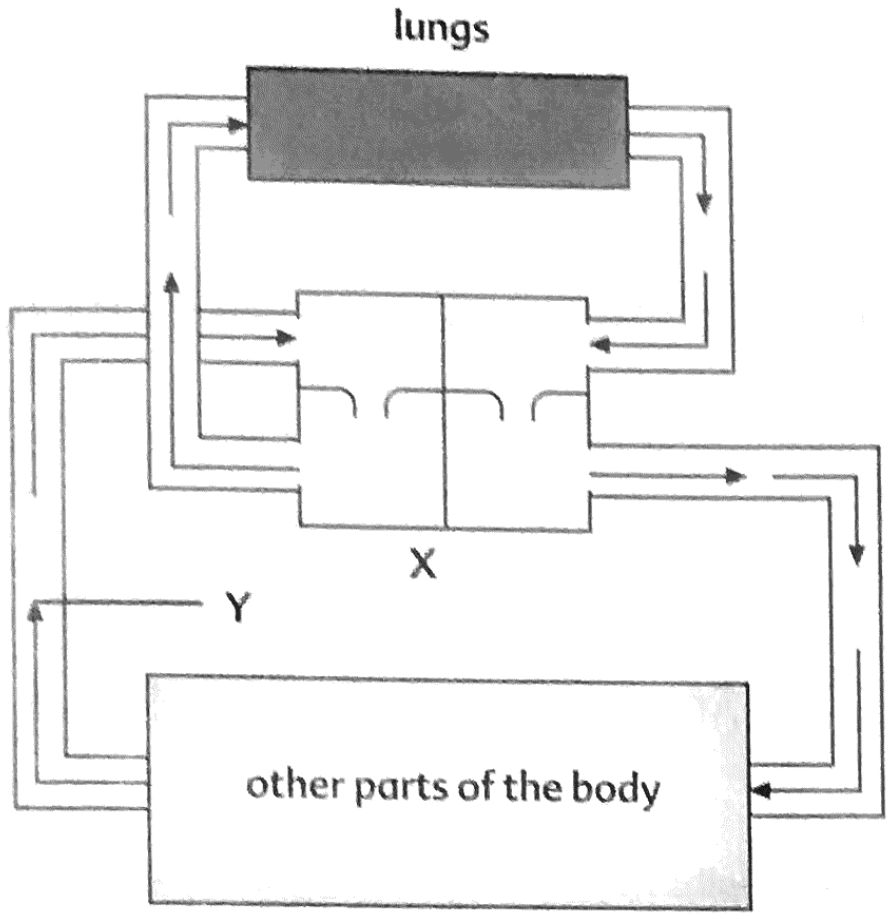
The following shows a simplified diagram of a system in the human body. Questions 9 to 11 refer to this diagram.



9. The diagram shows the _____ system.

   (1) circulatory
   (2) respiratory
   (3) digestive
   (4) skeletal ( )

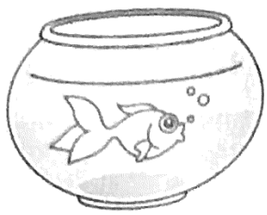
10. What is X?

   (1) Nose
   (2) Stomach
   (3) Heart
   (4) Muscle ( )

11. What is substance Y flowing in the system?

   (1) Air
   (2) Blood
   (3) Mucus
   (4) Food ( )

12. A fish is swimming in the following fish bowl.



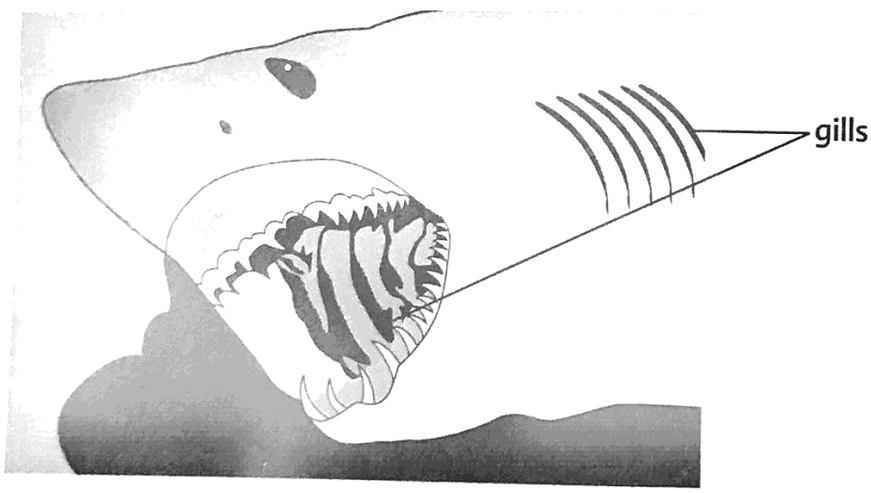
Which of the following can be used to introduce more dissolved oxygen into the water?

(A) Stones
(B) Air pump
(C) Hydrilla
(D) Another fish

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

( )

13. Sharks use gills to take in dissolved oxygen from the water.



Gills are part of the _____ system of sharks.

(1) circulatory
(2) respiratory
(3) digestive
(4) skeletal

( )

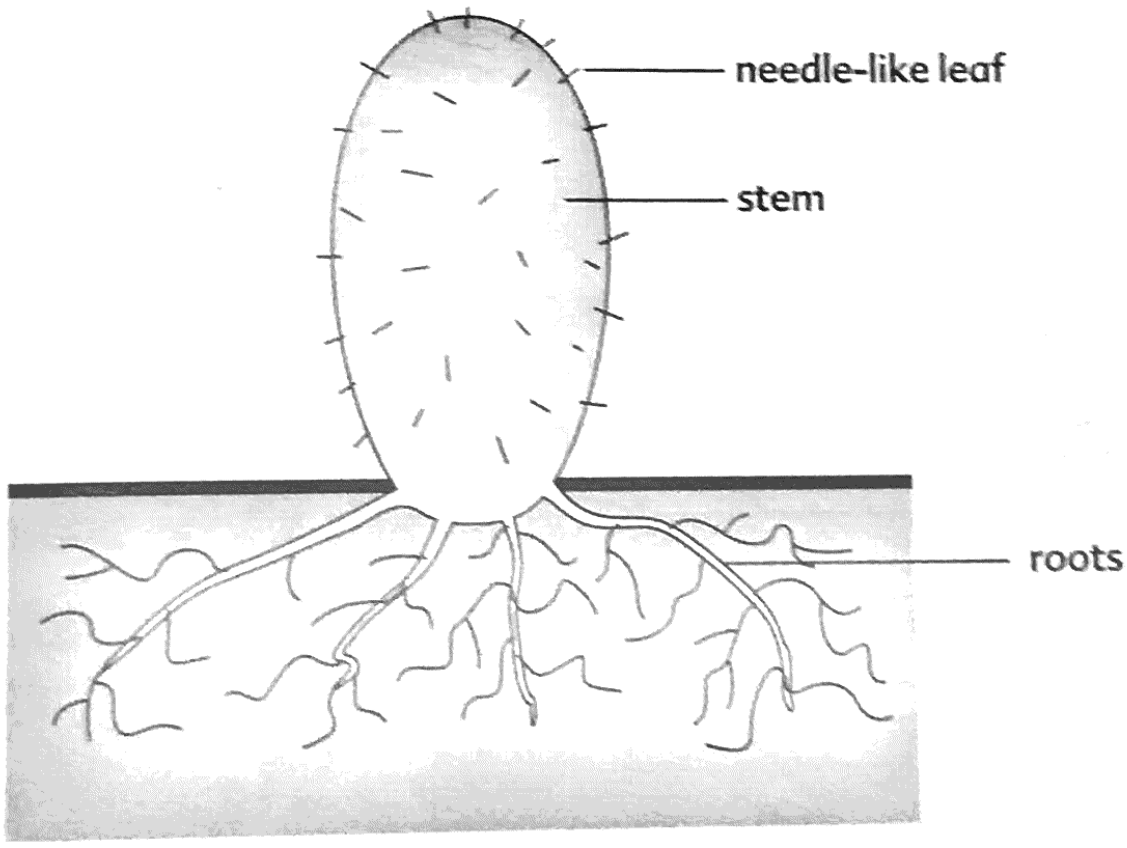
14. Which of the following will turn blue-black when iodine is added to them?

(A) Tapioca paste
(B) Orange juice
(C) Fish meat
(D) Congee (porridge)

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

( )

The following shows a cactus. Questions 15 and 16 refer to this diagram.



15. It has a large network of (a) _____ to collect as much (b) _____ as possible.

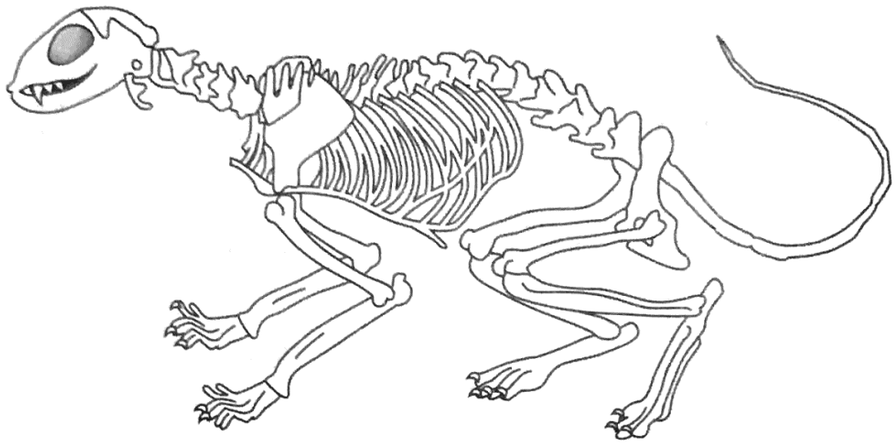
	(a)	(b)
(1)	needle-like leaves	oxygen
(2)	needle-like leaves	water
(3)	roots	oxygen
(4)	roots	water

( )

16. To reduce water loss in the dry desert climate, the cactus has needle-like leaves. How can it make its own food like other plants with normal leaves?

(1) Its roots can absorb a lot of nutrients from the sand.
(2) Its needle-like leaves can kill insects and suck nutrients from them.
(3) The chlorophyll on its stem can trap light energy and make food.
(4) It does not need food to survive. ( )

17. The following diagram is taken from a science book.

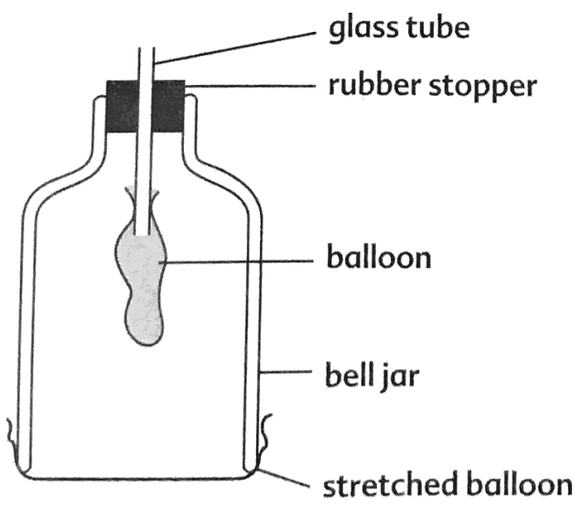


It shows the (a) _____ system of a (b) _____.

