

55/2
Science
Paper 2
July
2006
1 1/2 hours



Set 1

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Learning To Score

SCIENCE

Paper 2

1 Hour 30 Minutes

DO NOT OPEN THE QUESTION PAPER UNTIL YOU ARE TOLD TO DO SO

- This question paper consists of two sections:
Section A and **Section B**.
- Write your answers in the spaces provided in the question paper.
- The diagrams in the questions provided are not drawn to scale unless stated.
- Marks allocated for each question or part question are shown in brackets.
- The time suggested to complete **Section A** is 60 minutes and **Section B** is 30 minutes.
- You may use a **non-programmable** scientific calculator.
- Hand in your entire answer sheet at the end of the examination.

Section	Question	Full marks	Marks
A	1	6	
	2	8	
	3	5	
	4	5	
	5	8	
	6	8	
B	7	8	
	8	12	
Total marks		60	

This question paper consists printed pages

Section A

Section A

[40 marks]

Answer **all** questions.

The time suggested to complete this section is 60 minutes.

1 Figure 1 shows the structure of the human ear.

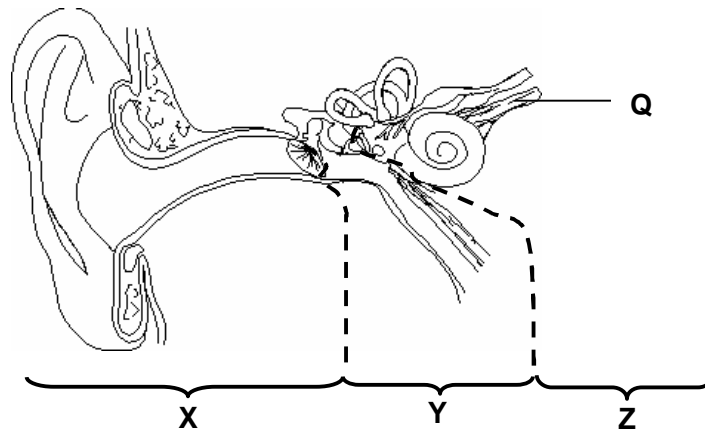


FIGURE 1

(a) Name **part of the ear** labelled **Z**

.....

[1 mark]

(b) Label **two** of the following structures in Figure 1

Cochlea	Ossicles	Auditory nerve
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[2 marks]

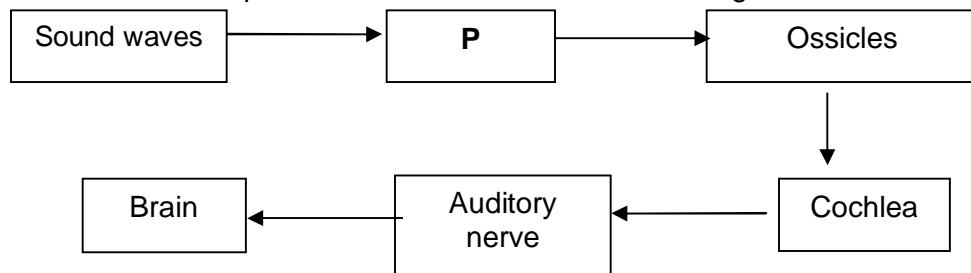
(c) Based on structure in Figure 1, complete Table 1

Name of structure Q	Function of structure Q

TABLE 1

[2 marks]

(d) The chart shows the path of the sound waves in the hearing mechanism.



Name the part that represent **P**

.....

[1 mark]

2 Figure 2 shows a longitudinal section of flower.

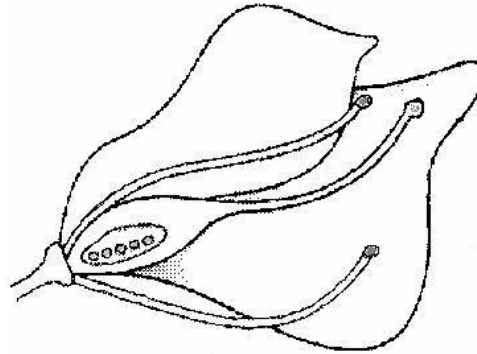


FIGURE 2

(a) Label Figure 2 using the words given in the box below.

