OCR GCSE GATEWAY BIOLOGY A · J247

BIOLOGY



EXAM QUESTION PACK

WS1.4 SCIENTIFIC VOCABULARY, QUANTITIES, UNITS, SYMBOLS AND NOMENCLATURE

SCORE	PERCENTAGE
/19	%

STEMUP

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Gateway Biology A (9-1)

Scientific vocabulary, quantities, units, symbols and nomenclature

Please note that you may see slight differences between this paper and the original.

Candidates answer on the Question paper.

OCR supplied materials:
Additional resources may be supplied with this paper.

Other materials required:
- Pencil
- Ruler (cm/mm)

Duration: Not set

Candidate forename		Candidate surname	

Centre number						Candidate number				

INSTRUCTIONS TO CANDIDATES

- Write your name, centre number and candidate number in the boxes above. Please write clearly and in capital letters.
- Use black ink. HB pencil may be used for graphs and diagrams only.
- Answer **all** the questions, unless your teacher tells you otherwise.
- Read each question carefully. Make sure you know what you have to do before starting your answer.
- Where space is provided below the question, please write your answer there.
- You may use additional paper, or a specific Answer sheet if one is provided, but you must clearly show your candidate number, centre number and question number(s).

INFORMATION FOR CANDIDATES

- The quality of written communication is assessed in questions marked with either a pencil or an asterisk. In History and Geography a *Quality of extended response* question is marked with an asterisk, while a pencil is used for questions in which *Spelling, punctuation and grammar and the use of specialist terminology* is assessed.
- The number of marks is given in brackets **[ ]** at the end of each question or part question.
- The total number of marks for this paper is **19**.
- The total number of marks may take into account some 'either/or' question choices.

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1 A light microscope resolution is 0.2 μm. An electron microscope resolution is 0.0001 μm.

How many times closer can two objects be seen as separate objects by using an electron microscope compared to using a light microscope?

A 2x
B 20x
C 200x
D 2000x

Your answer ☐ **[1]**

2 Goldfish are a species of fish.

What name is given to all the goldfish living in a pond?

A A community
B An ecosystem
C A habitat
D A population

Your answer ☐ **[1]**

3 The resolution of an electron microscope is 0.1 nanometres.

The resolution of the eye is 100 micrometres.

How many times greater is the resolution of the electron microscope than the eye?

(1 micrometre = 1000 nanometres)

A 1000
B 10 000
C 100 000
D 1 000 000

Your answer ☐ **[1]**

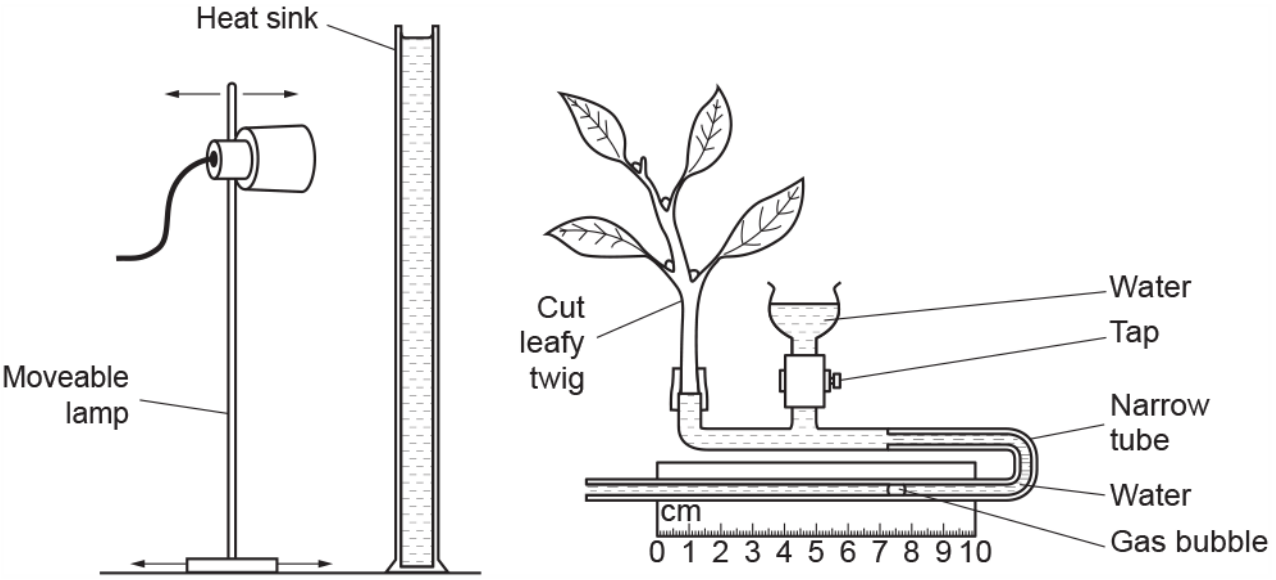
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4(a) The diagram shows a simple potometer.

The apparatus can be used to investigate the effect of light intensity on transpiration rates.



(i) Describe what happens during transpiration.

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[2]

(ii) Describe how the apparatus can be used to investigate the effect of light on transpiration rates.

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[3]

(iii) The heat sink is a transparent tube of cold water.

Explain why a heat sink is used in this experiment.

[2]

(b) The table shows the results from using the potometer.

Distance of potometer from the light (cm)	Distance gas bubble moved in one minute (mm)		
	Trial 1	Trial 2	Trial 3
10	70	74	72
20	73	75	71
30	52	49	51
40	42	30	31
50	12	14	13

(i) The mean distance the gas bubble moved along the tube at 10 cm from the light was 72 mm.

The diameter of the narrow tube was 1 mm.

Calculate the volume of water taken up by the plant.

Use the equation: volume = $\pi r^2 l$
where r is the radius of the tube and *l* is the distance the bubble moves
$\pi = 3.14$

Give your answer to **2** significant figures.

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Volume of water = ... mm^3 / minute **[3]**

(ii) Identify the anomalous reading in their recorded results and suggest a possible reason for this.

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[2]

(iii) How should the scientists deal with this anomalous reading when they process the data?

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[1]

(iv) The scientists described their results for **20 cm** as 73 ± 2.
Explain why they did this.

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[2]

5 Which is the correct definition of a parasite?

A An organism that is always at the top of a food chain.
B An organism that kills and eats another organism.
C An organism that lives on another living organism so that they both benefit.
D An organism that lives on or in another living organism causing it harm.

Your answer ☐ **[1]**

END OF QUESTION PAPER

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