

SAZ

**NAN HUA PRIMARY SCHOOL
END-OF-YEAR EXAMINATION 2005
SCIENCE
PRIMARY 4**

Name : _____ ()
Class : Primary _____
Date : 31 Oct 2005
Duration : 1h 30 min

Section A: / 60
Section B: / 40
Total Marks: / 100

Parent's Signature

Section A (30 x 2 marks)

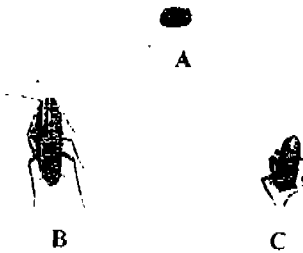
For each question from 1 to 30, four options are given. One of them is the most suitable answer. Make your choice ((1, 2, 3 or 4). Shade the correct oval on the Optical Answer Sheet (OAS)

1. Why are mercury and alcohol commonly used in thermometers?
- (1) They give out heat.
 - (2) They are liquids.
 - (3) They are able to react to small changes in heat.
 - (4) They bring about heat gain and heat loss.
2. Which properties of objects should you investigate if you want to classify them into different states of matter?
- (1) The amount of space they occupy.
 - (2) The ability to maintain their volume.
 - (3) Their shape and size.
 - (4) Their volume and mass
3. Which one of the following processes is **correctly matched** to the change of state that takes place in water?

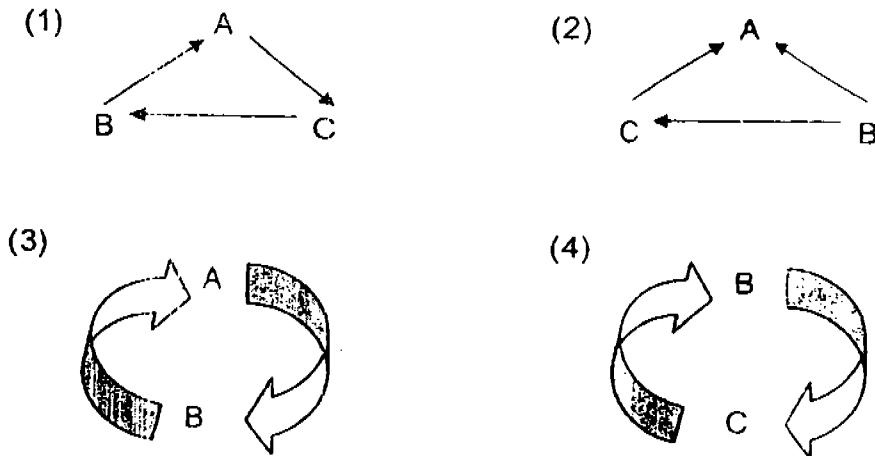
	Processes	Change of state
(1)	Melting	Liquid to Gas
(2)	Condensation	Solid to Liquid
(3)	Freezing	Gas to Liquid
(4)	Evaporation	Liquid to Gas

4. Which of the following statement(s) is/are true about the stomata found in the leaves of a plant?
- A. They are found mostly on the lower surface of the leaf.
 - B. They allow exchange of gases to take place.
 - C. They allow photosynthesis to take place all the time.
- (1) A only
 - (2) A and B only
 - (3) B only
 - (4) All of the above

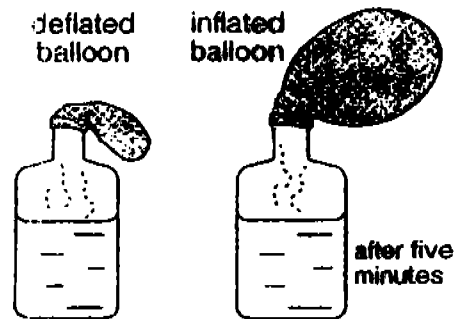
5. The blood helps cells get their supply of _____ and gets rid of wastes like _____ respectively.
- (1) carbon dioxide, water
 - (2) water, oxygen
 - (3) food substances, carbon dioxide
 - (4) carbon dioxide, oxygen
6. Which one of the following statements about light is true?
- (1) It is a form of energy.
 - (2) It has mass.
 - (3) It occupies space.
 - (4) It has definite shape.
7. Which one of the following statements about bacteria is not true?
- (1) Bacteria are living things.
 - (2) Bacteria can be found in yoghurt.
 - (3) Bacteria cannot be seen with our naked eyes.
 - (4) All micro-organisms are bacteria.
8. Below are some of the stages in the life cycle of a cockroach.



