SINGAPORE CHINESE GIRLS' SCHOOL

SECOND SEMESTRAL ASSESSMENT 2006

PRIMARY 5 SCIENCE

NAME: _____( ) DATE: 4 October 2006

TIME: 1hr 45 mins

SCIENCE

BOOKLET A

30 questions

60 marks

Total Time for Booklets A & B: 1h 45min

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
FOLLOW ALL INSTRUCTIONS CAREFULLY.

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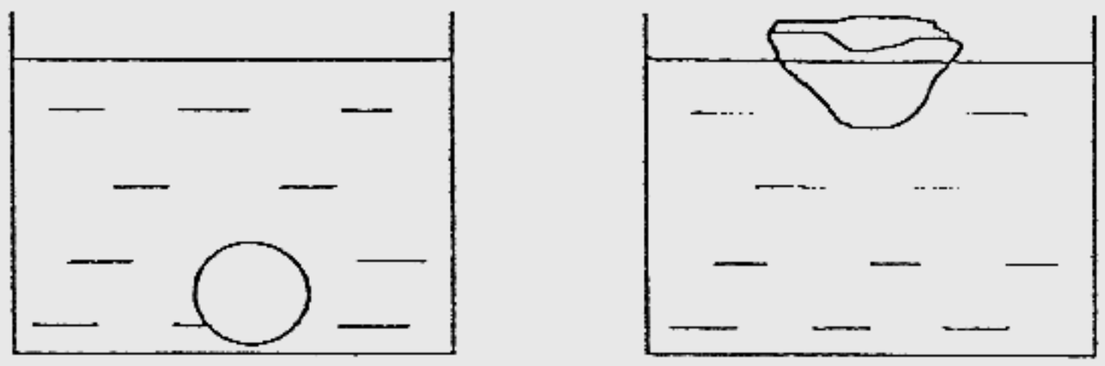
For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice, (1, 2, 3 or 4). **Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.**

1. Which of the following organisms are classified correctly under the given headings?

Reptile	Bird	Fish	Mammal
Spider	Flying fox	Starfish	Pig
Lizard	Eagle	Guppy	Flying fox
Kangaroo	Bat	Swordfish	Giraffe
Crocodile	Snake	Eel	Elephant

2. Frances rolled 20g of plasticine into a ball and placed it onto the water surface of Tank A. She took another 20g of plasticine and kneaded it into the rough shape of a boat and placed onto the water surface of Tank B. She then drew her observation as shown in the diagrams below.



Tank A Tank B

She is trying to test if _____ .

1) plasticine is waterproof
2) plasticine can dissolve in water
3) mass determines if an item floats or sinks in water
4) shape determines if an item floats or sinks in water

3. Due to cancer, Ava underwent a surgery to remove her stomach. Which statement explains how her body gets food for energy?

1) She can only drink because she cannot digest food anymore.
2) She still eats solid food because digestion can still take place in her mouth only.
3) Food is injected directly into her veins because she cannot digest food anymore.
4) She still eats solid food because digestion can still take place in her mouth and small intestines.

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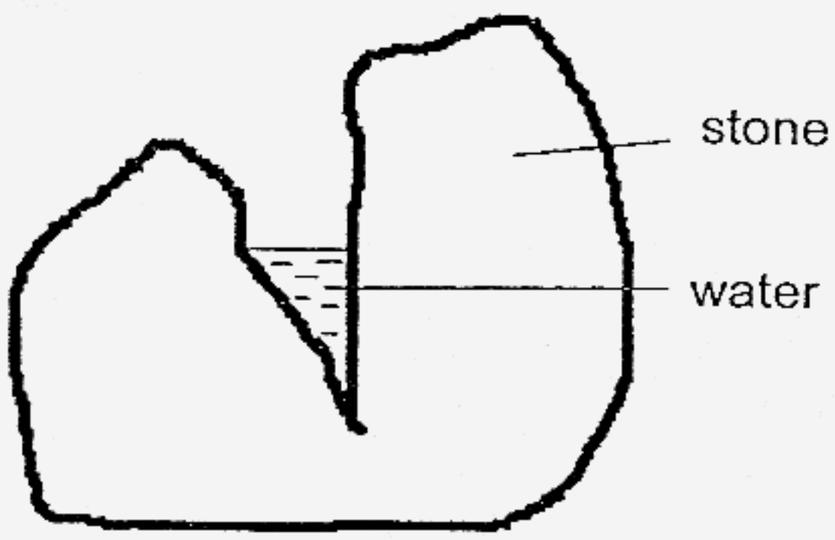
4. Tomoko was walking past a pond when she saw a flower growing above the water surface. She reached for the flower and tried to pull it out of the water. She was surprised to find that the plant grew from below the water surface. Which plant could the flower belong to?

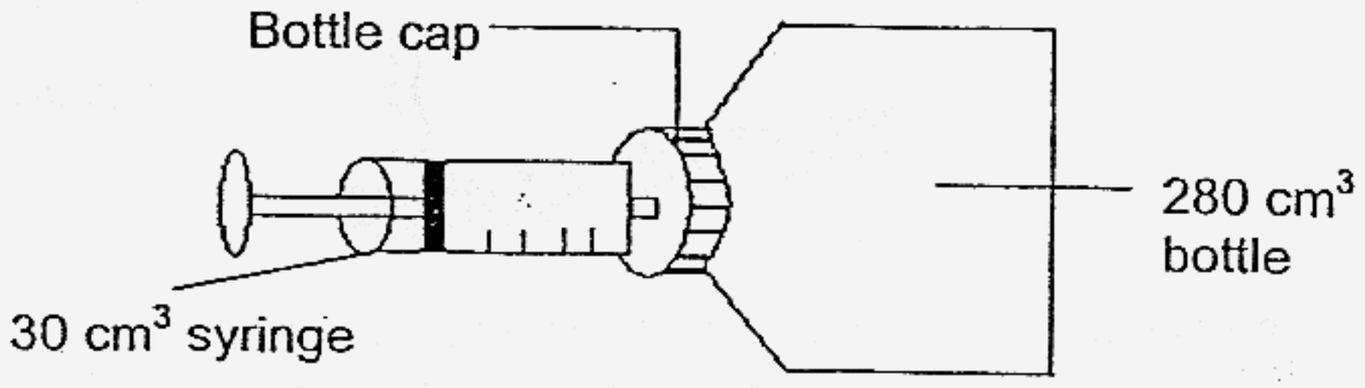
1) Elodea
2) Cabomba
3) Water Lily
4) Water Hyacinth

5. The diagram below shows water trapped in the gap of a stone. The stone is found in a country with the four seasons. Water trapped within freezes and melts according to the seasons. Over many years, the stone split up. This is because the _____ .



1) stone dried up every summer and eventually split open
2) great mass of water collected exerted an outward force
3) liquid water gained heat in summer and expanded outwards
4) ice which formed in the crack expanded and exerted an outward force

6. Hera took a 30 cm^3 syringe and filled it with air. She poked a hole through a bottle cap and pushed all the air out of the syringe into an empty bottle with a capacity of 280 cm^3. After that, she sealed the bottle cap with sticky tape to prevent any air from escaping. What is the volume of air in the bottle now?



1) 30 cm^3
2) 250 cm^3
3) 280 cm^3
4) 310 cm^3

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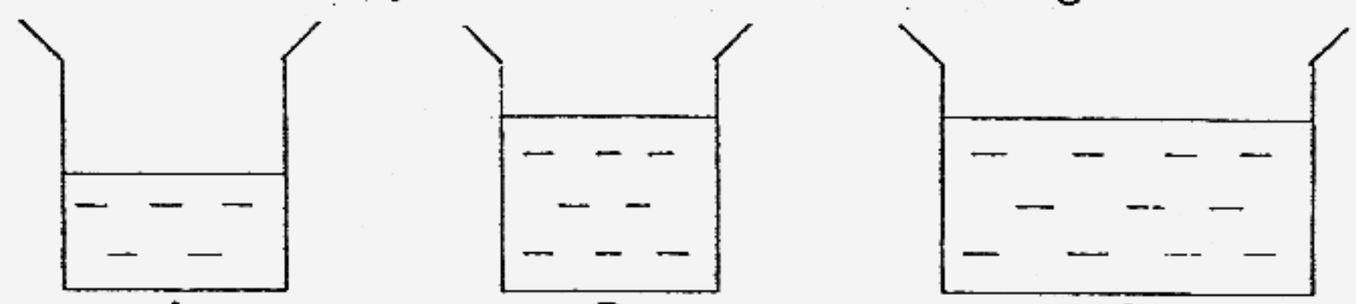
7. The 3 beakers of water below contain different amounts of water at different temperatures. Arrange the beakers of water according to the amount of heat they contain from the least to the greatest.