	(a)	(b)
(1)	muscular	cat
(2)	skeletal	frog
(3)	muscular	frog
(4)	skeletal	cat

( )

18. Tommy has made the following model of a human system. Which system does his model represent?



(1) Circulatory system
(2) Respiratory system
(3) Digestive system
(4) Skeletal system ( )

19. Which organs are parts of the digestive system?

(A) Brain
(B) Stomach
(C) Small intestine
(D) Large intestine

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

20. Joe does the following experiment:

- He crumbles a cracker onto Plate 1 and adds a drop of iodine.
- Then he takes another cracker and chews it in his mouth five times before spitting the chewed-up cracker onto Plate 2. Next, he puts a drop of iodine on the cracker on Plate 2.

Which of the following observations will Joe make?

(1)

	Crumbled cracker on Plate 1	Chewed-up cracker on Plate 2
Colour of cracker + iodine	Brown	Brown

(2)

	Crumbled cracker on Plate 1	Chewed-up cracker on Plate 2
Colour of cracker + iodine	Blue-black	Blue-black

(3)

	Crumbled cracker on Plate 1	Chewed-up cracker on Plate 2
Colour of cracker + iodine	Blue-black	Brown

(4)

	Crumbled cracker on Plate 1	Chewed-up cracker on Plate 2
Colour of cracker + iodine	Brown	Blue-black

( )

Ling performs an experiment on a certain type of indoor plant. Questions 21 and 22 refer to the following results from Ling's experiment.

Plant group	Amount of light per day (hours)	Average growth in one week (centimetres)
 (1)	4	1
 (2)	6	4
 (3)	8	6
 (4)	10	3

21. What conclusion can Ling draw from her results?

(1) The more the amount of light, the faster the plants grow.
(2) The lesser the number of plants placed together, the faster they grow.
(3) The plants grow best with eight hours of light per day.
(4) The plants can only grow in indoor settings. ( )

22. Which variables must she keep constant to make her experiment fair?

(A) Amount of water.
(B) Type and amount of soil.
(C) Type of plants.
(D) Colour of light.

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

23. What are the functions of the stomach?

	Food crushed	Food digested	Food absorbed into bloodstream
(1)	Yes	No	No
(2)	Yes	Yes	No
(3)	Yes	Yes	Yes
(4)	No	No	Yes

( )

24. What are the functions of the small intestine?

	Food digested	Food absorbed into bloodstream
(1)	Yes	Yes
(2)	Yes	No
(3)	No	Yes
(4)	No	No

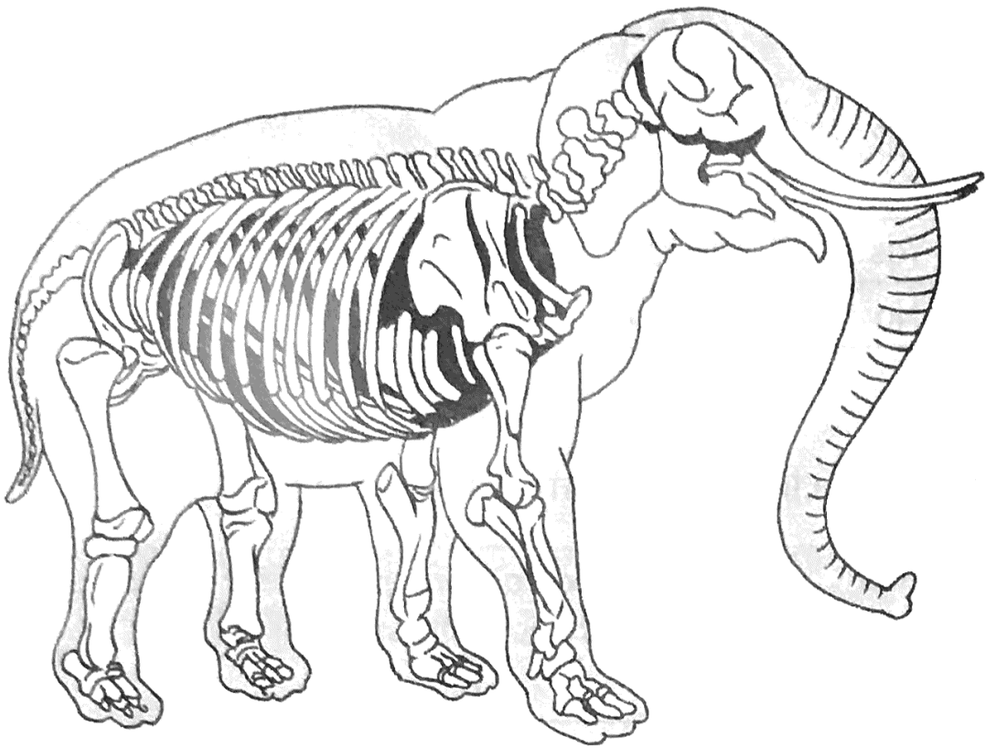
( )

25. What are the functions of the large intestine?

	Food digested	Food absorbed into bloodstream	Water absorbed into bloodstream
(1)	No	No	No
(2)	No	No	Yes
(3)	No	Yes	Yes
(4)	Yes	Yes	Yes

( )

26. The following diagram shows a body system of an elephant.



How does an elephant curl its trunk?

(1) By means of the skeletal system.
(2) By means of the muscular system.
(3) By means of the skeletal and muscular systems working together.
(4) By means of the respiratory system. ( )

27. What is the function of leaves?

(1) To hold the plant upright and reach out for sunlight.
(2) To absorb water and minerals.
(3) To receive light energy to make food.
(4) To reproduce. ( )

28. Which of the following statements about Systems is true?

(A) Systems are found in both living and non-living things.
(B) Systems are made up of parts which work together to perform a function.
(C) A system will not function properly if one or more parts are missing.
(D) The nose, windpipe, heart, brain and lungs form our respiratory system.

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

29. Which of the following is not a function of the skeletal system?

(1) Protects the internal organs.
(2) Helps in movement.
(3) Ensures the removal of waste products.
(4) Gives the body shape. ( )

30. Which of the following takes place after food is completely digested?

(1) It passes from the stomach to the small intestine.
(2) It passes from the small intestine to the large intestine.
(3) It is carried by the blood to all parts of the body.
(4) It passes out of the body through the anus. ( )

Section B (40 marks)

Write your answers for each question in the blank spaces provided.

31. Peter is blind. All his other sense organs are working normally. For each case, state whether he is able to tell the difference between the two given items. Explain your answers.

(a) Green tea and iced orange juice. [1]

_____

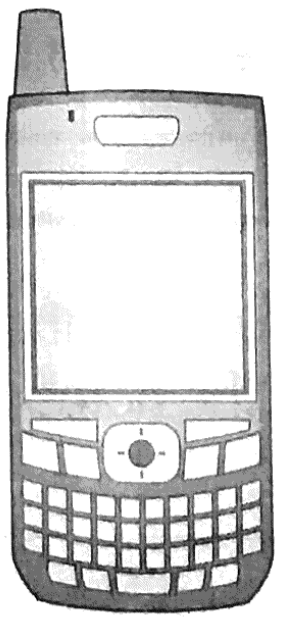
(b) A floral perfume spray and an insecticide spray. [1]

_____

(c) A red magic pen and a green magic pen from the same box of magic pens. [1]

_____

32. The following shows a mobile phone.



(a) Why is the mobile phone an example of a system? [1]

_____

(b) Name three parts of the system and state their functions. [3]

	Part	Function
(i)		
(ii)		
(iii)		

(c) The following shows a notebook.

State two similarities between a mobile phone and a notebook. [2]

Similarity 1: _____

Similarity 2: _____

(d) For a mobile phone, each key on the key pad can contain a number of characters such as those shown below.

1	2abc	3def

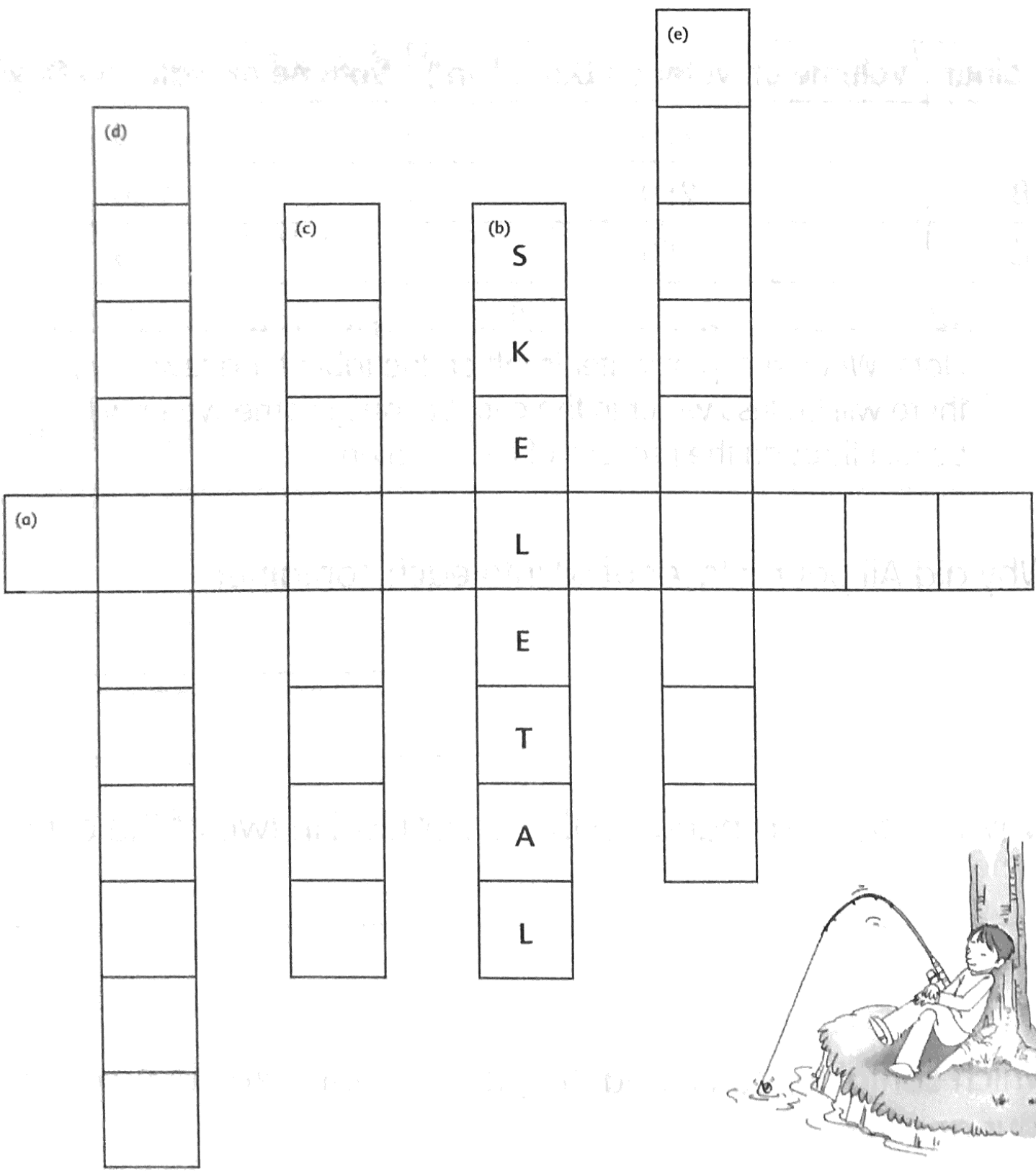
Give one reason why the keys on the key pad of a mobile phone are not made like the keys on the notebook. [1]

_____

33. The crossword puzzle below contains the names of the different body systems. Use the clues in the table below to complete the crossword puzzle. (b) has been done for you.