Which of the following shows the correct life cycle of a cockroach?

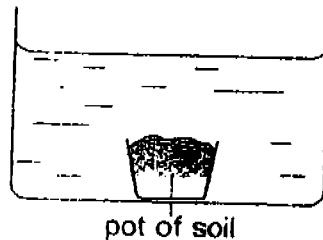


9.



David filled a glass bottle with hot water. After a few minutes, he noticed that the balloon he placed over the tip of the bottle had become inflated. Why is this so?

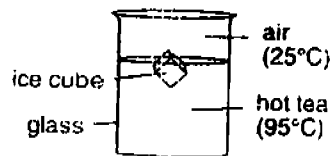
- (1) The hot air in the bottle expanded and caused it to become inflated.
 - (2) The hot air around the outside of the balloon caused it to expand.
 - (3) The hot water had gone up into the balloon and caused it to expand.
 - (4) The hot air in the balloon contracted and caused it to become inflated.
10. Tom told his friends that there is air in the soil. He proved it by putting a pot of soil into a glass tank of water. What would they mostly observe?



- (1) The pot floats up in the water.
 - (2) The soil changes colour in the water.
 - (3) The water level falls when the pot is lowered into the water.
 - (4) Small bubbles appear in the water.
11. When water freezes to ice, there is a change in _____.
- A. state
 - B. substance
 - C. volume
 - D. temperature
- (1) A and B only
 - (2) B, C and D only
 - (3) A, C and D only
 - (4) All of the above

16. Which of these statements are true for plants?
- A. All plants grow only from seeds.
 - B. A seed grows into a young plant that matures and produces more seeds.
 - C. Seeds need air, moisture and warmth to grow.
 - D. Some plants can grow from plants parts such as bulbs.
- (1) A and B only
 - (2) A and C only
 - (3) B, C and D only
 - (4) All of the above

17. Study the diagram below carefully.



Which of the following statements are true?

- A. The air will gain heat from the hot tea and ice cube.
 - B. The hot tea will lose heat to the ice cube, glass and surrounding air.
 - C. The ice cube will lose heat to the hot tea.
 - D. The glass will gain heat from the hot tea and lose heat to the surrounding air.
- (1) A and B only
 - (2) B and D only
 - (3) A and C only
 - (4) C and D only
18. Which one of the following sentences is false?
- (1) The air we breathe out is used by plants to make food during the day.
 - (2) The air we breathe in is made up of mainly nitrogen and oxygen.
 - (3) The air we breathe out has more oxygen than the air we breathe in.
 - (4) The air we breathe out is warmer than the air we breathe in.
19. Which of these statements are true?
- A. Seeds cannot reproduce.
 - B. Offsprings are similar to their parents but are still unique individuals.
 - C. The offspring of plants and animals have genes from both parents.
 - D. Friends are usually more similar to each other than to their sister or brother.
- (1) B only
 - (2) B and C only
 - (3) A and D only
 - (4) C and D only

20. A few boys carried out an experiment to compare the temperature of air in the open and under the shade of a tree. They took two identical thermometers, placed one in the sun for 10 minutes and the other in the shade for 15 minutes. They had not done a fair test because _____.

- A. they used similar thermometers
- B. the thermometers were placed in different places
- C. the lengths of time were different

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

21.

Physical State	Pulse rate	Number of breaths per minute
Before exercise	74	39
After exercise	104	50

From the table above, which of the following statements can be inferred?

- (A) More oxygen is needed by our bodies when we exercise.
- (B) Blood reaches different parts of the body faster when our body works harder.
- (C) The exercise shakes up the lungs and heart, so they beat faster.
- (D) The heart beats faster during exercise.

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

22. Peter wanted to find out whether a cube of sugar dissolves faster in hot or cold water. Which one of the variables below will have no effect on his investigation?

- (1) The kind of container used
- (2) The amount of water used
- (3) The temperature of the water
- (4) The amount of sugar used

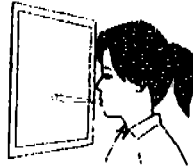
23. Simon caught an animal that had a breathing tube. Where was it most likely to be found?