A least
70°C

B
80°C

C most
80°C

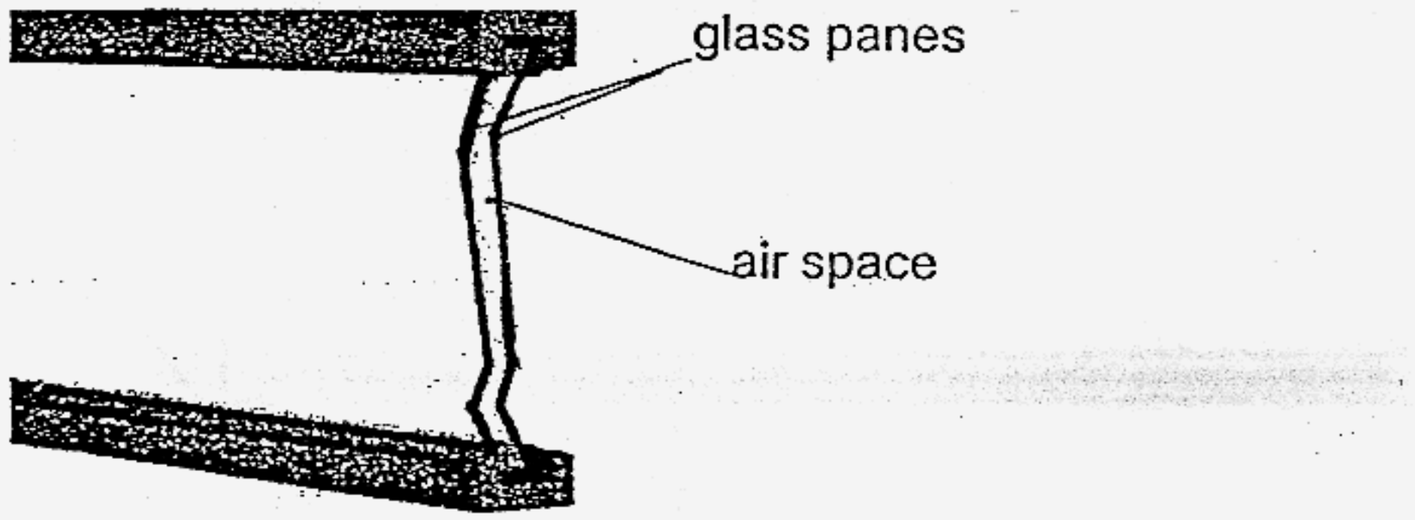
1) A,B,C
2) B,C,A
3) A,C,B
4) B,A,C

8. Nuraliza used object A to try to scratch object B and recorded the results. Based on the table below, classify the objects from the hardest to the softest.

Object A	Object B	Presence of scratch mark	
		Yes	No
Iron last	Steel		√
Steel	Iron	√	
Diamond	Iron	√	
Steel	Diamond		√

1) Iron, steel, diamond
2) Steel, iron, diamond
3) Diamond, steel, iron
4) Steel, diamond, iron

9. The diagram below shows a double window pane. How does this help to insulate heat from the sun?



1) The gap traps heat so that heat cannot pass into the room.
2) Air present in the gap is an insulator of heat and traps the heat.
3) Heat reflects from one glass pane to the other and will be trapped in the gap.
4) Glass is a good conductor of heat. Heat within the room travels quickly out the window through the glass panes.

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Study the diagram below and answer Questions **10** and **11.**

Siok Bee prepared the set-up as shown below. She used a shoe box and poked holes along the sides as shown in diagram 1. She poked a large hole under the hole 5 that was just enough to fit a torch through. She also painted the insides of the box and its lid black. She attached a Styrofoam ball to the underside of the lid with a string. After closing the lid, she switched on the torch and peeked through each hole.

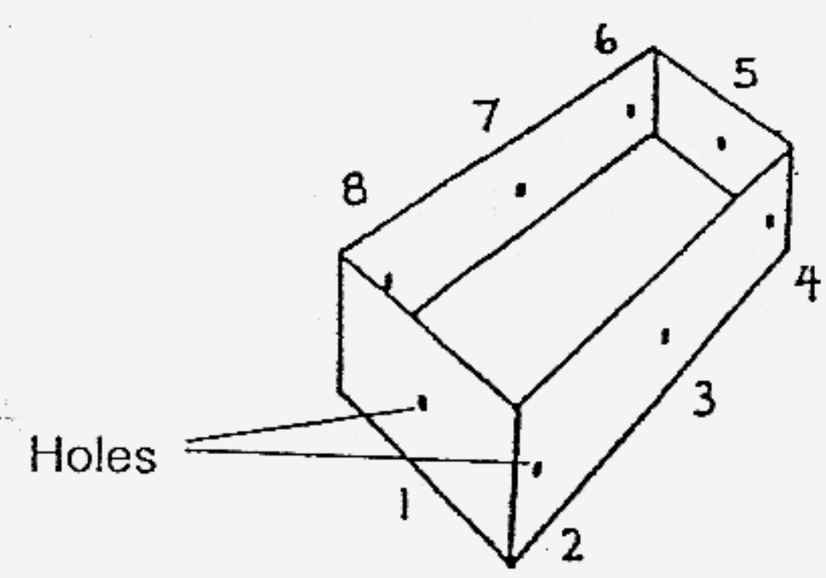


Diagram 1

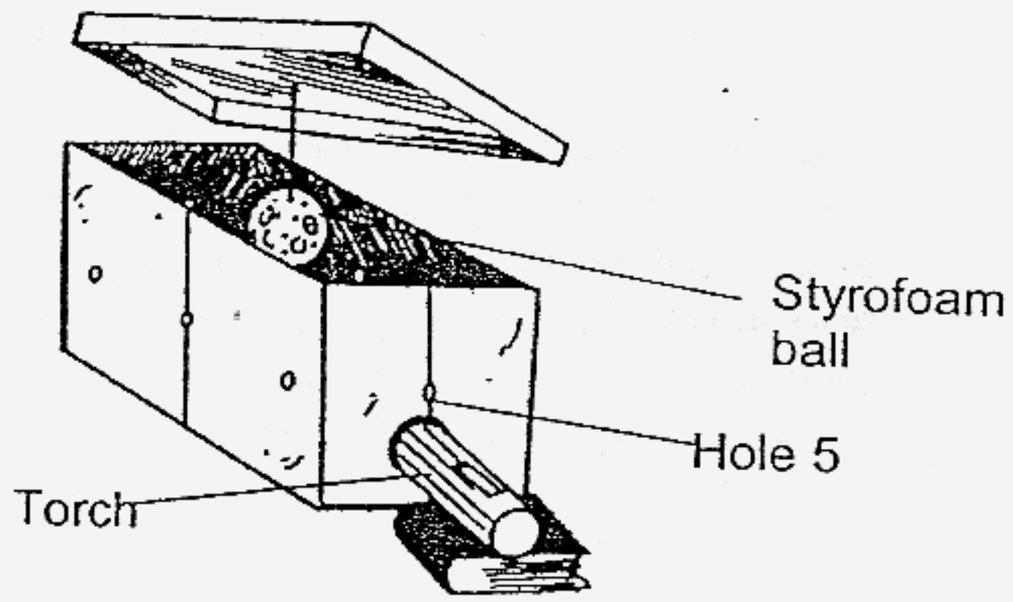
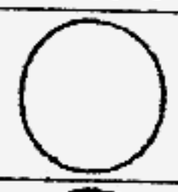


Diagram 2

10. What do the styrofoam ball and torchlight represent?

	Styrofoam ball	Torchlight
1)	Sun	Earth
2)	Moon	Earth
3)	Moon	Sun
4)	Sun	Man-made satellite

11. Siok Bee drew what she saw through each hole. She shaded the area of the ball which she could not see. What would she see if she peeked through holes 1, 4 and 8?

	Hole 1	Hole 4	Hole 8
1)			
2)			
3)			
4)			

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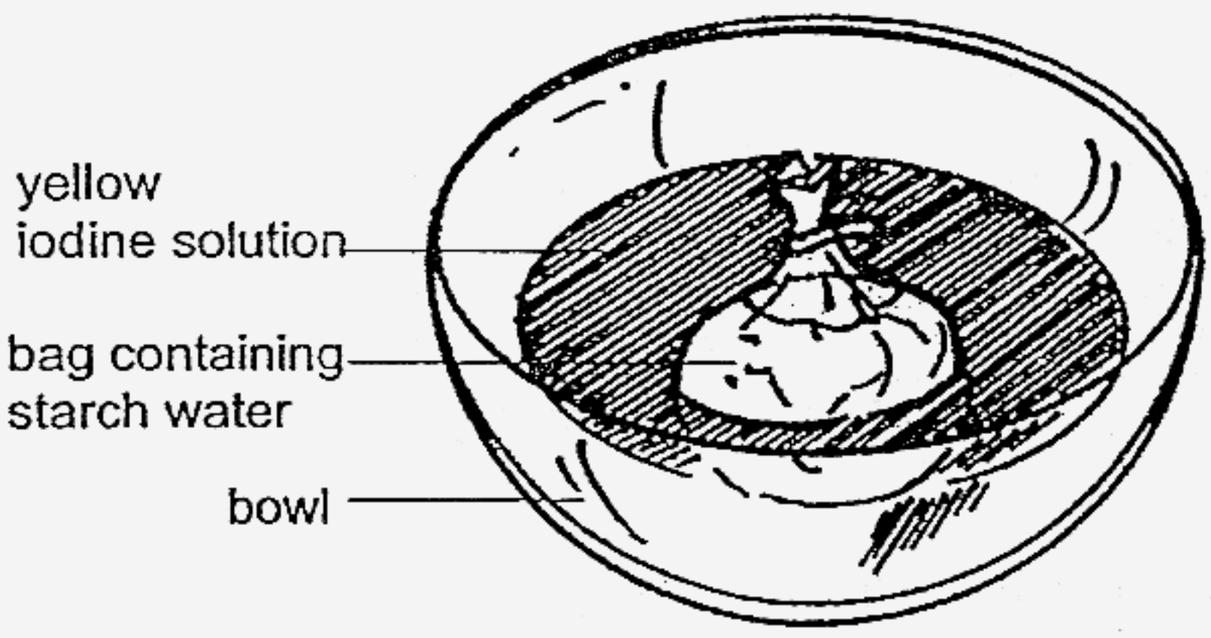
12. Which of the following statements is correct?