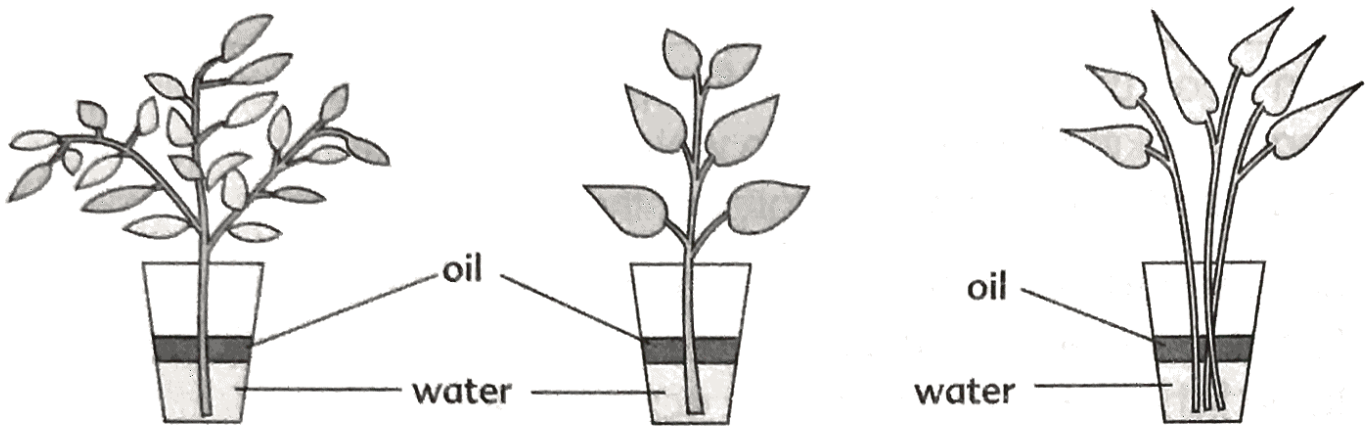
	Clues
(a)	Ben rested while fishing. Suddenly the fish line tightened. Ben became excited. His heart beat faster.
(b)	Ben stood up at once. The fish line pulled with even stronger force, nearly making Ben fall into the water. He maintained his balance and stood firm against the force of the fish line.
(c)	Ben exerted all his force in his arm muscles to pull the fish line. The tug of war went on for a long time before he managed to pull a large fish up. His muscles were aching by then.
(d)	Ben was very tired. He panted very hard for air.
(e)	Ben barbecued the fish and had a satisfying meal. He belched.

[4]



34. Ahmad said, "All living things need water to survive." Ali did not believe this statement and did the following experiment:

Ali placed one plastic plant and two real plants into three identical containers, A, B and C. He filled each container with 250 cm^3 of water. Next he poured a layer of oil into each container.



After one week, Ali recorded the volume of water in each container and tabulated his readings as shown.

Container	Volume of water on Day 1 (cm^3)	Volume of water on Day 7 (cm^3)
A	250	230
B	250	250
C	250	225

Note: When a cup of water is left on the table for a few days, there will be less water in the cup, because some water will be lost through the process of evaporation.

(a) Why did Ali pour a layer of oil into each container? [1]

(b) Why was there a change in the water level in two of the containers? [1]

(c) Which container contained the plastic plant? Explain how you got your answer. [2]

(d) What can Ali conclude from his experiment? [1]

Ahmad said, "Your experiment does not change what I think."

Ali said, "Why? My experiment is a fair one."

Ahmad said, "Your experiment does not show that living things will die without water."

(e) Is Ahmad's last statement true? Why? [3]

35. Circle TRUE or FALSE for each statement. [4]

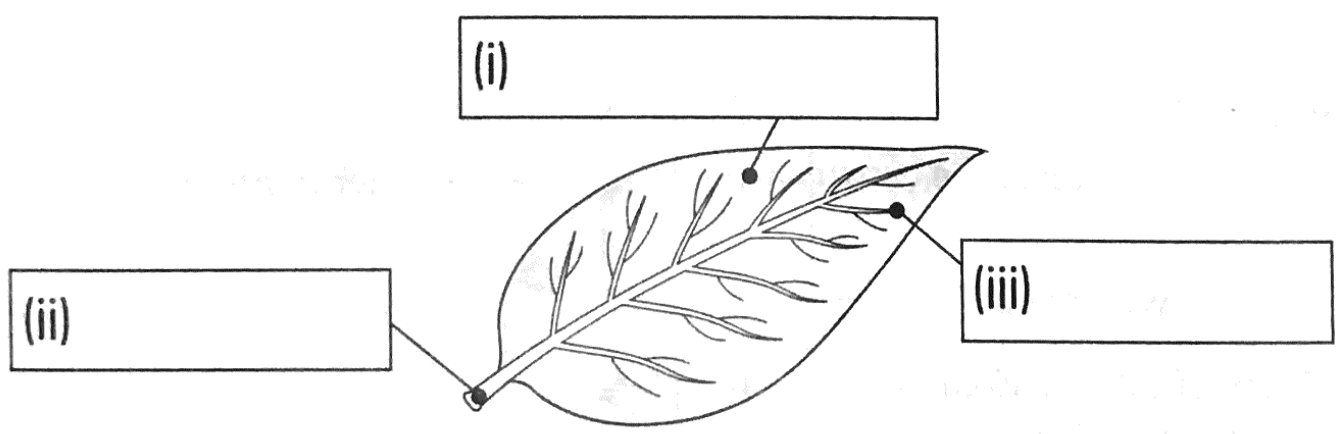
(a) All living things are systems. TRUE / FALSE

(b) All animals use lungs to breathe. TRUE / FALSE

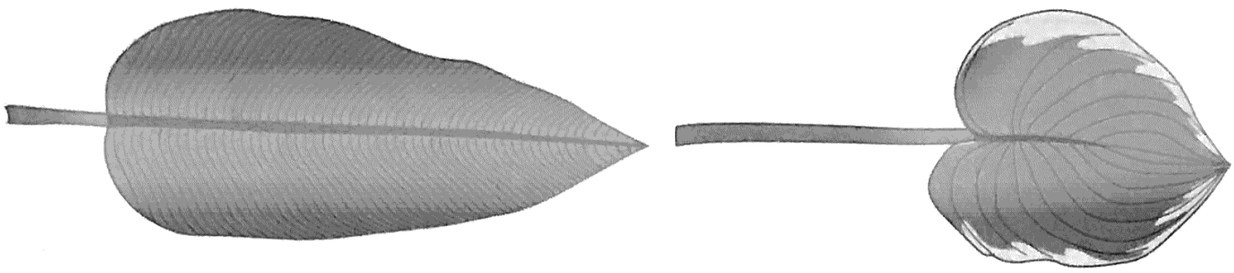
(c) The heart is part of the digestive system. TRUE / FALSE

(d) Chlorophyll traps energy from light. TRUE / FALSE

36. (a) Label the three parts of the leaf below. [3]



(b) Here are leaves of two different tropical plants.



State one similarity and two differences between the leaves. [3]

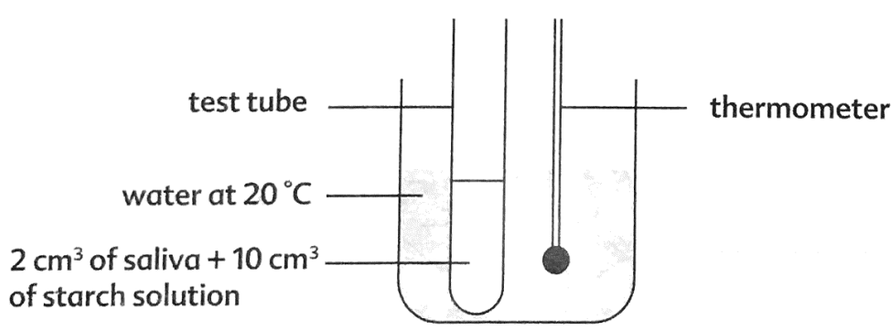
Similarity	
(a) _____	

Bird of paradise leaf

Hosta leaf

Two differences	
(a) _____	_____
(b) _____	_____

37. Sam added 2 cm^3 of saliva to 10 cm^3 of starch solution at 20 °C as shown below.



Every 30 seconds, Sam takes out a drop of liquid from the test tube and tests it for starch with iodine solution. Iodine turns blue-black if starch is present, and remains brown if starch is absent.

Sam then repeated his experiment, this time at 40 °C. The following are his results.

Time (s)		30	60	90	120	150	180	210
Colour of the iodine test	20 °C	Blue-black	Blue-black	Blue-black	Blue-black	Blue-black	Blue-black	Brown
	40 °C	Blue-black	Blue black	Blue-black	Brown	Brown	Brown	Brown

(a) In the human body:

(i) Where is saliva found? [1]

(ii) What is its function? [1]

(b) In Sam's experiment, when did the iodine stop turning blue-black at:

(i) 20 °C? [1]

(ii) 40 °C? [1]

(c) Why did the iodine stop turning blue-black? [2]

(d) Which temperature, 20 °C or 40 °C, is the better temperature for saliva to act on starch? Explain your answer. [2]

End of Paper

Test 8 Interactions

Marks: /50

Topics:

- Magnets and their characteristics
- Making magnets
- Magnets, magnets, everywhere

Name: _____ Class: _____ Date: _____

Section A (15 x 2 = 30 marks)

For each question, four options are given. Choose the correct answer and write down your choice, 1, 2, 3 or 4, in the brackets provided.