- (1) At the muddy bottom of a pond
- (2) Near the water surface of a pond
- (3) In the air around a pond
- (4) On the leaves of plants on the edge of a pond

24. Steel is considered matter because it _____.

- (1) is hard and shiny
- (2) has mass and occupies space
- (3) can conduct heat and electricity
- (4) has a definite size

25. When pure water changes from a liquid to a gas _____.
- (1) condensation takes place
 - (2) a lot of heat is given out
 - (3) a lot of heat is taken in
 - (4) the temperature must not be more than 0°C
26. Which one of the following will give a clear reflection of yourself when you look at it?
- (1) a piece of aluminium foil
 - (2) a polished, metal pot
 - (3) a piece of stained glass
 - (4) small pieces of shattered mirror
27. A mirror gets misty when a person blows onto it quickly. Which substance in exhaled air causes this?



- (1) water vapour
 - (2) nitrogen
 - (3) carbon dioxide
 - (4) water
28. A metal ruler and a wooden ruler are placed in an air-conditioned room. The metal ruler feels colder when touched compared to the wooden ruler after some time. Why is this so?
- (1) Metal is more shiny than wood.
 - (2) Metal is a better conductor of heat than wood.
 - (3) Metal is a non-living thing but wood is from a living plant.
 - (4) Metal is harder than wood.
29. Which one of the following statements is **false**?
- (1) The heart alone controls breathing.
 - (2) Breathing involves other systems in our body.
 - (3) Breathing rate increases with strenuous activity.
 - (4) Breathing rates vary from one person to another.
30. How are plants and animals **alike**?
- (1) They make their own food.
 - (2) They need air, water and food.
 - (3) They respond quickly to changes.
 - (4) They can move their whole body from place to place.

NAME : _____

DATE : _____

CLASS : _____

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SUBJECT: _____

EXAMPLE: IF YOU THINK THE 2ND OPTION IS THE CORRECT ANSWER SHADE THE OVAL **2** LIKE THIS:



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SCORE : 48/90 (17/80%)

Name : _____ ()

Marks : /40

Section B (20 x 2 marks)

Fill in the blanks with appropriate answers.

31.



Water cannot enter the beaker because there is (a) _____ inside the beaker.

The air takes up (b) _____ in the beaker and stops water from filling the glass.

Since water cannot get into the beaker, the tissue remains (c) _____. If the

beaker is tilted slightly, some (d) _____ will be seen escaping.

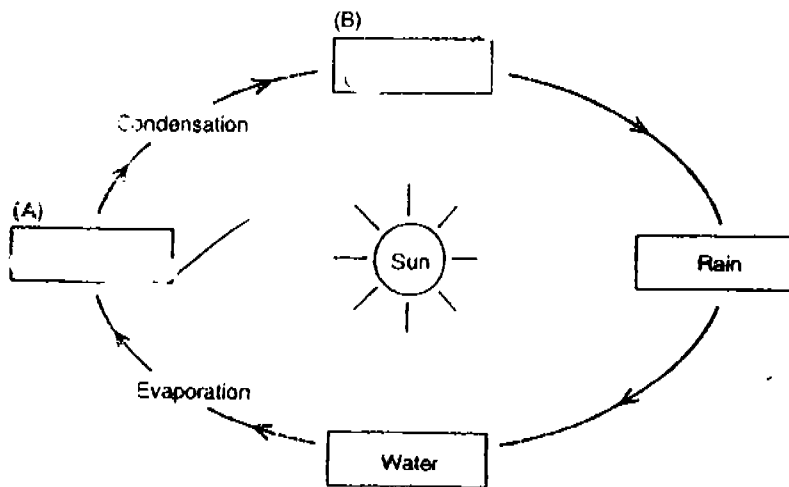
(2 m)

32

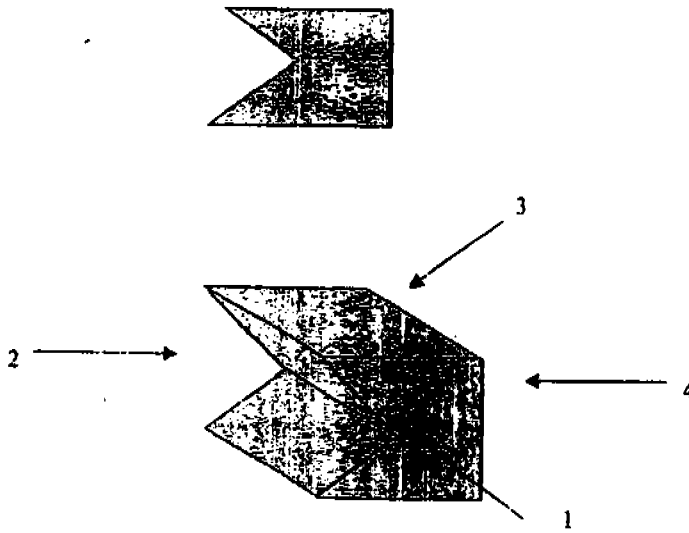
(a) Air is a mixture of gases. Name two of these gases that are mainly used by man.
(1 m)

b) Which gas is taken in by plants during photosynthesis? (1 m)