1) Moons are sources of light.
2) The Earth gives out a blue light.
3) There are many stars in the Solar System.
4) Not all of the light given out by the Sun passes through the Earth's atmosphere.

Study the diagram below and answer Questions **13** and **14.**

13. Frances dissolved some cornstarch in cold water and poured the solution into a **special** plastic bag. She fastened the bag so that no starch solution can flow out. Next, she prepared a bowl of warm water and added just enough iodine solution which turned the water a light yellow. She placed the bag of mixture into the bowl and swished it around for a minute. She observed that the water inside the bag first turns blue, then black but the yellow iodine water in the bowl does not change colour.



Picture shows the setup **before** the change in colour

What can she conclude?

1) The starch solution turned dark blue.
2) The starch solution passed out of the bag.
3) There was a hole in the bag which allowed the iodine to flow in.
4) The plastic bag allows some substances to pass through but not other substances.

14. What did the **special** plastic bag represent?

1) Sap
2) Nucleus
3) Chlorophyll
4) Cell membrane

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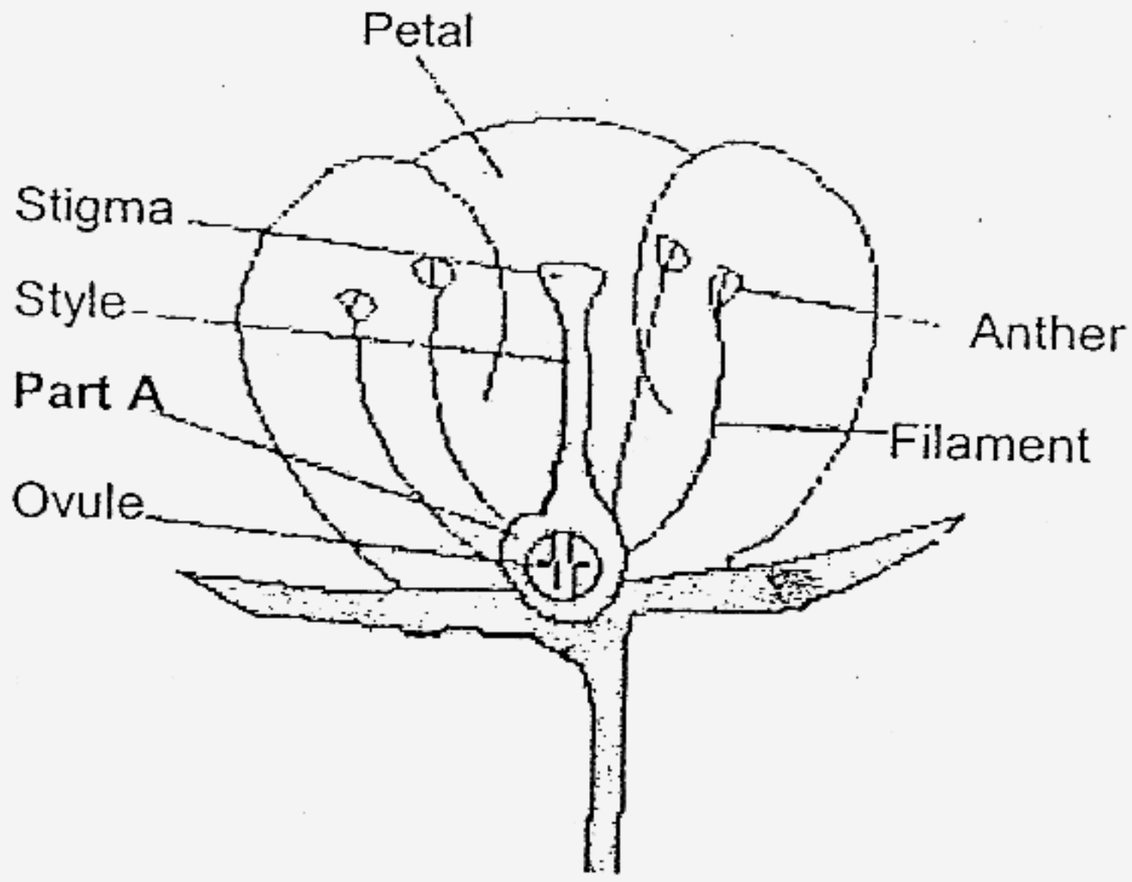
15. What will the part labelled **A** develop into after the flower is fertilised?



1) seed
2) fruit
3) seedling
4) seed leaf

16. Nur placed 5 pieces of coloured paper on a flat, grassy surface. There was 1 piece of paper per colour. She put a few stones around the edges of each coloured paper as paper weights and sat nearby quietly. She made a table below of the number of insects which landed on each coloured paper. What are the possible conclusions based on the findings?

	Fly	Bee	Moth	Gnat	Butterfly
Red	-	2	3	-	5
Yellow	-	12	-	3	-
Green	2	1	-	1	-
Blue	8	-	-	-	-
Purple	1	2	6	-	3

A) Yellow attracted the most number of insects.
B) Moth and butterfly are attracted to the same colours.
C) Different types of insects are attracted to different colours.
D) The bee is attracted to yellow, green, blue and purple colours.

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

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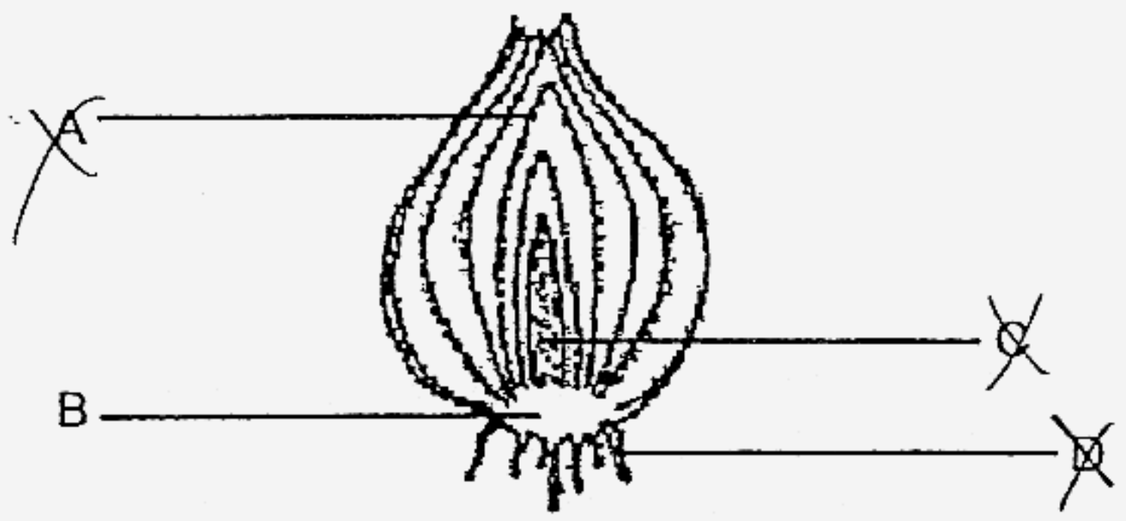
17. Which seed/fruit is dispersed in the same manner as the one shown below?