1. Which one of the following is attracted to a magnet?

   (1) Plastic keychain
   (2) Wooden ruler
   (3) Steel tie pin
   (4) Eraser

   ( )

2. Which direction will a freely hung magnet point to?

   (1) North–South
   (2) South–East
   (3) East–West
   (4) West–North

   ( )

3. Which of the following is true about a magnet?

   (A) Magnets attract magnetic materials.
   (B) All magnets have two poles — north and south.
   (C) Like poles of a magnet attract.
   (D) Magnets can only be made from iron.

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

   ( )

4. Which of the following actions will destroy a magnet?

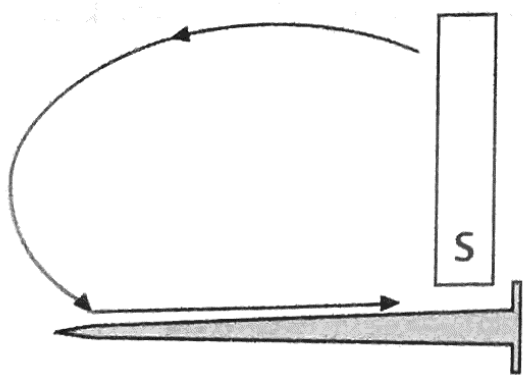
(1) Dropping it once.
(2) Hammering it many times.
(3) Putting it in ice.
(4) Letting it interact with non-magnetic materials. ( )

5. What are lodestones?

(A) Natural magnets
(B) Temporary magnets
(C) Permanent magnets
(D) Special stones

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

6. A magnet was used to stroke nails made of four different materials.

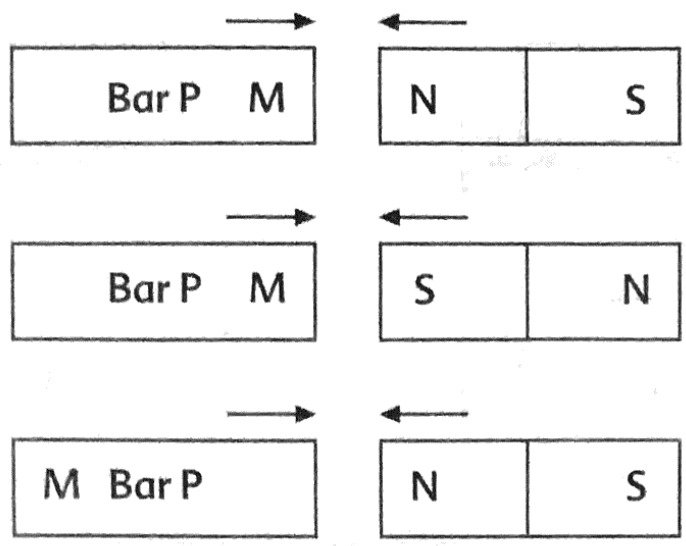


Which of the following will become a magnet?

(A) Copper nail
(B) Iron nail
(C) Steel nail
(D) Nickel nail

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

7. The following experiment was set up to find out the identity of bar P.



Bar P was pulled towards the magnet in all three set-ups.
Which of the following is a probable conclusion for the experiment?

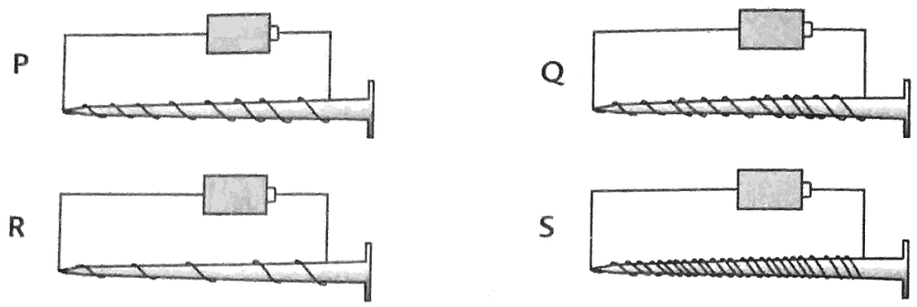
(A) Bar P is a magnet.
(B) M is the south-pole of Bar P.
(C) Bar P is made of magnetic material.
(D) The magnet used in the experiment is not functioning properly.

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

8. Which of the following is not a use of magnets?

(1) To keep lids closed in bags.
(2) To enable compasses to work.
(3) To separate good conductors of heat from poor conductors of heat.
(4) To enable ATM cards to store information. ( )

9. Study the experimental set-up below.

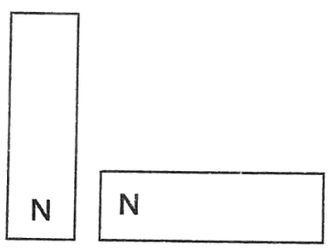


Which of the following represents the magnetic strength of the nail, from the weakest to the strongest?

(1) SPQR
(2) RPQS
(3) PQRS
(4) QRSP

( )

10. Two bar magnets are placed near each other as shown in the diagram.

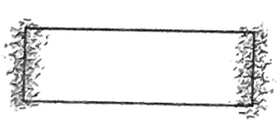


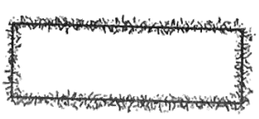
What would the reactions of the magnets be?

(1) They will attract each other.
(2) They will repel each other.
(3) Nothing will happen.
(4) They will move towards the left.

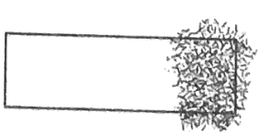
( )

11. Which of the following shows the response of a bar magnet which is placed near iron filings?

(1) 

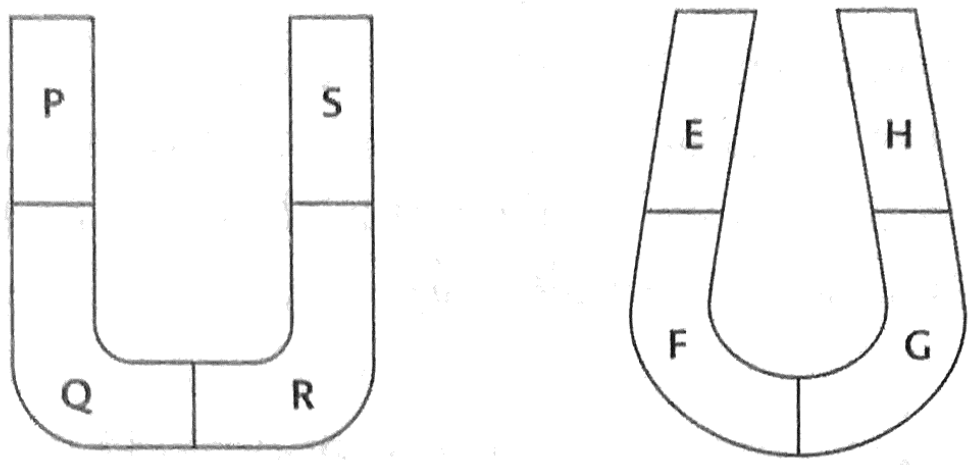
(2) 

(3) 

(4) 

( )

12. The diagram below shows a U-shaped magnet and a horseshoe magnet.

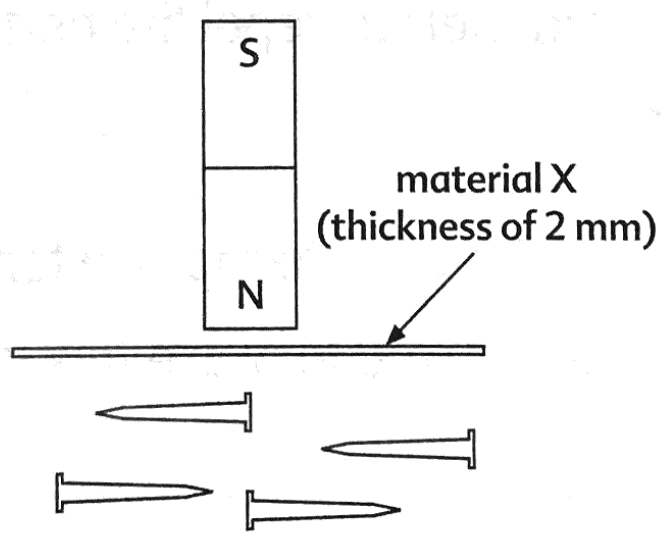


Which parts of the magnets have the strongest magnetic force?

	U-shaped magnet	Horseshoe magnet
(1)	PQ	EF
(2)	QR	FG
(3)	SR	HG
(4)	PS	EH

( )

13. Walter owns a very powerful magnet. He wanted to know which material, when placed between his magnet and the iron nails, will allow the magnet to attract the nails.



Note. A magnetic material will block the magnetic force of a magnet.

Which of the following is likely to be material X?

(A) Paper
(B) Plastic sheet
(C) Plywood
(D) Glass

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

( )

14. Electromagnets are used to separate objects in dump yards. Which of the following explains why this is possible?

(1) Electromagnets are made of strong metals.
(2) Electromagnets are able to attract magnetic objects.
(3) Electromagnets allow electricity to pass through them.
(4) Electromagnets have one pole only. ( )

15. Which of the following mixtures may be separated by a magnet?

(1) Needles and iron nails.
(2) Copper and aluminium strips.
(3) Steel pins and sand.
(4) Plastic buttons and beans. ( )

Section B (20 marks)

Write your answers for each question in the blank spaces provided.