33. Look at the diagram of the water cycle below. Fill in boxes (A) and (B) (2 m)



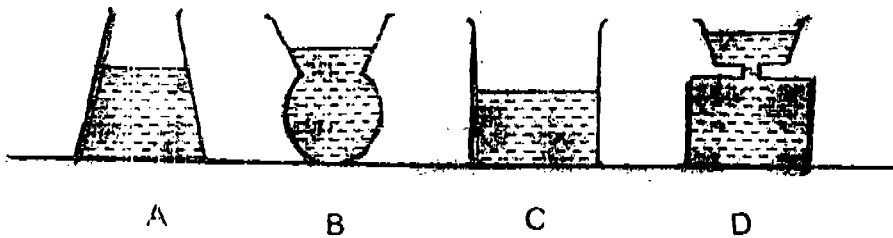
34. A 3-dimensional object was placed on a table and illuminated from different angles.



(a) At which direction (1, 2, 3 or 4) should the light source be placed so that the shadow looks like the object above? (1 m)

(b) Name one property of light. (1 m)

35. The four containers below are made of the same material. They contain equal amounts of water and are placed in the same location.



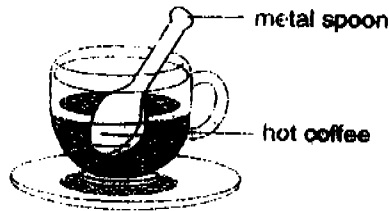
(a) In which container will the water dry up first? (1 m)

(b) Give a reason to your answer in (a) above. (1 m)

36. Read the following statements. Write 'True' and 'False' in the brackets provided. (2 m)

- (a) Heat is a form of matter. ()
- (b) Most light sources are also heat sources. ()
- (c) Heat is used to measure temperature. ()
- (d) Poor conductors of heat can slow down heat loss or heat gain. ()

37.

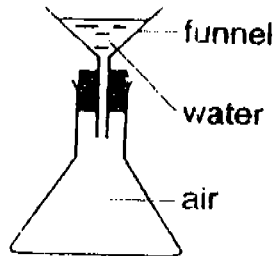


A metal spoon was placed in a cup of hot coffee as shown above. After a while, the metal spoon became hot.

(a) How did the spoon become hot? (1 m)

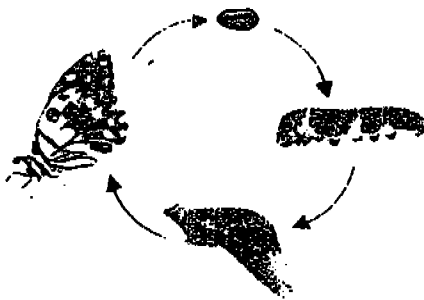
(b) What does this tell you about the property of heat? (1 m)

38.

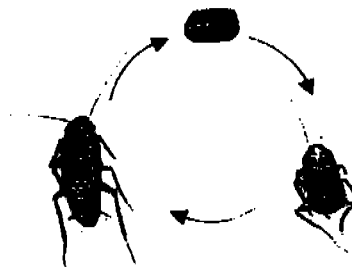


When water is poured into the funnel, no water can flow into the flask. Why is this so? (2 m)

39. Study the life cycles of a butterfly and a cockroach.



Life cycle of a butterfly



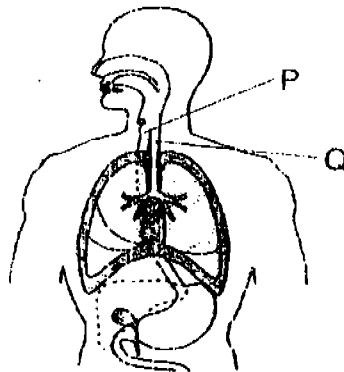
Life cycle of a cockroach

Write down two differences between the two life cycles. (2 m)

- (a) _____

- (b) _____

40.