Stigma	Anther	Petal
--------	--------	-------

(b) (i) What is the name of the male part of a flower? [3 marks]

.....

(ii) What is the name of the female part of a flower?

.....

[2 marks]

(c) What is found inside the anther?

.....

[1 mark]

(d) What is the function of the filament?

.....

[1 mark]

(e) Why are flowers important to plant?

.....

[1 mark]

3 Figure 3 shows the beaker contains sawdust and sugar solution.

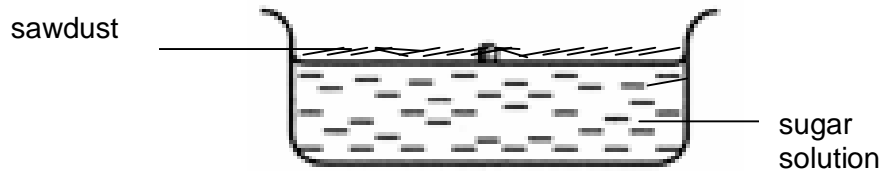


FIGURE 3

(a) Name the type of substances in the beaker. Are the substances a mixture or a compound?

.....
[1 mark]

(b) What is the method that you can use to separate the sawdust and the sugar solution?

.....
[1 mark]

(c) Suggest one method to obtain sugar from sugar solution .

.....
[1 mark]

(d) State two differences between a mixture and a compound.

Mixture	Compound
(i)	(i)
(ii)	(ii)

[2 marks]

- 4 Alina carried out the experiment to determine the composition of water. The set up of apparatus is shown as Figure 4.

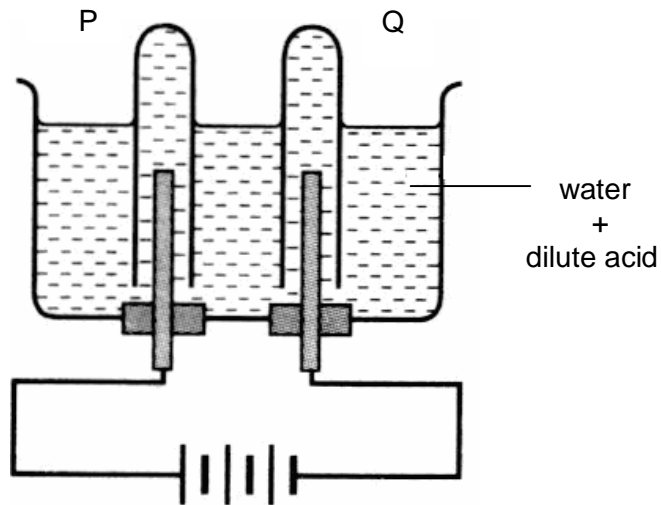


FIGURE 4

- (a) Name the process that is shown in figure above.

..... [1 mark]

- (b) Name the gases that are produced at the :

(i) Anode

..... [1 mark]

(ii) Cathode

..... [1 mark]

- (c) Why Alina add a few drops of dilute acid in the water?

..... [1 mark]

- (d) Determine the ratio of the volume of gas in test tube P to that of the test tube Q.

..... [1 mark]

5 Figure 5 shows processes M and N which convert one substance to another.

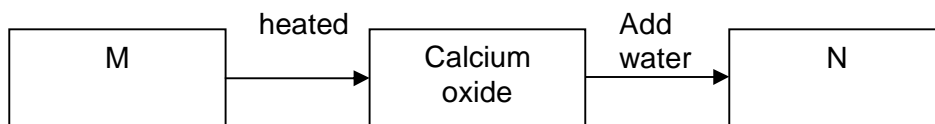


FIGURE 5

(a) Name substance M and N

(i) M

.....

(ii) N

.....

[2 marks]

(b) Write equations for processes M and N.

(i) Process M

.....

(ii) Process N

.....

[2 marks]

(c) Write the common name for each of the compounds.

(i) Calcium oxide

.....

(ii) Calcium hydroxide

.....

[2 marks]

(d) If you add more distilled water into the test tube containing N and stir it, the new substance formed. Name the substance.

.....

[1 mark]

(e) If you filter the substance in (d), what happens when some air is bubbled into the filtrate?