16. Circle TRUE or FALSE for each statement. [3]

(a) A horseshoe magnet has two poles. TRUE / FALSE

(b) A magnet may be made from any metal. TRUE / FALSE

(c) The north-pole of a magnet will repel the north-pole of another magnet. TRUE / FALSE

17. The electrical method may be used to make a temporary magnet.

(a) What three things are required to make this temporary magnet? [1]

_____

(b) What is the name of a magnet made using the electrical method? [1]

_____

(c) Explain how you can test if an iron rod has been magnetised. [2]

_____

_____

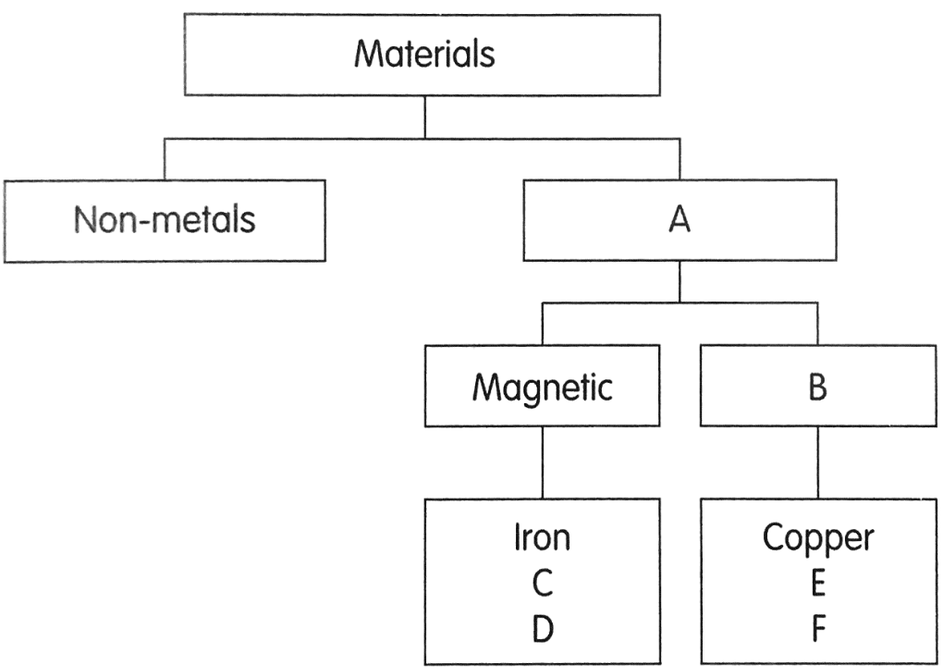
(d) Suggest two ways to increase the magnetic strength of the iron rod. [2]

_____

_____

18. You are given some iron nails and four bar magnets. In the space below, explain how you could conduct an experiment to find out which magnet is the strongest and which is the weakest. [3]

19. Study the graphic organiser below.



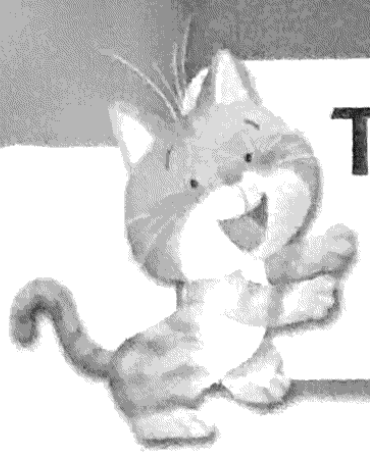
What could A, B, C, D, E and F be? [6]

A: _____ D: _____

B: _____ E: _____

C: _____ F: _____

End of Paper



Thematic Assessment 4

Interactions

Marks: /100

Name: _____ Class: _____ Date: _____

Section A (30 x 2 = 60 marks)

For each question, four options are given. Choose the correct answer and write down your choice, 1, 2, 3 or 4, in the brackets provided.

1. Which one of the following are not magnetic materials?

   (A) Copper
   (B) Steel
   (C) Iron
   (D) Aluminium

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

2. Soo Feng bought a souvenir during her recent holidays. It was a colourful metallic brooch. When she brought the north-pole of her bar magnet near the brooch, nothing happened. Which of the following could be the reason?

   (1) The pole of the magnet used was incorrect.
   (2) The colours on the brooch prevented the magnet from attracting it.
   (3) The brooch was made of non-magnetic material.
   (4) The magnet used was very weak. ( )

3. Which of the following does not have a magnet in it?

   (1) Telephone
   (2) Torch
   (3) Computer
   (4) Mobile phone ( )

4. Which of the following will cause a magnet to lose its magnetism?

(A) Heating it.
(B) Using it constantly.
(C) Dropping it.
(D) Putting it in water.

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

5. Which of the following is true about magnets?

(A) There are different types of magnets.
(B) Magnets attract objects made of magnetic materials.
(C) Every magnet has two poles.
(D) The attraction of a magnet is strongest at its poles.

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

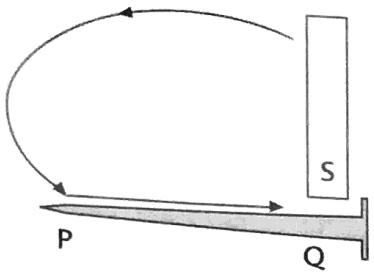
6. Which of the following is true about the magnetic poles of a magnet?

(1) They exert the greatest magnetic force.
(2) They lose their magnetism first.
(3) They are the only part of the magnet that attract magnetic objects.
(4) They are sensitive to changes in temperature. ( )

7. Which of the following is true for a magnet that has been divided into two halves?

(1) The two halves are not magnets.
(2) Each of the halves is a stronger magnet than the original magnet.
(3) Each of the halves is a weaker magnet than the original magnet.
(4) Each of the halves has a north-pole and south-pole. ( )

8. Study the diagram below carefully.

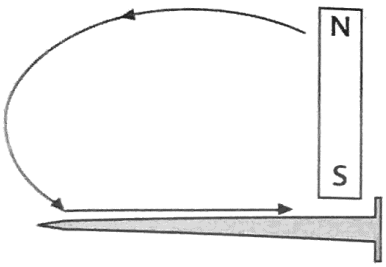


Which of the following is true of P and Q?

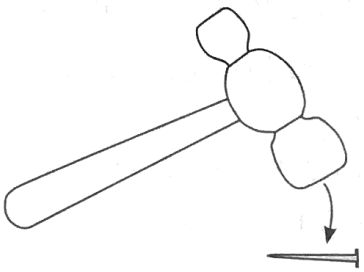
	P	Q
(1)	North-pole	North-pole
(2)	South-pole	North-pole
(3)	South-pole	South-pole
(4)	No established pole	No established pole

( )

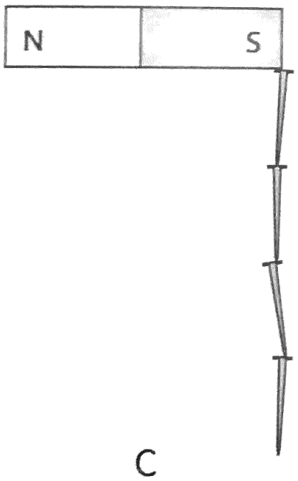
9. Which of the following are ways to make a temporary magnet?



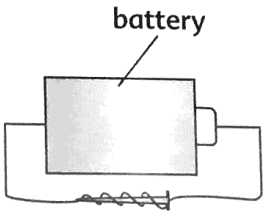
A



B



C

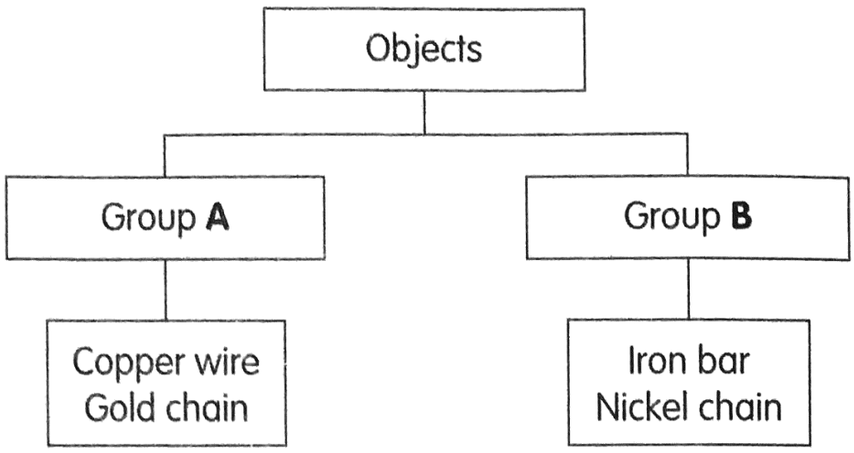


D

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

( )

10.



Which of the following may be placed in Groups A and B?

	Group A	Group B
(1)	Silver clip	Plastic band
(2)	Plastic band	Aluminium foil
(3)	Aluminium foil	Steel chip
(4)	Steel chip	Cobalt ring

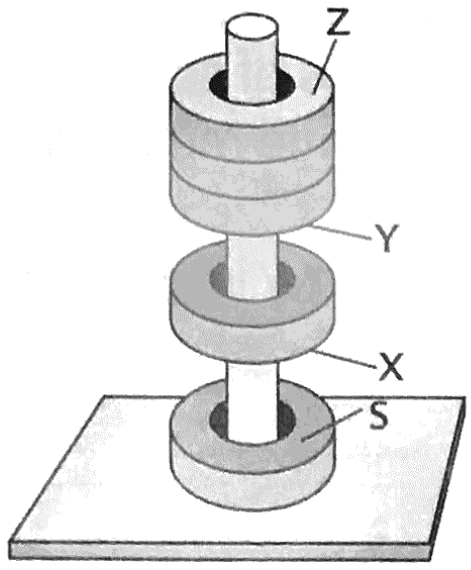
( )

11. Which of the following is not true about a magnet?

(1) A magnet attracts another magnet.
(2) A magnet repels another magnet.
(3) A magnet attracts a magnetic object.
(4) A magnet repels a magnetic object.

( )

12. The diagram below shows five ring magnets looped through a wooden rod.

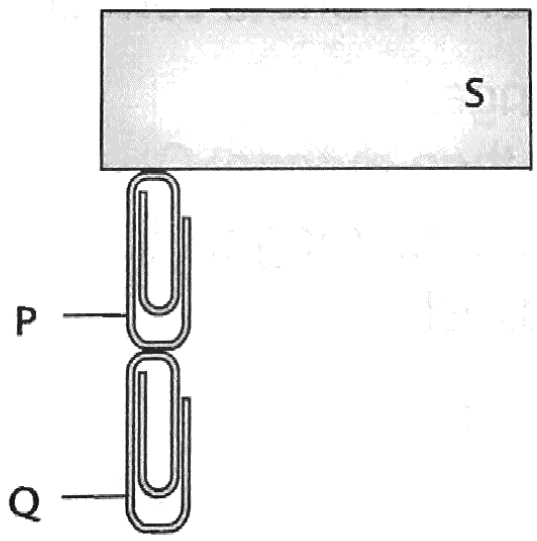


What are the poles labeled X, Y and Z?

	X	Y	Z
(1)	North	North	South
(2)	North	South	North
(3)	South	North	South
(4)	South	North	North

( )

13. The diagram below shows a bar magnet attracting two paper clips.



What are the poles P and Q?

	P	Q
(1)	North	North
(2)	North	South
(3)	South	North
(4)	South	South

( )

14. Which of the following are true about the uses of magnets?

(A) Magnets help the doors of refrigerators to remain shut.
(B) Magnets enable the needles of compasses to work properly.
(C) Magnets are used to separate metals from non-metals in dump yards.
(D) Magnets are used to lift heavy iron objects in factories.