1) Walnut
2) Coconut
3) Shorea
4) Balsam

18. The diagram below shows the cross-section of an onion bulb. Which part shows the stem?



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

19. Which organisms have been grouped correctly?

	Reproduction Method		
	Spores	**Seeds**	**Stem**
1)	Staghorn fern	Heliconia	Garlic
2)	Toadstool	Bracket fungus	Potato
3)	Grass	Bird's nest fern	Yam
4)	Angsana	African Tulip	Corn

20. In human reproduction, fertilisation takes place when _____ .

1) an egg fuses with a sperm
2) the sperms enter the vagina
3) the sperms enter the ovaries
4) many sperms fuse with an egg

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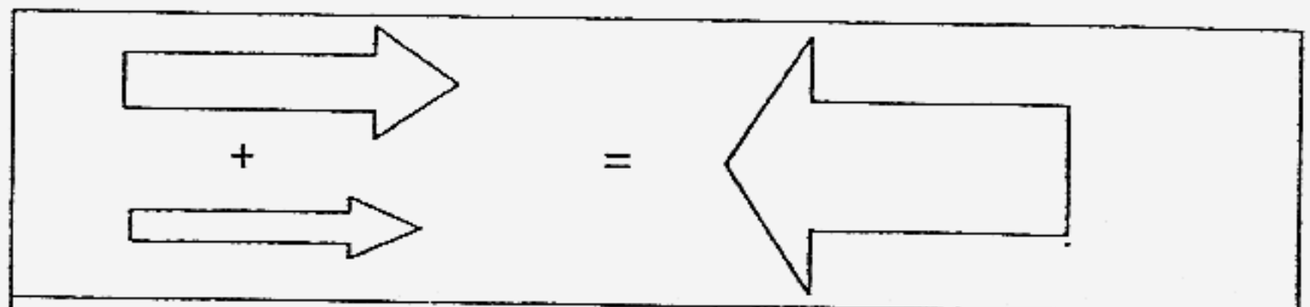
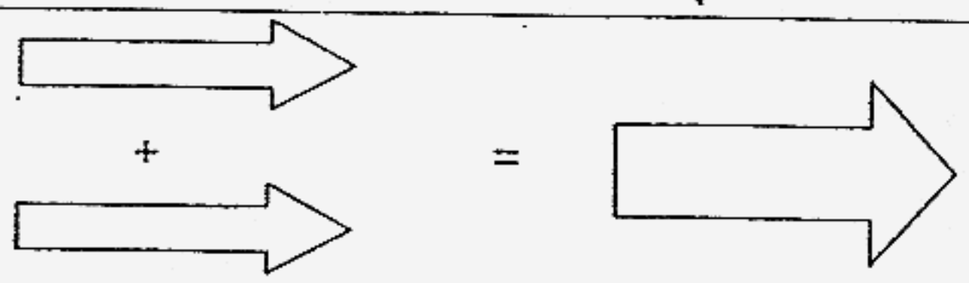
21 The size of the arrow indicates the size of the force. The equations below show the direction and strength of forces applied and the resulting direction and strength of forces. Which equation is correct?

1)



2)



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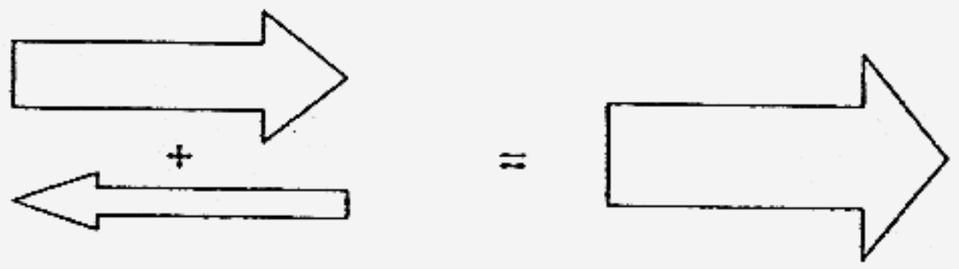

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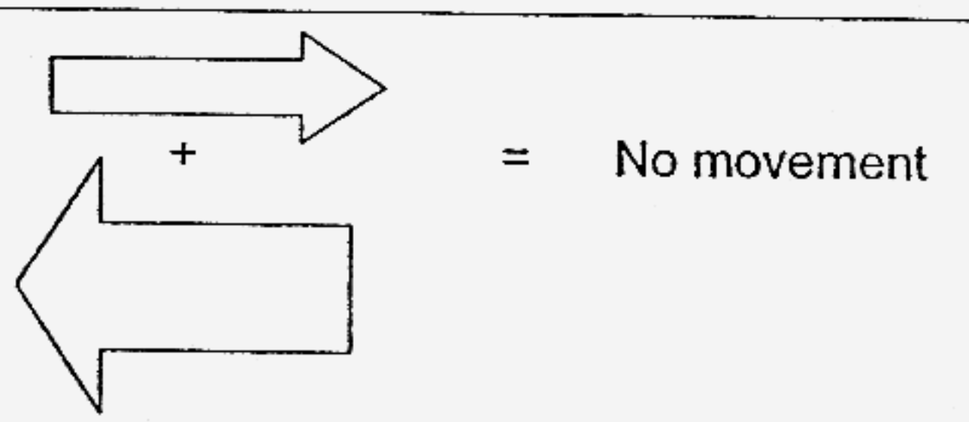
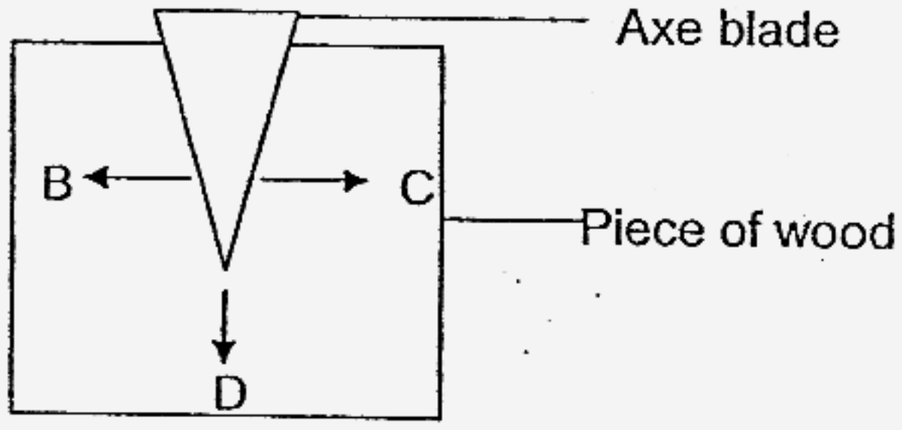


22.



The picture above shows the cross-section view of an axe cutting ~~being cut into~~ a piece of wood. The aim is to chop the wood into 2 smaller parts. Which arrows show the direction of force exerted on the wood?

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

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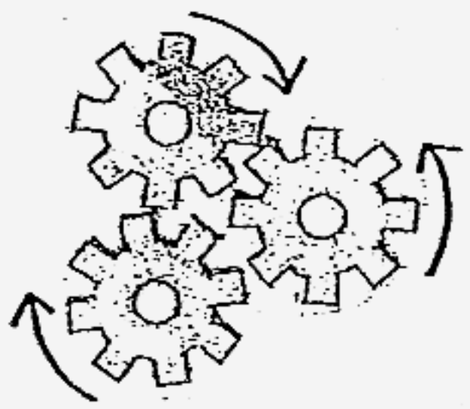
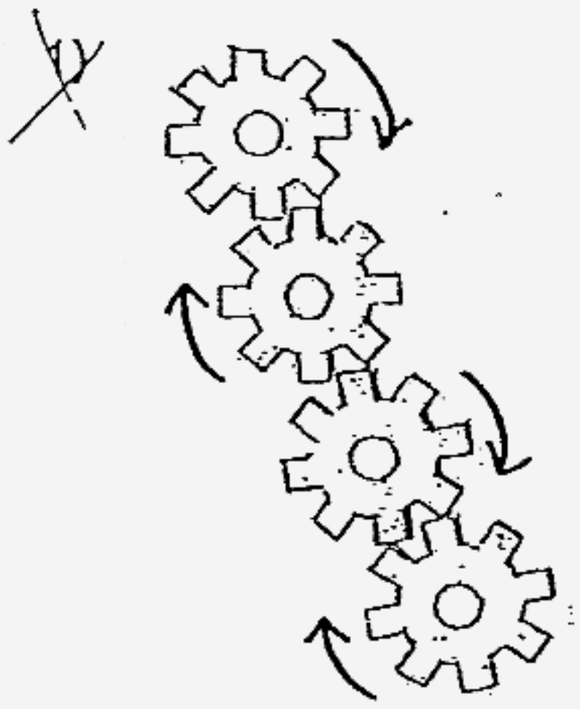
23. A skier can travel straight down a mountain slope but she cannot travel straight back up the slope. She has to zig-zag from side to side, climbing a little with each zig-zag. What type of simple machine is this method of skiing upwards based on?