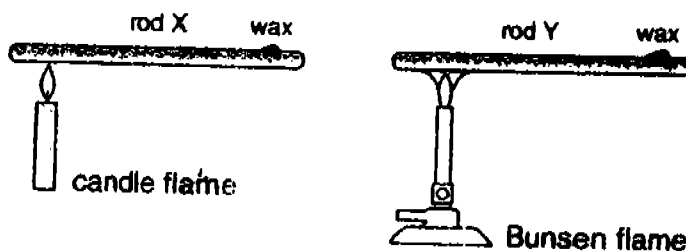
(a) Label the parts marked P and Q (1 m)

P: _____ Q: _____

(b) State the difference between the functions of these two parts. (1 m)

- _____

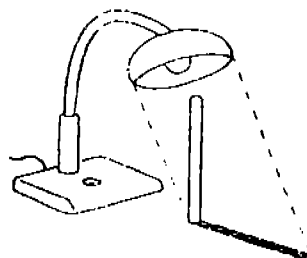
41. Some students want to find out whether two metal rods, X or Y, of similar length, can conduct heat faster. This is the experiment that they have set up.



List two things that they should have done in order for the test to be a fair one. (2 m)

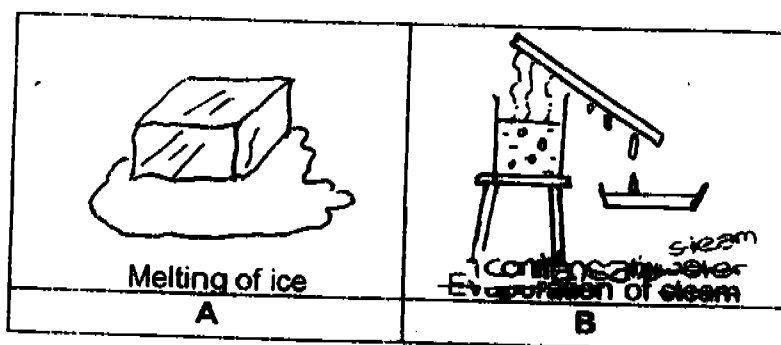
- (i) _____
- (ii) _____

42. Tom had just heard from his Science teacher that we could estimate time by looking at the lengths and positions of a pole when it was blocked by the sun. After he went back home, he set up the following using a stick and a lamp, thinking that these can be used to tell time.



His brother told him that was not possible. Why do you think this is so? (2 m)

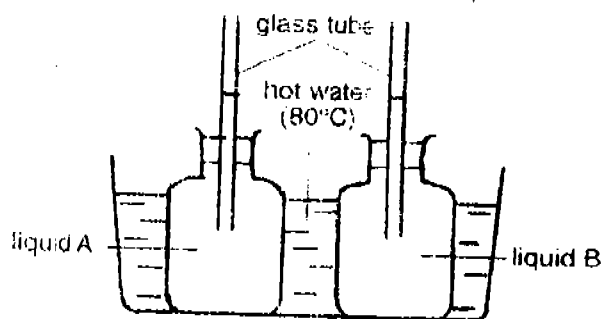
43. Look at the two processes below.



(a) Give one similarity between process A and B. (1 m)

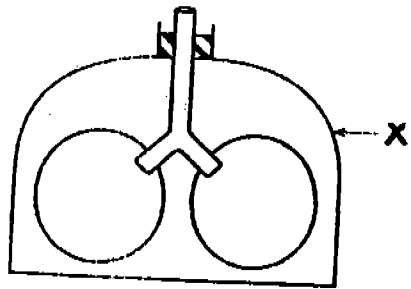
(b) Give one difference between process A and B. (1 m)

44. David has set up the following apparatus to investigate whether different liquids will expand the same amount after they have gained heat from a container of hot water.



Name two more variables that should be kept constant for a fair test. (2 m)

45. Our respiratory system can be represented by a model shown below.



(a) Give one function of part X. (1 m)

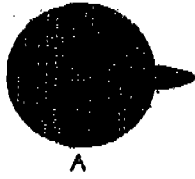
(b) Suggest one **difference** between X on the diagram and the actual part in our body. (1 m)

46. Identify two **similarities** between the circulatory system of a fish and a man. (2 m)

(i)

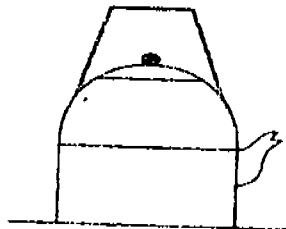
(ii)

47. The diagrams below show the shadows cast by an object when light shines on it from different directions. Mr Lim showed these diagrams to his class and asked them what the object could be.