.....

[1 mark]

6 The S.I unit for power is Joule per second (Js^{-1}) or watt (W).

(a) Define 'power'.

.....
[1 mark]

(b) How is power related to work done?.

.....
[1 mark]

(c) (i) Write the formula for work done.

.....
[1 mark]

(ii) Write the formula for power.

.....
[1 mark]

(d) A girl does 3000J of work in a time of 10 seconds. What is the power generated by the girl?.

.....
.....
[2 marks]

(f) An electric motor has a power of 6000W. If it runs for 20 seconds, what is the work done?.

.....
.....
[2 marks]

Section B

[20 marks]

Answer **all** questions.

The time suggested to complete this section is 30 minutes.

7 Figure 7 shows a picture of animal W, X, Y, and Z.

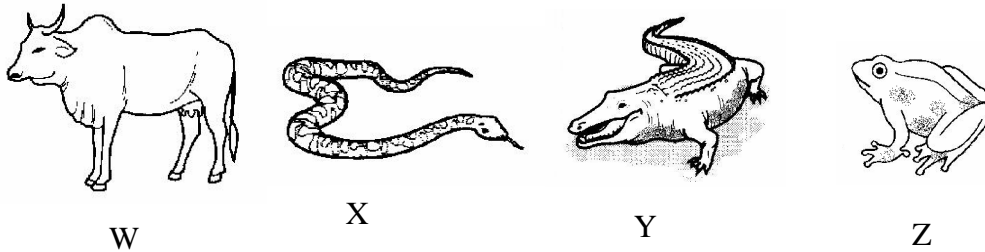


FIGURE 7

(a) State **one** characteristic of animals W, X, Y and Z.

W :

X :

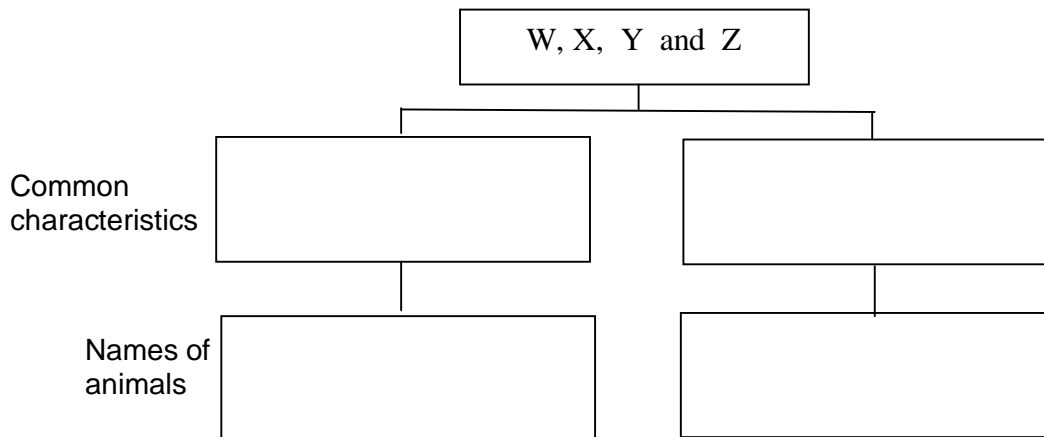
Y :

Z :

[4 marks]

(b) Classify animals W, X, Y and Z into groups based on common characteristics.

Name the animals belonging to each group.



[4 marks]

- 8 Figure 1 shows an experiment that is carried out to show the affect of the length of a string on the time taken for one oscillation of a pendulum.