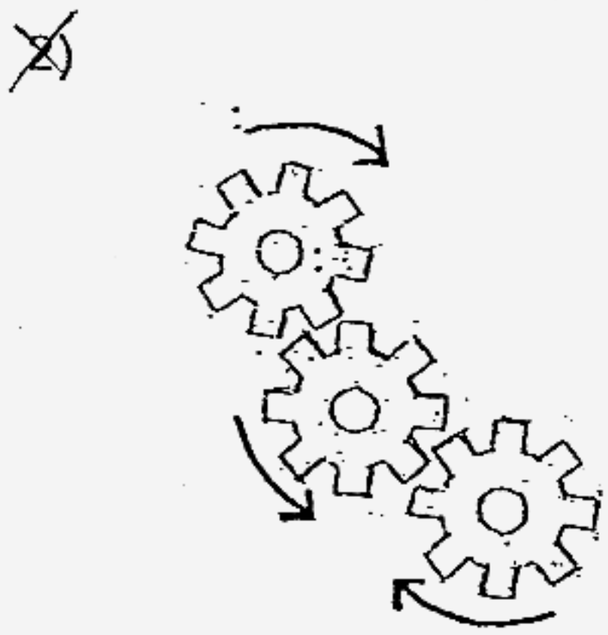
1) Lever
2) Gears
3) Ramp
4) Pulley

24. Which shows the correct movement of the gears?

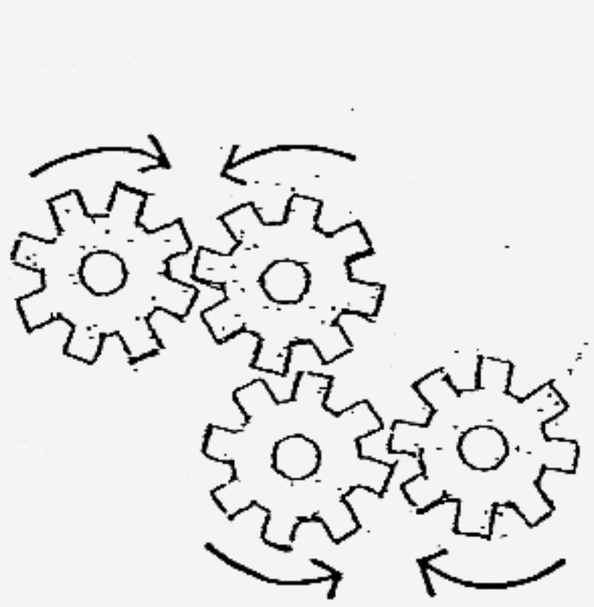
3)







4)



25. Which items are grouped correctly?

	large effort overcomes small load	small effort overcomes large load	change the direction of the force
1)	claw hammer	fishing rod	movable pulley
2)	movable pulley	screw driver	cross spanner
3)	fishing rod	fixed & movable pulley system	fixed pulley
4)	wheelbarrow	bottle opener	gears

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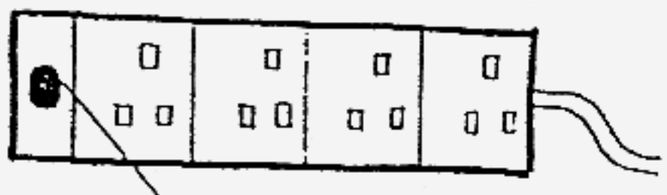
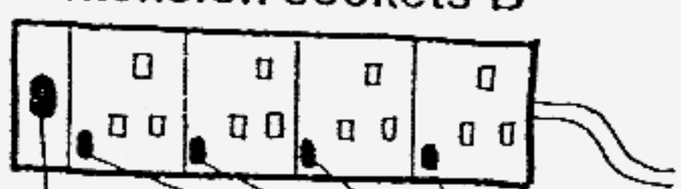
26. When connected to a power source, how many pathways can electricity travel through these extension sockets?

Extension sockets A



Switch

Extension sockets B



Main switch controlling all others

Switches

	No. of pathways	
	A	B
1)	1	4
2)	4	1
3)	1	5
4)	4	5

27. Which is **not** a safe practice when handling electrical appliances?

1) Wearing a pair of gloves to hold frayed wires.
2) Turning off the power supply before fixing an appliance.
3) Placing electrical appliances far away from the bath tub.
4) Using an iron with an insulator around its wires that is burnt.

28. Which practice conserves electricity?

1) Turning on the air-conditioner on a cool day.
2) Turning on the bedroom lights in the afternoon.
3) Switching off the monitor after shutting down the computer.
4) Leave the fully charged mobile phone attached to the charger that has been turned on.

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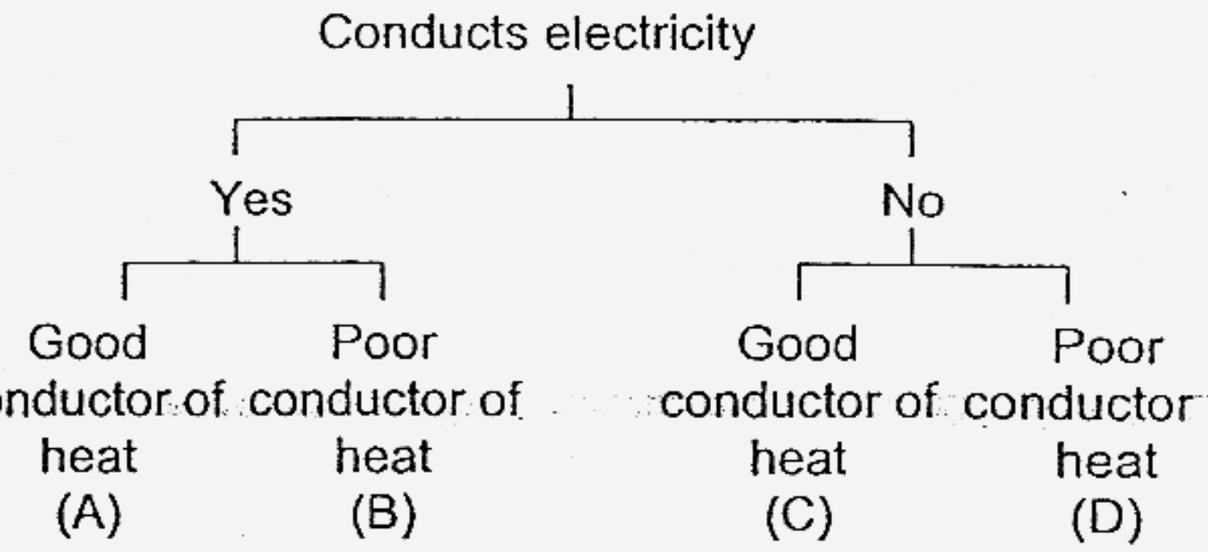
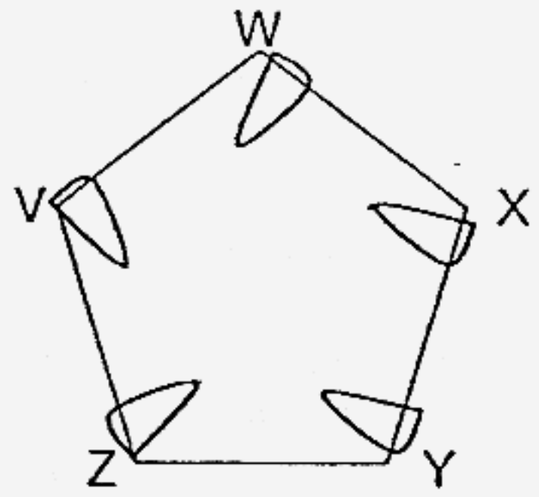
29. Which categories do aluminum and air fall under?



	Aluminum	Air
1)	A	D
2)	A	B
3)	A	C
4)	B	A

30. Some paper clips on the circuit card ~~above~~ below are connected to one another by some wires. Shamsa wanted to find out which paper clips were connected. She attached some wires, a bulb and a battery to some paper clips on the circuit card below. She drew a table to record her findings.



	Whether bulb lit up
V and W	No
W and X	No
X and Z	Yes
Y and Z	No
V and Z	Yes
V and X	Yes
V and Y	No

Which paper clips are connected to one another?

1) Z, X and Y only
2) V, X and Z only
3) Z and X only
4) V and Z only

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SINGAPORE CHINESE GIRLS' SCHOOL

SECOND SEMESTRAL ASSESSMENT 2006

PRIMARY 5 SCIENCE

NAME: _____( ) DATE: 4 October 2006

CLASS: PRIMARY 5 TIME: 1hr 45 mins

Components	Marks obtained	Total Marks
Booklet A		60
Booklet B		40
Total		100

_____

Parent's signature

SCIENCE

BOOKLET B

16 questions

40 marks

Total Time for Booklets A & B: 1h 45min

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FOLLOW ALL INSTRUCTIONS CAREFULLY.

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Booklet B (40 marks)

Write your answers for Questions 31 to 46 in this booklet.

