RA	FFLES GIRLS' PRIMA	RY SCHOOL	Practical 10%	Your sout of 1	
	SEMESTRAL ASSESSMENT (2) 2010		Section A 50%		
	2010		Section B 40%		
		Class: D.4		Class	Level
Name :	Index NO:	Index No: Class: P 4			
28 th October 201	0 SCIENCE	Att: 1 h 20 min	score		· · · ·
SECTION A (25)			Average score		<u> </u>
For each question them is the corre	n from 1 to 25, four options are ct answer. Make your choice (1 t oval on the Optical Answer St	, 2, 3 or 4).	Parent's signature		·

1. A snall hides itself in its shell when touched.

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onian

This shows that the snail is a living thing because it can _____

(1) grow

i

- (2) breathe
- (3) respond
- (4) reproduce

2. The table below shows how some living things can be grouped.



Which one of the following is the most suitable sub-heading for group X?

- (1) fungi
- (2) insects
- (3) bacteria
- (4) mammals

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3. The flow chart below shows how some living things are grouped.



Based on the flow chart above, which one of the following is correct?

Γ	W	X	Y	Z
-	kiwi	fern	balsam plant	toadstool
-	pigeon	balsam plant	toadstool	fern
F	pigeon	kiwi	mushroom	fern
-	sparrow	penguin	balsam plant	mushroom

4. The picture below shows an organism X.



Some facts about organism X are as follows:

- It has a 3-stage life cycle.
- It moults several times before it becomes an adult.
- Its young does not have wings but it resembles the adult.

The following pupils, Ada, Bernice and Carmen, made some comparisons between organism X and some animals.

Ada	: Both the frog and organism X have the same number of stages in
	its life cycle.
Bernice	: Both the young of the butterfly and organism X moult several times before they become adults.
Carmen	: Both the young of the mealworm beetle and organism X resemble the adults.

Which of these pupils made the correct statement(s)?

- (1) Ada only
 - (2) Ada and Bernice only
- (3) Bernice and Carmen only
- (4) Ada, Bernice and Carmen

Some animals are put into two groups, Group 1 and Group 2. 5.

Group 1	Group 2
R	S
ostrich	butterfly
penguin	mosquito
grasshopper	mealworm beetle

Which one of the following can animals R and S possibly be?

R	S
platypus	ladybird
ladybird	eagle
sparrow	chicken
pigeon	frog

(1) (2)

(3) (4) 6. The diagram below shows the growth of a young plant with two missing stages, P and Q.



Which one of the following shows the correct stages at P and Q?





7. Which one of the following shows the life cycle of a flowering plant correctly?

8. Which of the following statements about saliva are true?

- A Saliva is a liquid.
- B Saliva helps to digest food.
- C Saliva is produced in the stomach.
- D Saliva makes food easier to swallow.
- (1) A and C only
- (2) C and D only
- (3) A, B and C only
- +. (4) A, B and D only

7

The diagram below shows the movement of food from one part to another part of a man's digestive system.

P, Q and R are parts of the digestive system.



Which one of the following identifies these parts, P, Q and R, correctly?

	part P	part Q	part R
(1)	gullet	stomach	small intestine.
(2)	mouth	gullet	small intestine
(3)	mouth	stomach	small intestine
(4)	stomach	small intestine	large intestine

9.

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Marcus conducted an experiment using the following set-ups.



Four identical beakers were filled with an equal amount of water and a layer of oil. The layer of oil prevents the water from evaporating.

What could Marcus observe of the water levels of the coloured water in the beakers after three days?

	set-up A	set-up B	set-up C	set-up D
)	no change	decrease	decrease	decrease
)	no change	decrease	no change	decrease
	decrease	no change	decrease	no change
ſ	decrease	decrease	no change	decrease

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11. The diagram below shows a young seedling with part Q.



The following students, Anne, Bernard, Charles and Debbie, made some statements about part Q of the young seedling.

Anne

: Q makes food for the adult plant.

Bernard : Q traps light for the seedling to make food.

Charles : Q takes up water and minerals for the seedling.

Debbie

: Q provides food for the seedling before its leaves appear.

Which of these pupils made the correct statement(s)?

- (1) Anne only
- (2) Debbie only
- (3) Anne and Bernard only
- (4) Bernard and Charles only

12. Some objects, each made of one or more different materials, are grouped as shown below.



Which one of the following is a set of suitable sub-headings for the objects in groups P, Q and R?