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

15. An experiment was done to find out the strength of four magnets. The results are shown in the table below.

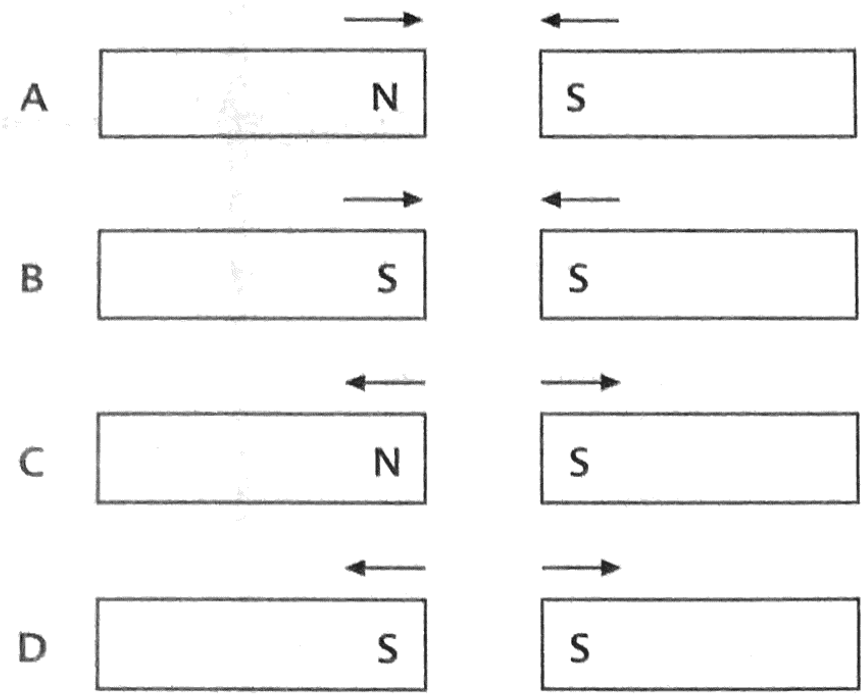
Magnet	Number of pins attracted
P	3
Q	5
R	6
S	2

Which of the following conclusions is correct?

(A) Magnet R is the strongest.
(B) Magnet P is weaker than magnet Q.
(C) Magnet Q is stronger than magnet S.
(D) Magnet S is the weakest.

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

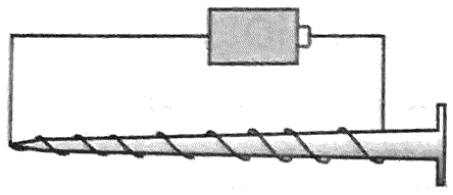
16. Two magnets were brought near each other. Which one of the following is correct?



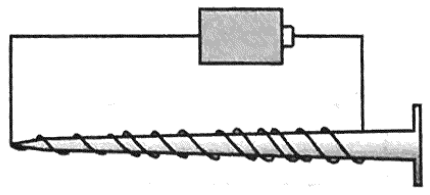
(1) A and B only
(2) C and D only
(3) A and D only
(4) B and C only ( )

17. Which nail will attract the greatest number of paper clips?

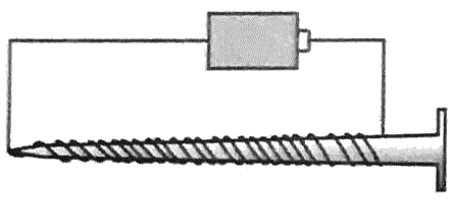
(1)



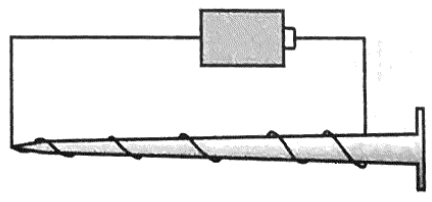
(2)



(3)



(4)

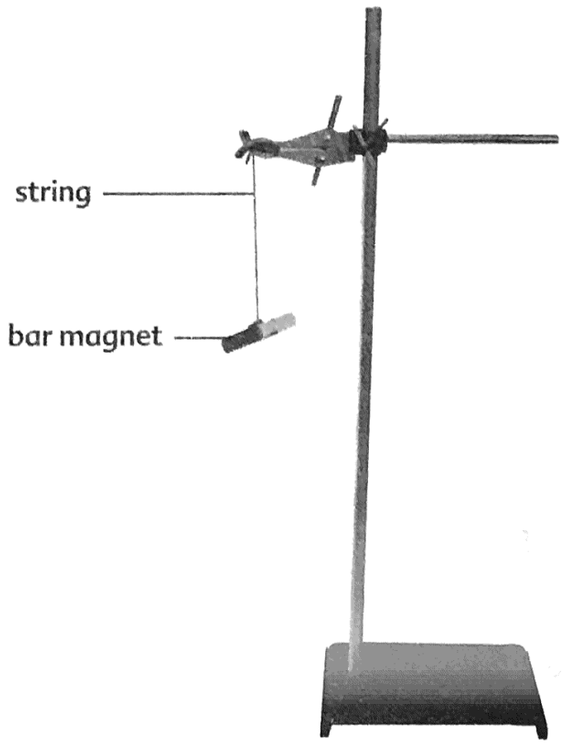


( )

18. Four rods were stroked using a bar magnet. Each rod was made from a different material. Which of the rods will become a magnet?

(1) Wooden rod
(2) Steel rod
(3) Plastic rod
(4) Aluminium rod ( )

19. The diagram shows a bar magnet hung such that it could turn freely. In which direction will it come to rest?

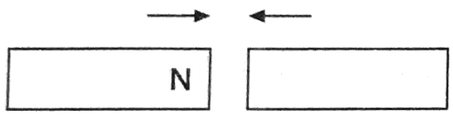


(1) North–South
(2) South–East
(3) East–West
(4) North–West

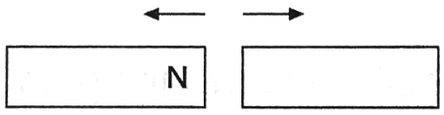
( )

20. You are given a magnet and an iron bar. Which of the following will occur?

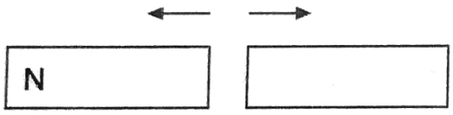
(A)



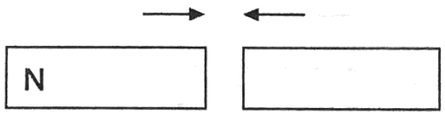
(B)



(C)



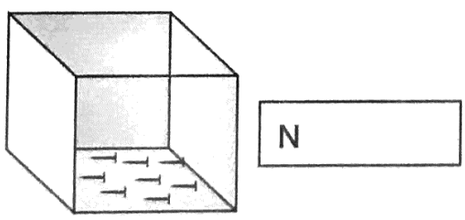
(D)



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

( )

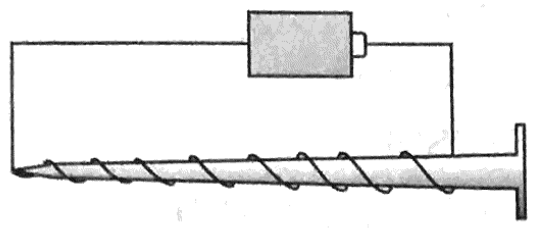
21. A magnet is brought near four boxes made of four different kinds of materials as shown in the diagram below. In which of the boxes will the iron nails not respond to the magnet?



(1) Plastic box
(2) Glass box
(3) Paper box
(4) Iron box

( )

22. An iron nail was magnetised using the set-up given below.



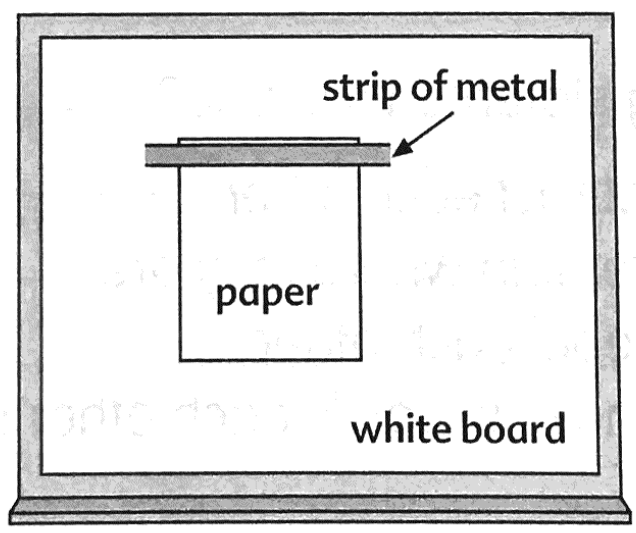
The iron nail was then removed from the set-up and placed near some iron filings. Which of the following is true?

(1) The iron filings will be attracted to the centre of the iron nail.
(2) The iron filings will be attracted to the two ends of the iron nail.
(3) The iron nail will not attract any iron filings.
(4) The iron nail will attract the iron filing for a short while only. ( )

23. Which of the following makes use of magnets?

(1) Computer mouse
(2) Scissors
(3) Washing machine
(4) Frying pan ( )

24. A strip of metal was found to be able to hold a piece of paper against white board A but not white board B. Which of the following is true?



(A) White Board A is made of magnetic material.
(B) White Board B is made of non-magnetic material.
(C) The strip of metal is a magnet.
(D) The strip of metal is heavier than White Board B but lighter than White Board A.

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

25. Which one of the following groups of objects can be attracted by a magnet?

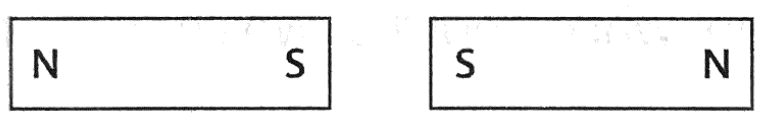
(1) Needle, safety pin, screws
(2) Cork, iron nails, rubber bung
(3) Stapler, paper clips, eraser
(4) Copper wire, thumb tacks, pendant ( )

26. Which of the following statements is correct?

(A) Magnetism from a magnet cannot pass through magnetic materials.
(B) Lodestones are temporary magnets.
(C) The most effective way of separating iron nails from steel nails is to use a magnet.
(D) A lodestone has only one pole.

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

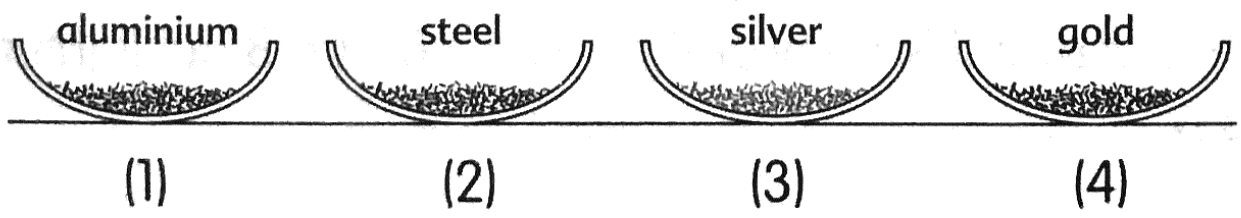
27. The diagram below shows two bar magnets which have been brought near each other.



Which of the following statements is true?