31. Classify the items below in the table correctly. (3m)

feather	saliva	plastic bag	toe nail
pebble	compact disc	tusk	hair

Contains cells	Do not contain cells

32. Which part of a plant cell has the same function as a solar panel which traps light energy? (1m)

_____

33a. Some organisms go through a type of cell division known as budding. What is the use of budding? (1m)

_____

b. State two organisms that undergo budding. (2m)

_____

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34. After Liting returned home from playing soccer in the field, she flung her worn socks aside.

a. Name a type of plant$/seed$/fruit$ that could be found on the socks? (1m)

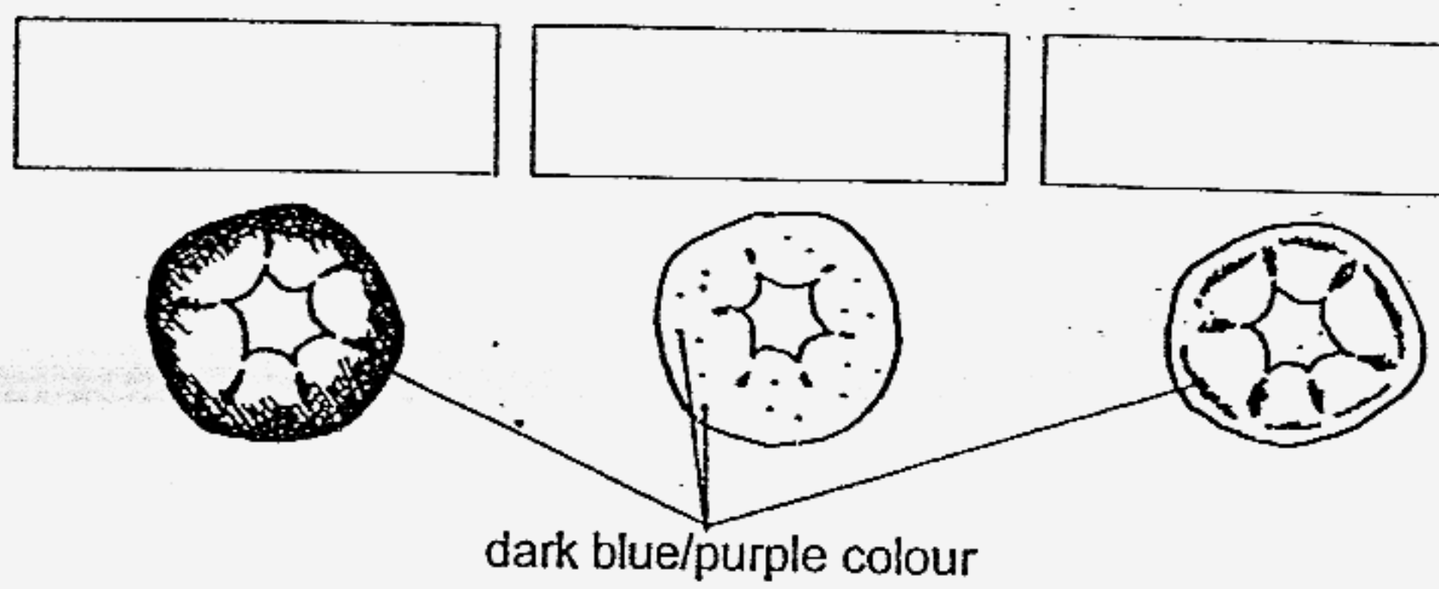
b. Using your answer in part (a), explain how it ended up on Liting's socks. (2 m)

35. These are the steps that Kaur took in her experiment:

1. Select 1 unripe green apple, 1 ripening apple and 1 fully ripe apple.
2. Cut each apple into half in the same way.
3. Apply iodine solution to the exposed flesh of one-half of each apple using a new cotton bud each time.
4. Wrap up the apple halves with iodine solution in aluminum foils.

After 5 minutes, Kaur removed the aluminum covers to look at the result.

a. During Science lesson, Kaur's teacher explained that ripe apples are sweet as they have a lot of natural sugar whereas unripe apples have very little or no sugar. Fill in the blanks below with the words 'unripe', 'ripening' and 'fully ripe'. (3m)



b. What conclusion can Kaur draw? (1m)

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36a. Give an example of a simple machine that has the working principle of a wheel and axle. (1m)

_____

_____

b. Explain how the simple machine in part (a) helps man to do work with less effort. (1m)

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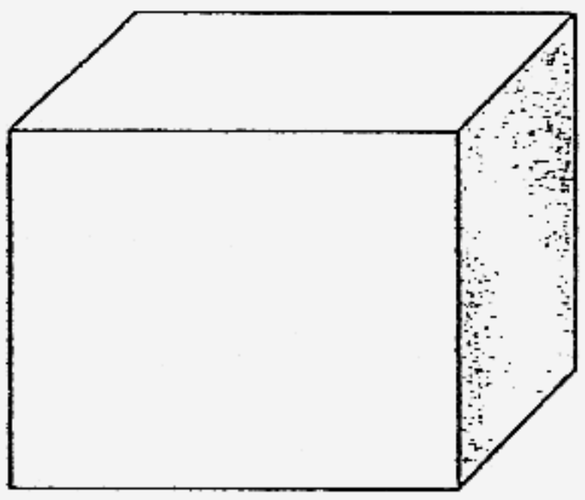
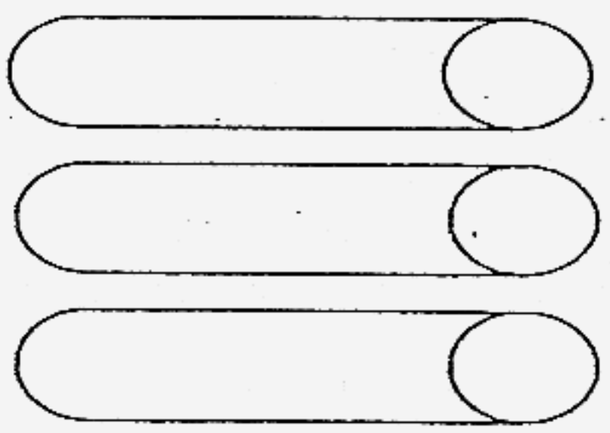
37. Janet wants to move a heavy concrete block 5 metres across the room. She has the materials below. Janet intends to use the logs to help her move the concrete blocks more easily.



Concrete block



3 logs

Suggest a way in which Janet can move the concrete block 5 metres using the 3 logs. (1m)

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38. Vita conducted an experiment to find out how dusty the air was in three different places. She took along a mirror and laid it at each place. She recorded the appearance of the mirror surface at the different places.

Appearance of mirror surface			
Period	8 am – 2pm	2 pm – 8pm	8 pm – 12 midnight
Place	Construction site	Multistorey carpark	Air-conditioned food court

a. What **two** changes should Vita make for her experiment to be fair? (2m)

b. Give a reason for your answer to part (a). (1m)

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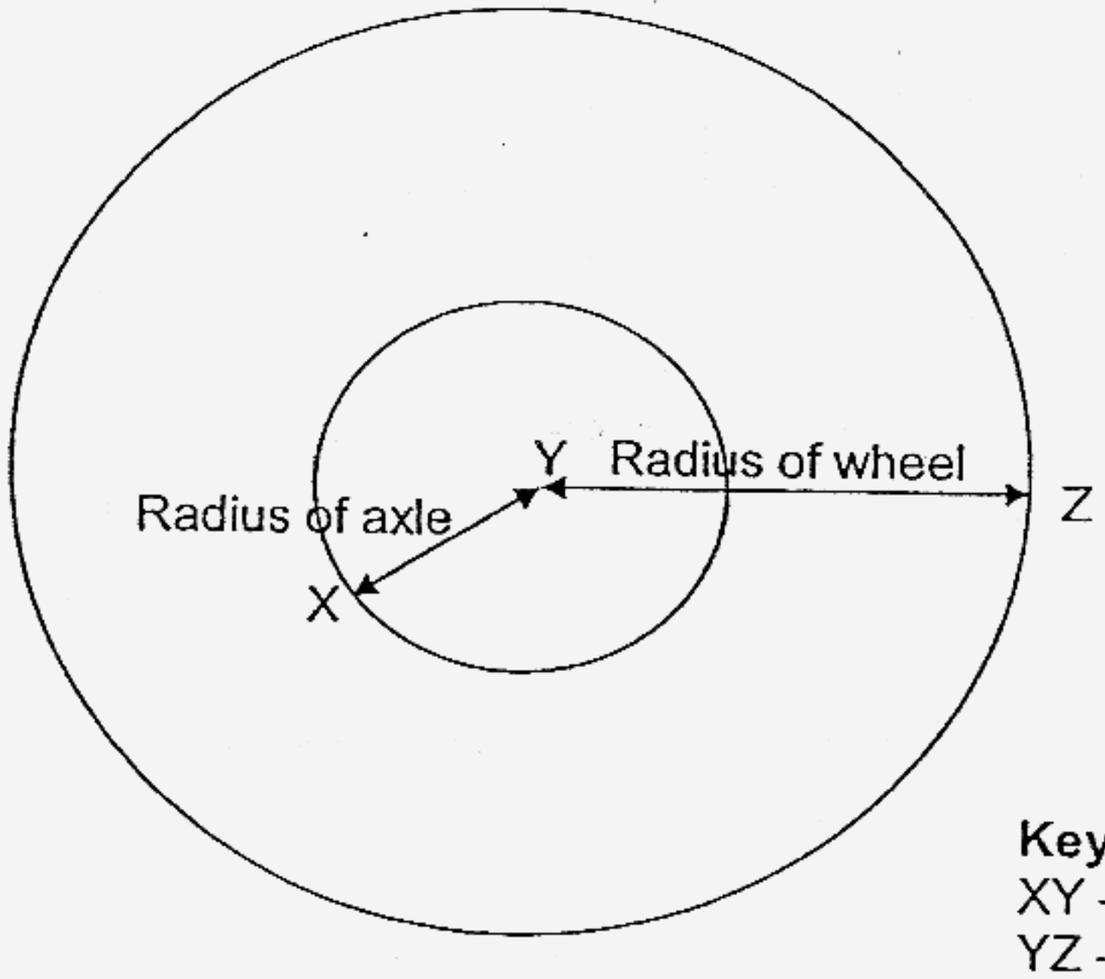
39. Study the diagram and table below. Jeremy ensures that the radius of the wheel always remains the same at 100cm but uses axles of different radii.