	P	Q	R ·
(1)	plastics only	metal only	wood only
2)	wood and metal	wood only	plastics only
3)	wood only	plastics only	wood and metal
4)	plastics only	metal only	wood and metal

13. The umbrella shown below is described as follows:

- It is convenient to use.

- It is NOT easily damaged.



Which of the following is an / are important property / properties of part X that must be considered when making the umbrella?

- A light
- B strong
- C flexible
- D transparent

B, C and D only

(1) A only

(3)

- (2) A and B only
- (4) A, B and D only

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14. Some sand particles and a tennis ball were each placed on a similar weighing scale as shown below.



Based on the information above, which of the following statement(s) about the sand particles and tennis ball is/ are true?

- A Both the sand particles and tennis ball have mass.
- B The tennis ball has a definite volume but sand particles do not.
- C The total mass of the sand particles is greater than the mass of the tennis ball.

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

15. The diagram below shows some liquid Y in a measuring cylinder.



What is the volume of liquid Y?

(1)	50 ml	(2)	52 ml
(3)	62 ml	(4)	68 ml



Mike placed a metal container between a torch and a screen as shown below.

Based on the diagram above, answer questions 16 and 17.

16. Which one of the following shows the shadow formed on the screen?



17. What could Mike do to enlarge the shadow on the screen?

A He could move the container closer to the torch.

B He could move the container closer to the screen.

- C He could move the torch away from the container and screen.
- (1) A only
- (2) B only
- (3) A and C only
- (4) B and C only

18. Jim placed an object X, which could glow in the dark, in container A. Next, he inserted a pipe into the hole of container A. He looked through the pipe to see if he could see object X.

Jim did the same with object X in three other containers, B, C and D, ONE at a time, each time using a different pipe as shown in the diagrams below.

All the containers and pipes were made of the same opaque material.



Which of these containers could possibly allow Jim to see the glowing object ${\sf X}$ within it/ them?

- (1) A only
- (3) A, C and D only

(2) B and C only

- (4) B, C and D only
- 19. Which one of the following plates is the best conductor of heat?
 - (1) metal plate (2) paper plate
 - (3) plastic plate (4) wooden plate

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20. Fatimah had 4 identical cups in the following set-ups, W, X, Y and Z.



She wanted to find out which material is a better/ the best conductor of heat. Which of these set-ups could Fatimah use to make a fair comparison?

(1) W and X only

(3)

- W, X and Y only
- (2) Y and Z only
- (4) X, Y and Z only

21.

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The diagrams below show three identical flasks, X, Y and Z.



Flasks X and Y contained an equal amount of water at different temperatures.

All the water in flasks X and Y was poured into an empty flask Z. The temperature of the water in flask Z should be _____

(1)	below 25°C		(2)	between 25°C	and 40°C	•
(3)	40°C	•	(4)			

22. In which one of the following diagrams will the two magnets push each other away?



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23. A magnet is brought near a ball. The ball moves towards the magnet in the direction as shown in the diagram below.



Which one of the following materials is possibly used to make the ball?

(1) steel

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(3) rubber

- (2) wood
- (4) plastics

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24. Yukie held a bar magnet directly above a metal paper clip tied to a weight by a string. The magnet pulled the paper clip up as shown in the diagram below.



When Yukie placed a thin sheet of material X between the magnet and the paper clip, the paper clip remained suspended in the air.

What could material X be?

A glass

B nickel

C wood

D copper

(1) A and C only

(2) B and C only

(3) B and D only

÷.

(4) A, C and D only

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Jayne set up the following apparatus to compare the magnetic strength of 25. magnets A, B, C and D.



Using the same pin, Jayne measured the greatest distance from which the pin could be attracted to one end of each magnet, ONE at a time.

magnet	distance between magnet and pin (cm)
A	5
B	9
С	3
D	12

She tabulated her results as shown below.

Based on the information above, which one of the following conclusions that Jayne made is correct?

- Magnet A was stronger than magnet C. (1)
- Magnet B was as strong as magnet D. (2)
- Magnet C was the strongest. (3)
- Magnet D was the weakest. (4)

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SECTION B (40 marks)

For questions 26 to 39, write your answers clearly in the spaces provided.

The number of marks available is shown in brackets [] at the end of each question or part question.

26. The picture below shows an animal Q.





Based on your observations, which of the following descriptions fit(s) animal Q? Put a tick ($\sqrt{}$) in the correct box(es) below.