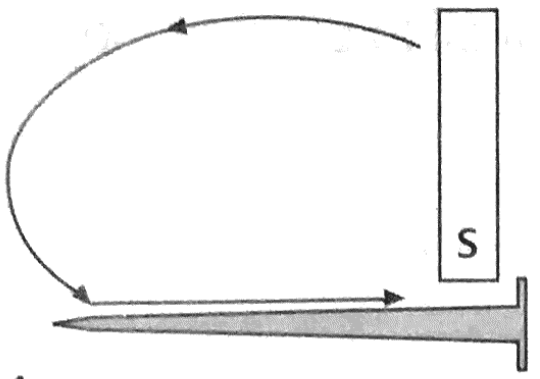
(1) The magnets will attract each other.
(2) The magnets will remain where they are.
(3) The magnets will repel each other.
(4) The magnets will move towards each other first and then move away from each other. ( )

28. The diagram below shows four dishes filled with dust particles obtained from different metals.

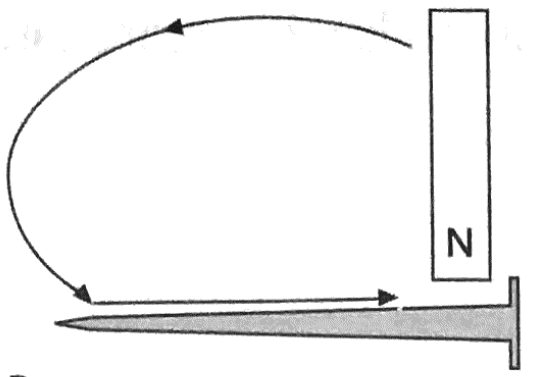


A magnet is lowered into each dish. From which dish would the contents be attracted to the magnet? ( )

29. Two iron nails were magnetised by two similar magnets as shown in the diagrams below.



A



B

What would be the poles at A and B?

	A	B
(1)	North	North
(2)	South	South
(3)	North	South
(4)	South	North

( )

30. Which of the following is correct?

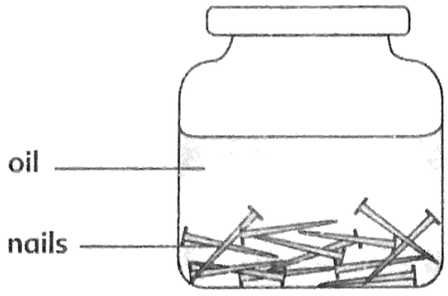
	Non-magnetic material	
	Metal	**Non-metal**
(1)	Iron	Rubber
(2)	Steel	Plastic
(3)	Aluminium	Styrofoam
(4)	Nickel	Wood

( )

Section B (40 marks)

Write your answers for each question in the blank spaces provided.

31. Some iron nails were stored in a bottle of oil to prevent the nails from rusting.



(a) What is the best way to remove a few nails without having to touch the oil in the bottle? [2]

_____

_____

(b) Which property of the iron nails allows them to be removed in this way? [1]

_____

(c) Would the method in (a) work if another liquid such as water, instead of oil, was used to store the nails? [1]

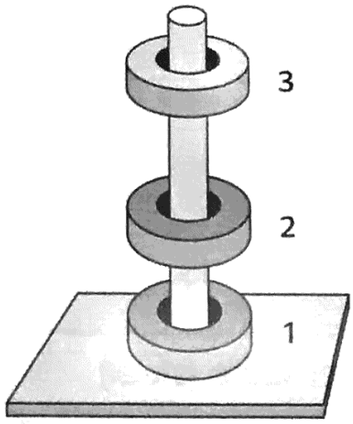
_____

(d) Can the same method be used if the objects in the oil were copper nails? Why? [2]

_____

_____

32. The diagram below shows three ring magnets.



(a) Magnets 2 and 3 float. Why is this so? [3]

_____

_____

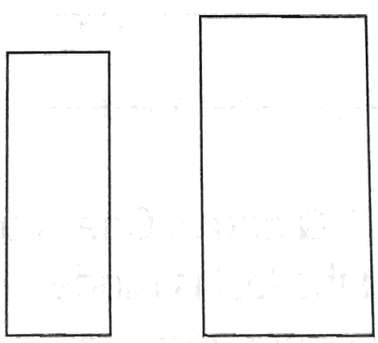
_____

(b) What must be done to have all the magnets touching each other? [1]

_____

33. You are given two bar magnets A and B as shown below.

(a) Describe a simple experiment you would carry out to find out which is the stronger magnet. Draw diagrams to support your answer. [3]



(b) What are two variables that must be kept constant for this experiment? [2]

_____

_____

34. You are given the following objects:

Plastic fork	**Butter knife (steel)**	**Steel needles**
Nickel clips	**Small pieces of copper wires**	**Nickel coins**
Silver pendant	**Aluminium cans**	**Steel nail clipper**
	Gold ring	

(a) Classify the objects above using the table below. [5]

Magnetic	Non-magnetic

(b) Describe how you would check that your classification is correct. [2]

_____

_____

35. You are given three bars P, Q and R. One is a magnet, another is made of magnetic material, and the last is made of non-magnetic material. You are also given another bar magnet M.

(a) Describe how you would find out which types of materials P, Q and R are made of. [4]

_____

_____

_____

_____

(b) Bar P was found to be made of magnetic material. How would you turn bar P into a temporary magnet, using only the materials given above? [1]

_____

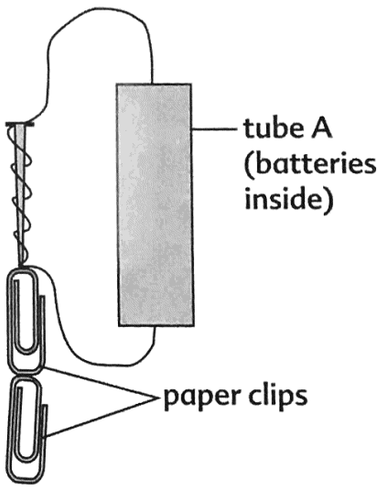
(c) State two precautions you must take in order for the procedure in (b) to be successful. [2]

_____

_____

36. An experiment was set up as shown in the diagram below. When different numbers of batteries were inserted into tube A, the temporary magnet could pick up different numbers of paper clips. The results are shown in the table below.

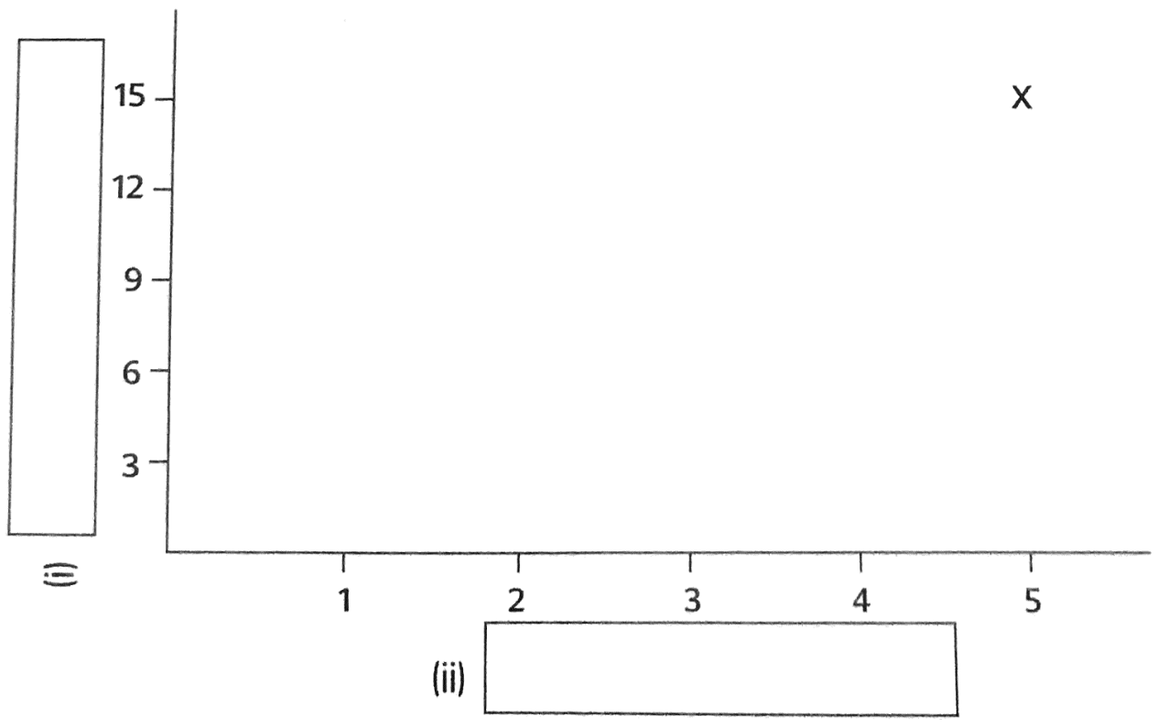
Number of batteries	Number of paper clips attracted
1	3
2	6
3	9
4	12
5	15



(a) Transfer the information from the table to the line graph below by:

(i) Labelling the axes of the graph. (Write in the boxes provided.) [2]

(ii) Plotting the points in the graph (one example has been done for you). [4]



(b) What conclusion can you draw from this experiment? [1]

_____

(c) A temporary magnet can also be made by stroking the iron nail with a bar magnet. An experiment was conducted with a temporary magnet made by the stroking method. Complete the table below using the numbers 8, 1, 3 and 12. [4]

Number of strokes	Number of paper clips attracted
10	
20	
40	
80	

End of Paper

Thematic Assessment 3 – Systems
(Pages 99–117)

Section A (30 × 2 = 60 marks)

1. (3)	11. (2)	21. (3)
2. (2)	12. (2)	22. (4)
3. (3)	13. (2)	23. (2)
4. (2)	14. (1)	24. (1)
5. (4)	15. (4)	25. (2)
6. (1)	16. (3)	26. (2)
7. (4)	17. (4)	27. (3)
8. (2)	18. (2)	28. (3)
9. (1)	19. (4)	29. (3)
10. (3)	20. (2)	30. (3)

Section B (40 marks)

[• 1 mark per point; ○ ½ mark per point]

31. (a) • Yes, the taste is different.
    (b) • Yes, the smell is different.
    (c) • No, they feel the same, because they are of the same shape and size (colour cannot be felt, smelled, heard or tasted).

32. (a) • It is made up of different parts which together function as a whole.

(b) (½ mark each)

	Part	Function
(i)	○ Screen	○ To see the messages received.
(ii)	○ On/off button	○ To turn on/off the phone.
(iii)	○ Number pad (OR buttons / keys)	○ To key in phone numbers

(c)
- Both have a screen to display the information keyed in or received.
- Both have keys (a number and alphabet pad) for keying in information.

(d)
- The mobile phone is much smaller than a notebook. There is not enough space to have as many keys as in a notebook.

33. (a) • Circulatory
(c) • Muscular
(d) • Respiratory
(e) • Digestive

34. (a)
- To ensure that any change in the volume of water is due to the plant and not because of evaporation (into the atmosphere).

(b)
- Water was taken up by the two plants in A and C.

(c)
- Container B.
- The plant in B behaved differently from the other two plants (it did not take up water). Therefore it should be the plastic plant. (Containers A and C contain the two real plants.)