Key:
XY – radius of axle
YZ – radius of wheel

Radius of axle (cm)	Effort used (kg)
50	5
40	4
30	3
20	2
10	1
5	?

a. Based on the data from the table above, what is the relationship between the radius of axle and the effort used? (1m)

_____

b. How much effort is used if the radius of the axle is 5cm? (1m)

_____

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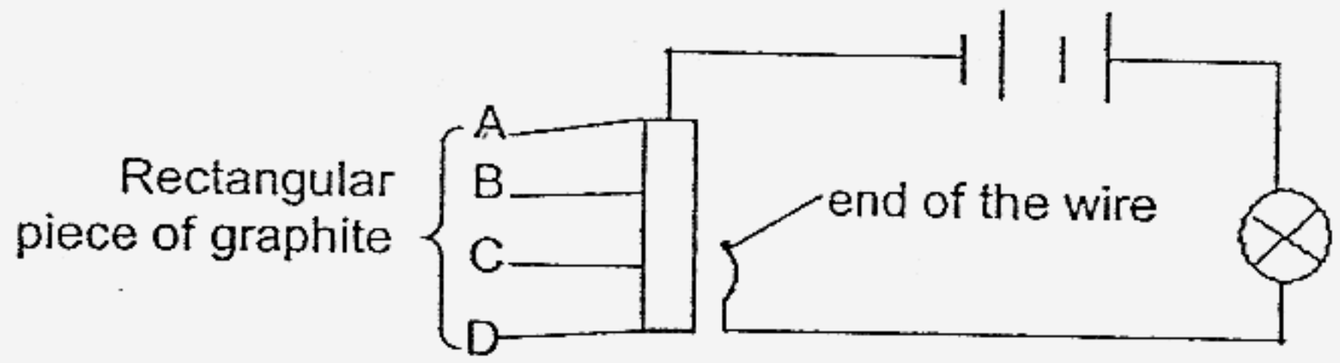
40. Tomoko was eating ice-cream served in a clear glass. She noticed a layer of thin ice on the outer surface of the glass. Explain how the layer ~~of the layer~~ of thin ice was formed. (3m)

41. Kumar set up the circuit below. As the end of the wire moves along points A, B, C and D of the graphite, the brightness of the bulb changes. The brightness of the bulb decreases as the end of the wire moves from A to D.



a. How do we know that graphite is a conductor of electricity? (1m)

b. Apart from finding out whether graphite is an electrical conductor, what else was Kumar testing? (2m)

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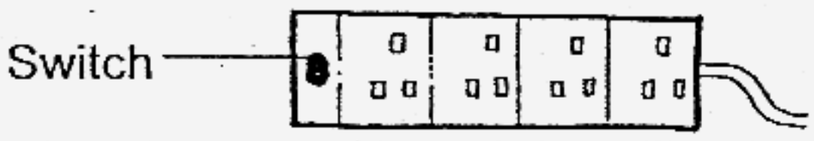
42.



a. Gertrude is using extension sockets like the one in the diagram above to turn on many appliances at one time. How are the sockets arranged in the circuit? (1m)

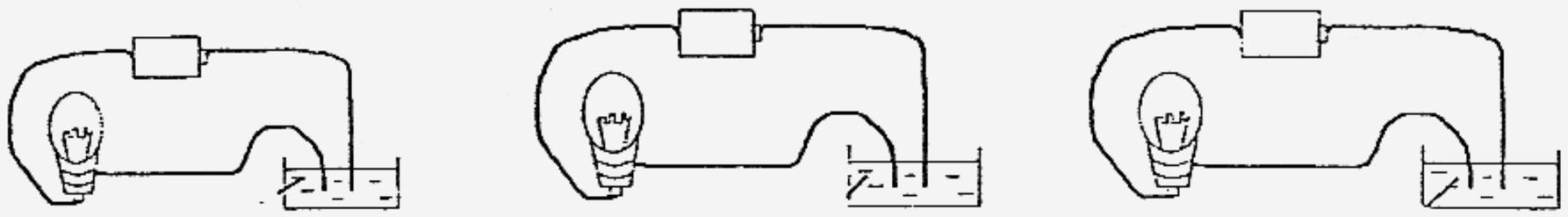
_____

Gertrude wants to control each appliance separately. That means, she wants to turn on the television set without turning on the radio, DVD player and fan.

b. How should the extension sockets be arranged? (1m)

_____

43. Alice prepared three set-ups below.



Lemon juice | Tap water | Melted glass

Set-up A | **Set-up B** | **Set-up C**

a. What happened when the ends of the wires are immersed in the lemon juice as shown in **Set-up A**? (1m)

_____

b. What happened when the ends of the wires are immersed in melted glass as shown in **Set-up C**? (1m)

_____

c. What was Alice trying to find out based on her three experimental set-ups? (2m)

_____

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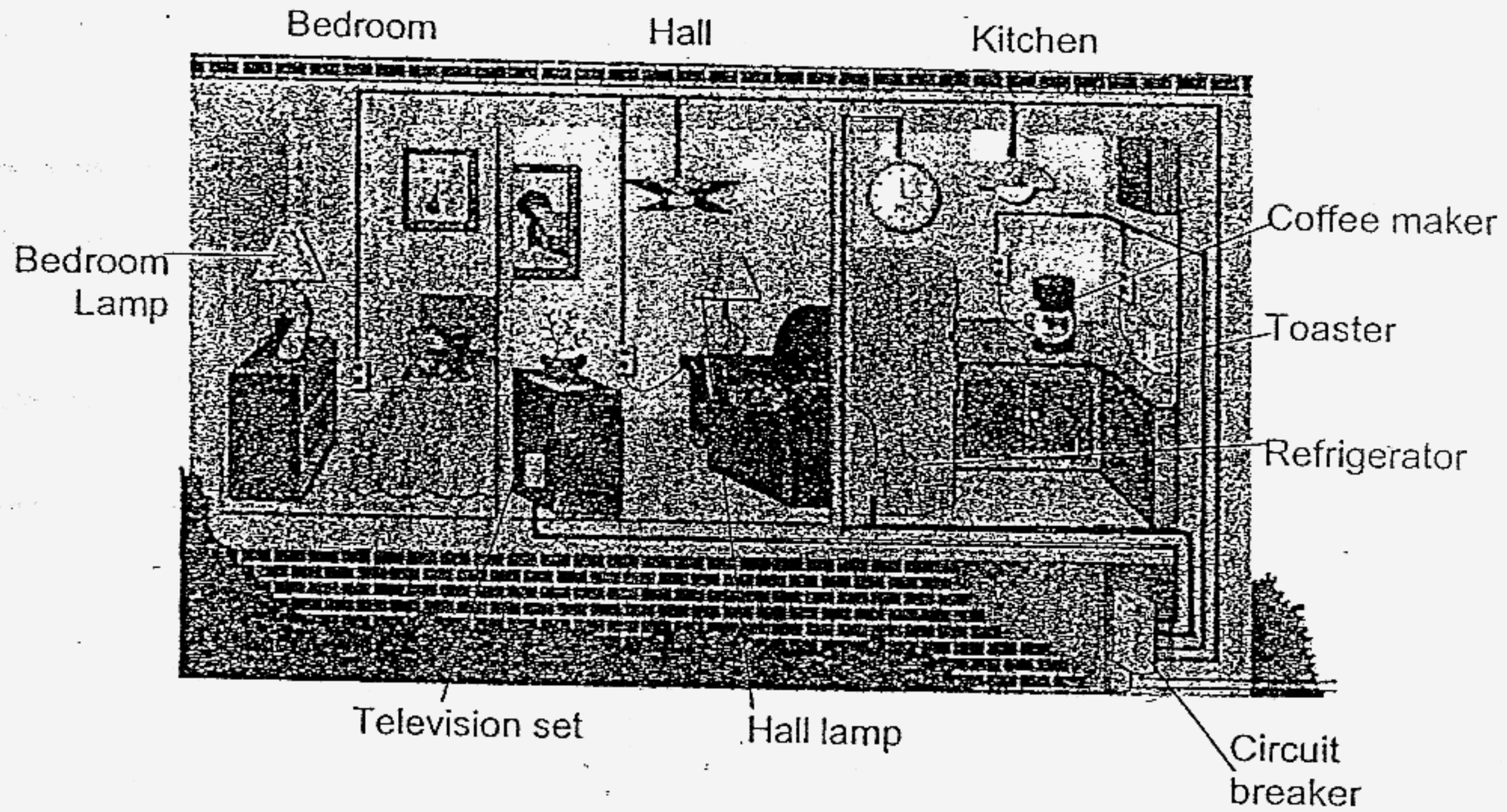
44. The picture below shows the circuits within the bedroom, living room and kitchen of a household. The diagram shows 9 separate electrical appliances and how they are connected in a household.