[1]

 can fly	
has 6 legs	



has a pair of feelers

27. The table below shows the duration of time taken for animal Y to change from one stage to another in its life cycle.

stage in the life cycle of Y	duration of each stage (number of days)
egg	. 5
nymph	365
adult	120

(a) Based on the information above, what is the least number of days taken for animal Y to reach its adult stage from the time the fertilised egg is laid? [1]

_____ days

The nymph of animal Y moults several times before reaching its adult stage.

(b) Explain why the nymph of animal Y needs to moult several times. [1]

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28. Choose the correct words from the box to answer the questions below.

gullet	large intestine	mouth	small intestine	stomach
.1	•			-
		-		•

For each of the following, name a part of a human digestive system where

- (a) partial digestion first takes place : _____ [1]
- (b) absorption of digested food takes : _____ [1] place

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29. Ralph created a model of the human digestive system and labelled its parts as shown below.



- (a) Describe clearly what happens to the food at part C. [1]
 (b) Ralph said," Digestion ends at F before waste is discharged from it."
 - Is his statement correct? Explain your answer.

(c) State the main function of part E.

[1]

[1]

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Ralph had health problems so his doctor removed a portion of part E of his digestive system in December 2009.

Amount of Water in Ralph's Faeces from Jan to March 2009 and 2010 60 amount of water (units) 50 40 30 20 10 Ó Jan 2009 Feb 2009 March 2009 Jan 2010 Feb 2010 March 2010 Month and Year amount of water in the faeces in 2009 amount of water in the faeces in 2010

The diagram below shows the amount of water in Ralph's faeces for the first three months in 2009 and 2010.

Ralph maintained a similar diet in 2009 and 2010.

Based on the graph above, answer the following question:

Compare the amount of water in Ralph's faeces between the two periods, January to March, for 2009 and 2010.

(d) State the difference in the amounts of water in his faeces before and after a portion of part E of his digestive system was removed. [1]

30. The diagram below shows two plants, A and B.



Fill in each blank with a suitable word.

[2]

(a) State one difference between the stems of plants A and B.

The stem of plant A is _____ than the stem of plant B.

(b) The leaves help both plants to make ______ in the light.

(c) Name the conditions necessary for seeds to grow their first roots. [2]

31. Priva wants to use either bag A or bag B to pack the items needed for her camping trip. The properties of bag A and bag B are shown below.

	bag A	bag B
properties of the bag	waterproof	non-waterproof
properties of the bag	strong	strong
mass of the bag (g)	80	300

Based on the information above, answer the following questions:

(a) Compare bags A and B.

Write down **TWO** characteristics that make bag A a better choice than bag B for Priya's camping trip. [2]

CHARACTERISTIC 1	
CHARACTERISTIC 2	

The tent below is made of the same material as bag A.



Priya's teacher commented that the tent must be made of a waterproof material.

(b) Why did Priya's teacher say so?

[1]

to be cont'd on the next page

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Priya could not decide which towel, A or B, to bring along for her camping trip. She tried out the following experiment to find out.

She covered the mouth of each of 2 identical jars with towel A and towel B. Next, she poured an equal amount of water through each towel.



Priya recorded the amount of water collected in each jar at the end of her experiment in the table shown below.

mouth of jar covered with	towel A	towel B
amount of water collected in the jar (ml)	15	25

(c) Which towel, A or B, should Priya bring along to dry herself better for her camping trip?

Give a reason for your answer.

[1]

32. The diagram below shows a bottle of cooking oil.



Fill in each blank with any of these words: solid, liquid or gas.

[2]

- (a) The cover is a _____.
- (b) Oil is a _____.

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33. Minah inverted a glass into a tub of coloured water. NO air escaped from the glass into the water when she inverted the glass.

However, a small amount of coloured water entered the glass as shown below.



(a)

Explain why a small amount of coloured water entered the glass.

[1]

(b) Why did Minah use coloured water instead of clear water for her experiment?

[1]

In a different experiment, Minah filled another glass with coloured water before inverting it into the tub of coloured water again.



Next, Minah blew air through a delivery tube into the glass. She observed that bubbles were seen rising up in the coloured water inside the glass. The water level in the glass dropped as Minah continued to blow air into the delivery tube.

(c) Why had the water level in the glass dropped?

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[1]

Ravi had cardboards A and C, each with a hole, and another cardboard B 34. without a hole. He arranged the 3 cardboards in a row as shown in the diagram below.