(d)
- Living things take up water but non-living things do not.

(e)
- Yes.
- Because Ali's experiment should have included one more real plant in an identical container, but without water.

- After a week, if the plant died, he would know that Ahmad's first statement was right.

35. (a) • True
    (b) • False
    (c) • False
    (d) • True

36. (a) (i) • Leaf blade
    (ii) • Leaf stalk
    (iii) • Leaf vein
    (b) • Both have a leaf blade, stalk and veins.

Bird of Paradise	Hosta
○ Long	○ Rounded
○ Has one colour / completely green	○ Has two colours /green and yellow

37. (a) (i) • In the mouth.
    (ii) • To moisten/partially digest food.
    (b) (i) • 210 s
    (ii) • 120 s
    (c) • No more starch was present in the test tube.
    • It was changed by the saliva into something else (digested by saliva).
    (d) • 40 °C
    • It takes a shorter time for all the starch to be changed by the saliva at 40 °C than at 20 °C.

Test 8 – Interactions (Pages 119–125)

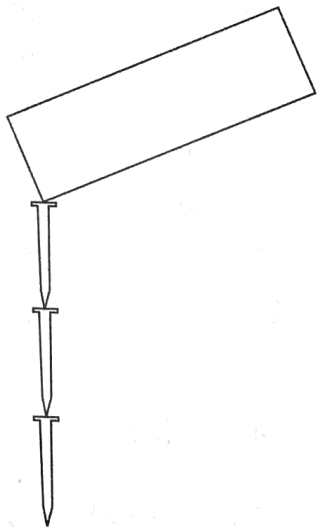
Section A (15 × 2 = 30 marks)

1.	(3)	6.	(3)	11.	(1)
2.	(1)	7.	(1)	12.	(4)
3.	(1)	8.	(3)	13.	(4)
4.	(2)	9.	(2)	14.	(2)
5.	(3)	10.	(2)	15.	(3)

Section B (20 marks)

[• 1 mark per point; ○ ½ mark per point]

16. (a) • True
    (b) • False
    (c) • True
17. (a) • Battery
    • Iron/steel rod (or any magnetic material)
    • Electrical wiring
    (b) • Electromagnet
    (c) • It is able to attract magnetic materials such as steel pins.
    • It repels the like pole of another magnet.
    (d) • Coil the electrical wiring more times around the rod.
    • Increase the electrical current (e.g. by using an addtional battery).
18. • Attach the iron nails in series (in a chain) to one pole of each magnet.



    • The strongest magnet will be able to attract the most number of iron nails.
    • The weakest magnet will attract the least.

19. • A: Metals
    • B: Non-magnetic
    • C: Steel
    • D: Iron/nickel
    • E: Gold
    • F: Silver

Thematic Assessment 4 – Interactions (Pages 127–142)

Section A (30 × 2 = 60 marks)

1.	(3)	11.	(4)	21.	(4)
2.	(3)	12.	(3)	22.	(3)
3.	(2)	13.	(1)	23.	(3)
4.	(3)	14.	(3)	24.	(3)
5.	(4)	15.	(4)	25.	(1)
6.	(1)	16.	(3)	26.	(1)
7.	(4)	17.	(3)	27.	(3)
8.	(2)	18.	(2)	28.	(2)
9.	(4)	19.	(1)	29.	(4)
10.	(3)	20.	(3)	30.	(3)

Section B (40 marks)

[• 1 mark per point; ○ ½ mark per point]

31. (a)
- Place a magnet against the walls of the bottle. (The nails will be attracted to the magnet.)
- Slowly move the magnet upwards until the nails are out of the oil.

(b)
- The ability to be attracted by magnets.

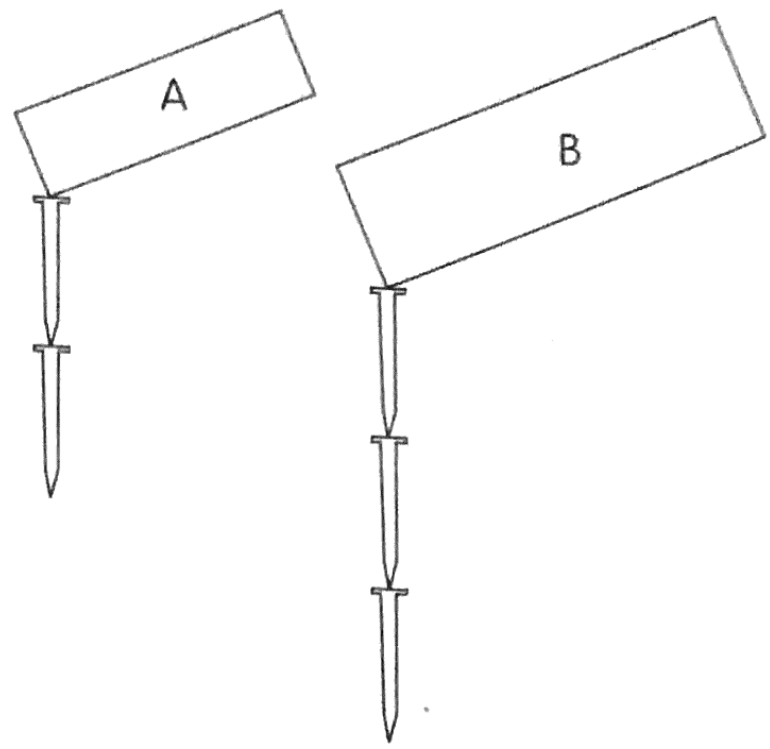
(c)
- Yes, the force of a magnet can pass through different liquids.

(d)
- No, copper cannot be attracted by a magnet.
- It is non-magnetic.

32. (a)
- The poles facing each other for magnets 2 and 1, and magnets 2 and 3, are like poles.
- Since like poles repel,
- magnet 1 pushes magnet 2 up, while magnet 2 pushes magnet 3 up.

(b)
- Turn magnet 2 around.

33. (a)
- Attach iron nails/paper clips in a chain to one pole of each magnet.



- The stronger magnet will be able to attract more iron nails/paper clips.

(b)
- The size (length) of the iron nails/paper clips.
- The weight of the iron nails/paper clips.

34. (a)

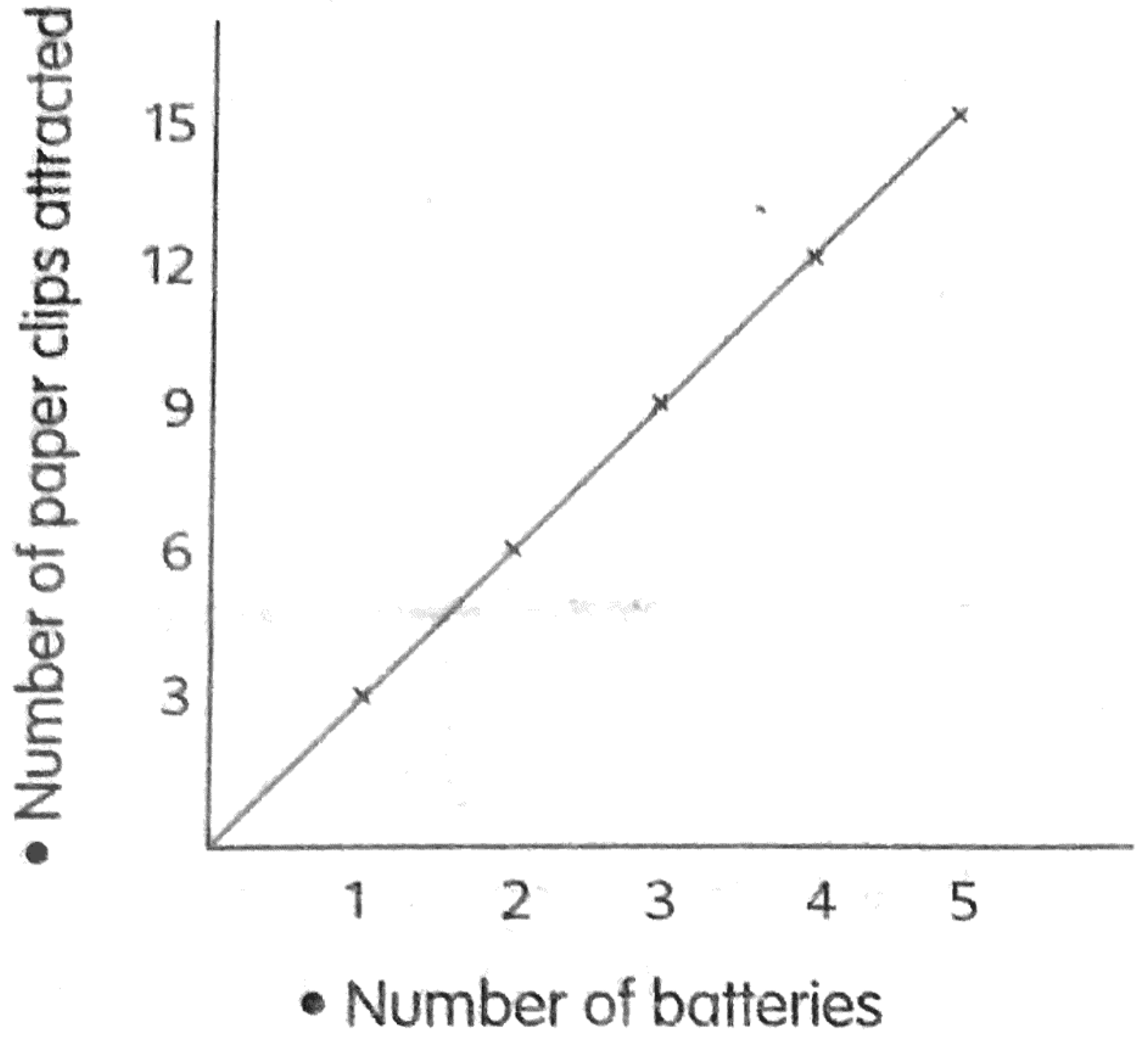
Magnetic	Non-magnetic
○ Butter knife (steel) ○ Steel needles ○ Nickel clips ○ Nickel coins ○ Steel nail clipper	○ Plastic fork ○ Small pieces of copper wires ○ Aluminium cans ○ Gold ring ○ Silver pendant

(b)
- Bring a magnet near each of the objects.
- The magnetic objects will be attracted by the magnet.

35. (a)
- Bring the bar magnet M near each of the bars P, Q and R.
- M will repel the magnet at one end,
- attract the magnetic material at both ends, and
- have no effect on the non-magnetic material.

(b)
- Use magnet M to stroke bar P several times.
- Stroke in one direction only.
- Use only one pole of magnet M.

36. (a) (One mark per point; total four. Two marks for axis labels)



(b) • More paper clips can be attracted by the temporary magnet if more batteries are used (a stronger current is used).

(c)

Number of strokes	Number of paper clips attracted
10	• 1
20	• 3
40	• 8
80	• 12