a. If the circuit with the clock is overloaded, the circuit breaker opens the circuit. Which other appliance(s) will be turned off too? (1m)

_____

b. How many separate circuits are there in this household? (1m)

_____

45. How does a fuse help to prevent a circuit from overheating? (2m)

_____

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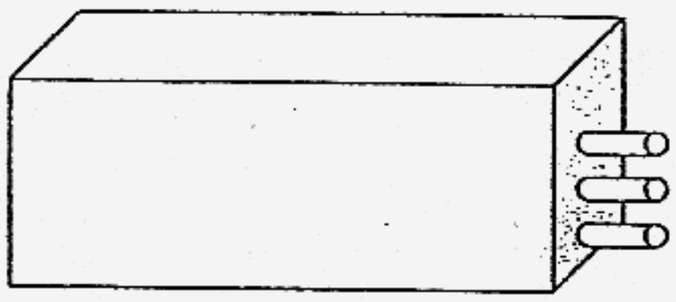
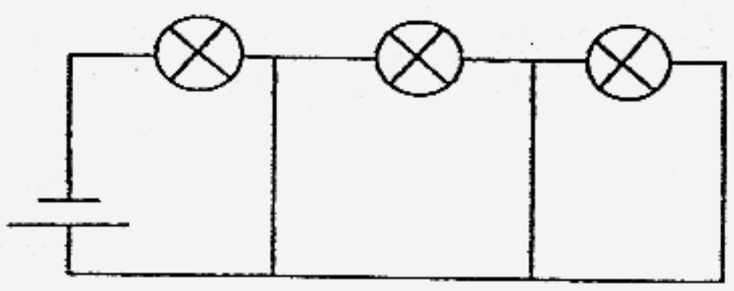
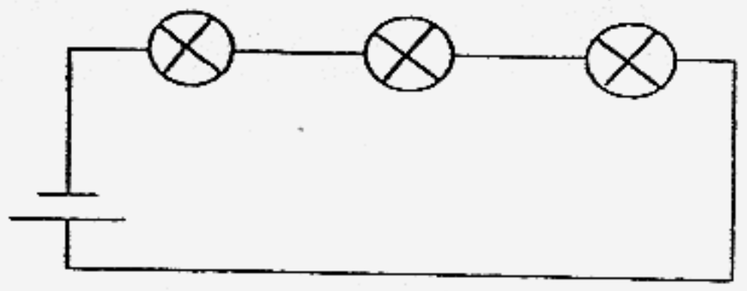
46. The diagram below shows a water tank. The pipes attached to the tank are pathways for water to flow out. The greater the number of pipes, the greater the volume of water that flows out. **The flow of water out of the tank and the electricity flowing through the circuit are similar.**



Based on the similarity between water flowing out of a tank and an electric circuit, explain why the battery of a parallel arrangement will run out faster than the battery in a series arrangement.
(Take note that all else in the two circuit arrangements remain the same.) (2m)





Have you checked your work thoroughly?

Acknowledgements:
Pictures of questions 10,11,13,14 & 35 were taken from Vecchione, G. (2005). 100 First-Prize Make-It-Yourself Science Fair projects New York: Sterling Publishing Co., Inc.
Picture of question 9 were taken from (2000) Science Explorer: Motions, Forces and Energy New Jersey: Prentice-Hall, Inc.
Picture of question 44 was taken from (2000) Science Explorer: Electricity and Magnetism New Jersey: Prentice-Hall, Inc.

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Singapore Chinese Girls' Primary School

SECTION A : (60 MARKS)

Qn no.	Ans
1	2
2	4
3	4
4	4
5	3
6	3
7	1
8	3
9	3
10	3

Qn no.	Ans
11	3
12	4
13	4
14	4
15	2
16	1
17	3
18	2
19	2
20	1

Qn no.	Ans
21	2
22	1
23	3
24	2
25	4
26	3
27	4
28	3
29	2
30	2

SECTION B (40 MARKS)

Qn No. 31a. Answers

Contains cells	Do not contain cells
saliva	pebble
toe nail	compact disc
hair	plastic bag
feather	
tusk	

32a.	Chlorophyll

33a.	Budding is used for reproduction.
33b.	Yeast and bacteria

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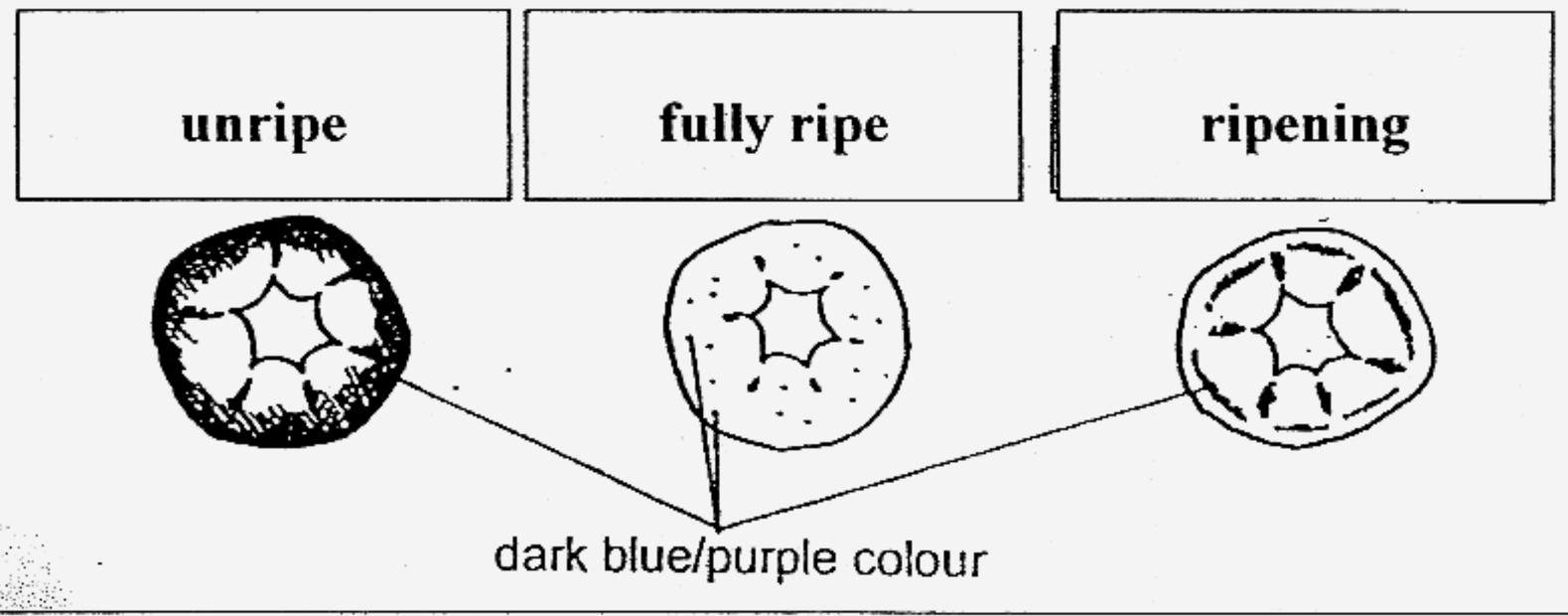
Qn No.	Answers
34a.	Plant : Love grass
	Seed : mango
	Fruit : tomato
34b,	It is by animal dispersal. The love grass has hooks.

35a.	
35b.	The riper the apple, the more starch is present.

36a.	Egg-beater, cross spanner, windlass , brace and bit
36b.	It helps to make work easier by enabling us to use less effort to overcome a heavy load.

37.	Put the concrete block on the 3 logs and used them as wheels. As the concrete block rolls, Janet must keep shifting the 3 logs in front of each other.

38a.	She should clean the windscreen before the start of each period and the place must be the same.
38b.	Dust will add onto the amount of dust collected during the previous period. As a result, the next period will always collect more dust unless the windscreen is cleaned.

39a.	The bigger the radius of axle, the more effort is used.
39b.	0.5kg

40a.	The warm water from the surrounding air condensed into cool surface of the glass. The water droplets lost heat to the ice-cream and formed a thin layer of ice,
Qn No.	Answers

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41a.	The bulb lights up when the end of the wire touches it.
41b.	He was testing whether the amount of graphite how it conducts electricity.

42a.	It arranged in series.
42b.	It should in parallel.

43a.	The bulb will light up.
43b.	The bulb will not light up.
43c.	To find out which liquids are conductor of electricity.

44a	The refrigerator
44b	1

45a	It helps by stop the current of the flow of electricity.

46.	The greater the number of wires, the more electricity is used.

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