(a) Why was Ravi NOT able to see the candle flame when he looked directly through the hole of cardboard A? [1]

Ravi replaced cardboard B with a piece of clear plastic sheet as shown in the diagram below.



clear plastic sheet

DRAW arrowheads (>) on the given line to show how light travelled so (b) that Ravi was able to see the candle flame. Explain why Ravi was able to see the flame.

[2]

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35. Jenny used an instrument to measure the temperature of water in a container as shown below.



(a)

[1]

(b) State the temperature of water in the container.

°C

Name the instrument Jenny used.

[1]



36. Janice had 4 containers of the same size but each was made of a different material, A, B, C and D.

She put in 10 identical ice cubes in each of these containers and sealed them. Next, she put all the containers in a tank filled with water at 55°C as shown below.



Janice recorded the amount of water collected in each container after 10 minutes and presented her results in a graph as shown below.



Based on the information above, answer the following questions:

(a) Arrange these materials, A, B, C and D, according to how fast each conducted heat.





fastest

to be cont'd on the next page

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[1]

Janice would like to boil water in the shortest possible time.

(b) Which one of these materials, A, B, C or D, should Janice choose? Explain your answer. [2]

37. Susan places a bar magnet near an iron rod. The iron rod moves towards the magnet in the direction shown by the arrow. iron rod magnet Complete each of the blanks with a suitable word from the box below. [2] push hard magnetic strong pull non-magnetic (a) Magnet exerts a/ an on the iron rod. Susan's observation shows that iron is a (b) . material.

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38. Chloe placed one end of a magnet close to one end of an object X as shown below.



Chloe moved the magnet towards object X until one end of the magnet reached Point A.

Object X moved away from the magnet and the tennis ball was pushed off the table.

(a) Suggest what object X could be.

Explain your answer.

[2]

Using the same set-up as above, the object X was removed and replaced by an iron bar of the same size.

Chloe moved the magnet towards the iron bar. She stopped moving the magnet when one end of the magnet reached Point A.

(b) State what would happen to the tennis ball.

Give a reason for your answer.

[2]

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39. An iron nail was freely suspended next to a coiled iron rod as shown in the diagram below.



When the switch was closed, the iron rod became an electromagnet. Based on the information above, answer the following questions:

- When the switch was closed, what happened to the iron nail? (a)
 - [1]

[2]

(b) Suggest TWO ways to make the electromagnet stronger.

	· ·		-	•	
SUGGESTION 1					•
SUGGESTION 2		-	•		

(c) What would happen to the iron rod when the switch was opened? [1]

END OF PAPER -

Setters: Mr Darren Lau, Mrs Elaine Lim, Ms Ho Hsien Lin

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RAFFLES GIRLS' PRIMARY SCHOOL

2010 PRIMARY 4 SCIENCE SA 2 ANSWER KEY

Setters: *Mr Darren Lau, Ms Ho Hsien Lin, Mrs Elaine Lim * compiler

SECTION A (25 X 2 marks)



4	2
4	4
4	2 2
4	1
2	2



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1

2

1

2

12

SECTION B (40 marks)

N	lo.	Marks	Suggested answers	Remarks
26		1	 has 6 legs has 3 body parts has a pair of feelers 	NO partial marks
	(a)	1	Both breathe through their gills use their gills to breathe [in water]. 	[1/2] for any of the following: Both take in oxygen. Both breathe in the water
27	(b)	1	 The dragonfly outgrows its outer [body] covering. The dragonfly becomes too big for its outer [body] covering. 	
28	(a)	-1	mouth	-[½] for wrong spelling
	(b)	1	small intestine	-[½] for wrong spelling

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	No.	Marks	Suggested answers	Remarks
	(a)	1	The food is partially [½] digested at C mixed with digestive juices at C is further broken down at C	-[½] for wrong spelling of word in bold
	(b)	1	Answer No. Explanation While waste is discharged at F, digestion ends at • the small intestine • D	-[1/2] for wrong spelling of word in bold
29	(c)	1	 Percentage of water in Ralph's faeces increased was higher in 2010 than in 2009 in 2010 was more than in 2009 	Comparison between the percentage (NOT amount) of water in the faeces in 2009 and 2010 must be made -[1/2] for 'amount' instead of 'percentage'
	(d)	1	E removes absorbs water [and minerals] from undigested food 	NOT acceptable E removes water [and minerals] from faeces.
	(a)	1	longerthinner	-[½] for wrong spelling Do NOT accept: weaker
30	(b)	1	food	-[½] for wrong spelling
	(c)	2	 oxygen / air warmth water 	 [1] for any two correct answers -[½] for wrong spelling NOT acceptable: sunlight