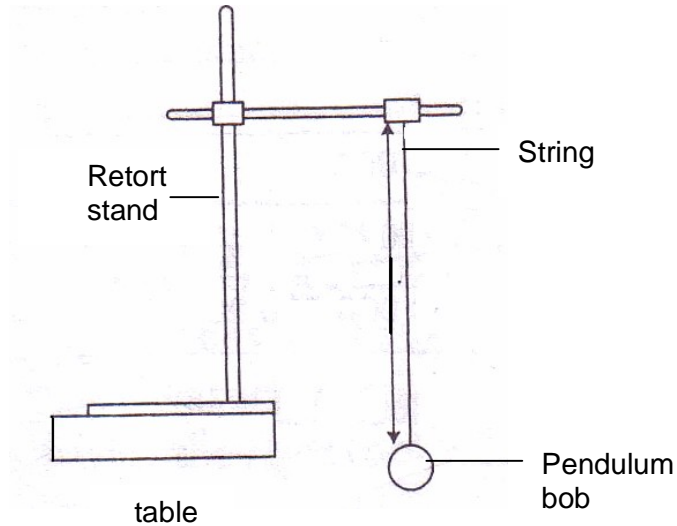


FIGURE 1

- (a) Write a hypothesis for the experiment in Figure 1
 [1 mark]
- (b) State the variables in the experiment.
 (i) manipulated variable : [1 mark]
 (ii) constant variable : [1 mark]
 (iii) responding variable : [1 mark]
- (c) Name the apparatus used to measure time in the experiment.
 [1 mark]

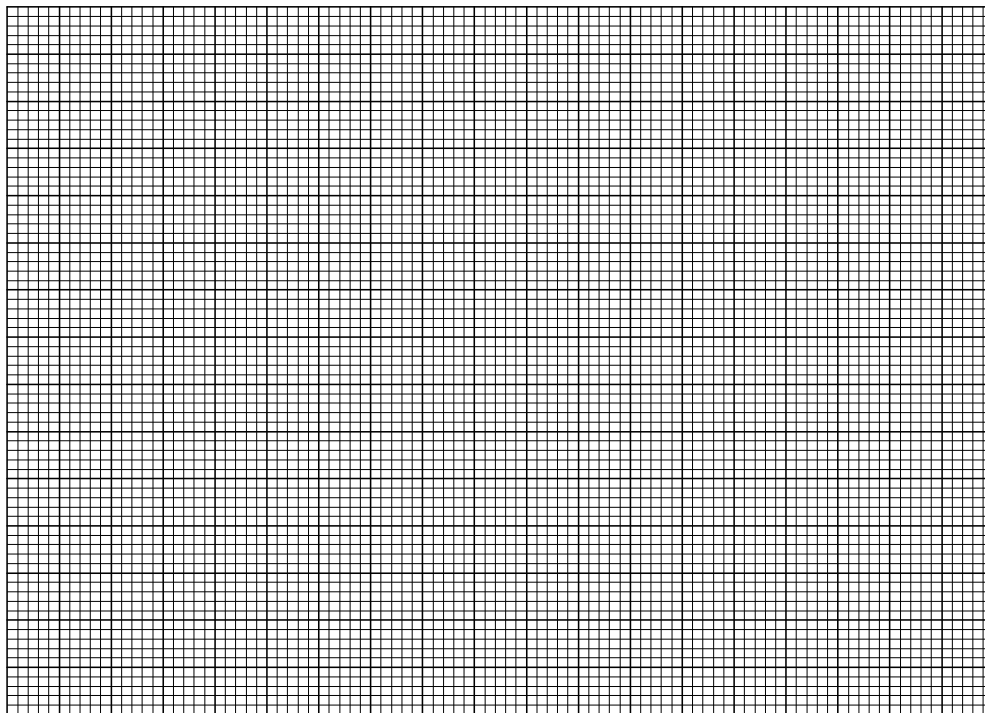
Length of string/cm	Time for 20 oscillations			Time for one oscillation/s
	1 st . reading/s	2 nd . reading/s	Average reading/s	
20	19.8	20.2	20.0	1.00
40	24.9	25.1	25.0	1.25
60	30.1	29.9	30.0	1.50
80	35.2	34.8	35.0	1.75

Table 1

(d) Sketch a pendulum to show how it makes one complete swing.

[1 marks]

(e) Draw a graph using the data in Table 1.



[2 marks]

- (f) Predict the time taken for the pendulum to make one oscillation if the length of the string is 100 cm.

.....
[1 mark]

- (g) Based on the graph, what is the relationship between the length of the string and the time taken for the pendulum to make one complete swing?

.....
.....
[1 mark]

- (h) What is the result of the experiment if the length of the pendulum is constant but the mass of the bob is manipulated? Explain why?

.....
.....
[2 mark]

END OF QUESTION PAPER