



Biology
Standard and Higher level
A1.1 Water
Paper 2

18 August 2026

Zone A afternoon | **Zone B** morning | **Zone C** afternoon

Candidate name

1 hour 15 minutes

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Instructions to candidates

- Write your candidate name in the boxes above.
- Answers must be written within the answer boxes provided.
- A calculator is required for this paper.
- This paper only includes short and long answer questions.
- All of the questions are original and written by me.
- Although most questions focus on this topic only, some are linked to other topics. A few questions have intentionally similar answers to show you how questions can be phrased differently but ask about the same concept(s).
- The duration of this paper was scaled according to the number of marks available and based on how much time, on average, each mark is worth in examination settings. Since this is a practice paper, expect to need more time to complete it.
- **None of the questions are from IB past papers.**
- The maximum mark for this paper is **[50 marks]**.

Section A

1. Water is a polar molecule.

(a) State how a polar covalent bond forms.

[1]

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(b) Explain how the polarity of water molecules results in hydrogen bonding.

[2]

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(c) Draw **two** water molecules that are attracted by hydrogen bonding.

[4]



2. Interactions between water and its environment are important for living organisms.

(a) Distinguish between cohesion and adhesion of water molecules. [1]

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(b) Outline the role of cohesion in creating water surfaces as habitats. [2]

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(c) Describe the role of adhesion and cohesion in xylem transport. [2]

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(d) Explain the biological significance of the inability of water to interact with hydrophobic molecules. [3]

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3. [AHL] There are many theories about the origins of water.

(a) Define Goldilocks zone.

[1]

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(b) Explain why the search for extraterrestrial life is linked to the presence of water.

[2]

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(c) Outline the reasons for water retention on Earth.

[2]

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Section B

There are not enough answer boxes for all the questions in this section in order to save on printing paper. You can use the few answer boxes for brainstorming your responses, and then record your answers on a separate sheet of paper.

4. The molecular structure of water explains its function.
- (a) Outline the consequences of cohesion on organisms. [4]
 - (b) Explain how adhesion of water molecules enables capillary action in soil and in plant cell walls. [4]
 - (c) Discuss the challenges and opportunities of water as a habitat. [7]
5. The chemical and physical properties of water are important for organisms.
- (a) Describe adaptations of **two** organisms to the physical properties of water. [7]
 - (b) Compare the physical properties of water and air. [4]
 - (c) Explain how the solvent properties of water are linked to its role as a medium for metabolism. [4]



[illegible]

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins or other markings on the paper.

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