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· N	o.	Marks	Answers	Remarks
	(a)	2	 [1] for each correct answer It is waterproof. It is lighter. OR It has a smaller mass. 	Comparison must be made. -[1⁄2] It is light.
31	(b)	1	Reason to ensure that Priya remained dry in the tent when it rained	Mark holistically [1⁄2] for each of the following ideas: Priya's state of dryness within the tent the tent kept out the rain
	(c)	1	Answer B <u>Reason</u> It absorbs <u>more</u> water. It absorbs water at a faster rate. It absorbs water in a shorter time.	Mark holistically A comparison must be made -[½] for wrong spelling of word in bold missing word 'more'
32	(a)	1	solid	- [½] for wrong spelling
32	(b)	1	liquid	- [½] for wrong spelling
	i (a)	1	 Air in the glass [½] was compressed [½]. Air which occupied space in the glass [½] was compressed [½]. 	Air can be compressed. [½] -[½] for wrong spelling of word in bold
33	(b)	1	Coloured water enabled Minah to see the water level [½] more clearly [½]	[1/2] The coloured water helped us to see it/ the water level.
	(c)	1	Air entered the glass [½] and pushed the water out displaced the water in it 	

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No.		Marks	Answers	Remarks
34	(a)	1	Light travels in a straight line [½] and • could not pass through cardboard B which was opaque • B blocked all the light {1/2]	[0] There is no hole in B.
	(b)	2	 <u>Answer</u> Yes. He would be able to see the flame. <u>Explanation</u> Light was able to pass through clear plastic [½] and reached Ravi's eyes [½]. Clear plastics, which is transparent [½], allowed most light to pass through to Ravi's eyes [½]. Clear plastics which allows most of light to pass through [½], did not block light from reaching Ravi's eyes[½]. Clear plastics, which is transparent [½], allowed most light to be reflected from the flame to Ravi's eyes [½]. 	Mark holistically Both answer and explanation must be correct. Pupils must show a clear understanding_of • how light is reflected from the flame into Ravi's eyes • the material which allows <u>most</u> light to pass through -[½] for • missing 'most light' • wrong spelling of word in bold
35	'(a)	1	thermometerlaboratory thermometer	-[½] for wrong spelling of thermometer
ļ	(b)	1	24	[0] for clinical thermometer
	(a)	1	C, B, D, A	NO partial marks
36	(b)	2	Answer A A material A Explanation [1] Ice cubes in container A melted <u>most</u> quickly. [1] This shows that A is the <u>best</u> conductor of heat gained heat <u>most</u> quickly conducted heat <u>most</u> quickly allowed heat to pass through it <u>most</u> quickly So water could be boiled quickly.	Mark holistically [0] Plastic is a poor conductor. -[½] wrong use of comparatives e.g. more [1] interpretation of the graph [1] inference

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2010 P4 Science SA 2 ANSWER KEY

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Ņ	lo.	Marks	Answers	Remarks
37	(a)	1	pull	- [1/2] for wrong spelling
	(b)	1	magnetic	
38	(a)	2	Answer magnet Explanation Like poles of the magnets were facing each other. [1] AND The magnets repelled [½] and pushed the tennis	Mark holistically
	(b)	2	ball off the table. [½] Prediction The tennis ball • was not pushed off the table • remained at - the same place - its original position Reason • The iron bar would be attracted to the magnet. • The magnet would attract the iron ball. • The magnet would pull the iron ball towards it.	Mark holistically

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No.		Marks	Answers	Remarks
	(a)	1	 It became attracted to the iron rod. It moved towards the iron rod. It was pulled towards the iron rod. 	- [½] for wrong spelling of words in bold
39	(b)	2	 Increase the number of batteries in the circuit. Add another battery <u>in series</u> [½] to the circuit. Increase the number of coils on the iron rod. 	[1] for each correct answer
	(c)	1	 The iron rod became demagnetised. The iron rod could no longer attract the iron nail. 	Question asked of iron rod NOT of iron nail [0] • iron rod is not mentioned e.g. The iron nail could not be attracted to the iron rod. • Iron rod became normal again. [½] Iron rod moved back to its original position.

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- END OF PAPER -

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2010 P4 Science SA 2 ANSWER KEY

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