- (a) Tom guessed that one of the objects could be a cup. Which shadow shows that the object is most likely a cup? (1 m)

- (b) Peter guessed that the shadow on the right is that of a kettle. Draw an arrow (\longrightarrow) in the diagram below to show where the light source was from to give the shadow as shown on the right. (1 m)



48. Mr Lim said, "The Sun is our most important source of energy. Without it, there would be no life on Earth."
How do plants and animals use the energy from the Sun for food? (2 m)

49. Animal X has a pair of wings. It lays eggs and sits on the eggs to warm them. Each egg has a hard shell.

(a) Based on the above information, how many legs would Animal X have? (1 m)

(b) Based on the above information, what kind of outer covering would Animal X have?(1 m)

50. George pulled some plants out from his garden and planted them in pots. He put the pots in the living room and watered them daily. Within a week, the plants died.

Suggest two possible reasons why the plants from the garden did not grow well indoors. (2 m)

(i) _____

(ii) _____

End-of-Paper

Nan Hua Primary School

Primary 4 Science SA2 Exams (2005)

Answer Sheet

Answer Sheets

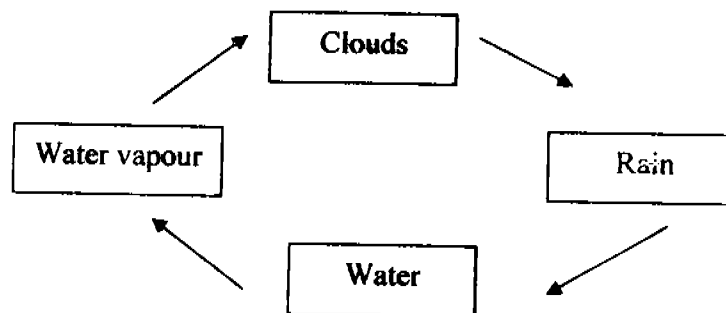
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
3	2	4	2	3	1	4	1	1	4
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
3	2	4	4	3	3	3	3	2	3
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
3	1	2	2	3	2	1	2	1	2

- 31a. Air
 31b. Space
 31c. Dry
 31d. Air bubbles

32a. They are oxygen and nitrogen

32b. It is carbon dioxide.

33.



34a. It should be i

34b. Light cannot pass through opaque objects.

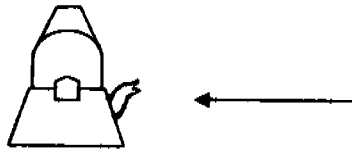
34a. It will be C.

34b. The exposed surface area of C is the largest among the containers and the water in C will dry up first as the larger the exposed surface area is the quicker the water will evaporate.

- 36a. False
 36b. True
 36c. False
 36d. True
37. As metal is a good conductor of heat, it gained the heat very quickly from the hot coffee.
- 37b. Good conductors of heat gain heat very quickly this tells me heat travels from a hotter place to a cooler place.
38. As the air in the flask cannot escape from the flask, it will take up all the space in the flask, thus no water can flow in as water cannot be compressed.
- 39a. The young of the butterfly does not look like the adult butterfly whereas the young of the cockroach looks like the adult cockroach.
- 39b. The life cycle of the butterfly has four stages whereas the life cycle of the cockroach has three stages only.
- 40a. P : Gullet Q : Windpipe
- 40b. The gullet forces down the food to the stomach whereas the air goes down the windpipe then to the lungs.
41. (i) They must use the same type of heat source.
 (ii) The wax must be the same amount.
- 42.. It is not possible because the sun has a regular cycle, whereas the lamp is stationary, thus the shadow will not change.
- 43a. Both processes produce water.
- 43b. Process A is heat gain.
 Process B is heat loss.
- 44.
- 45a. It protects the lungs.
- 45b. The actual part of X in our body is made of many bones whereas X on the diagram is not made of any bones.
46. (i) Both of them have blood vessels.
 (ii) Both of the systems transport blood around the body.

47a. It is A.

47b.



48. The plants use the energy from the sun to make food and survive, and in the meantime provides food for herbivores and herbivores serves as a food for carnivore thus forming the food chain.

49a. It would have two legs.

49b. It would have feathers as the outer covering.

50. George might have watered too much and the plants could not absorb the water and the roots were damaged when the plants were taken out of the ground.

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