Cambridge Assessment International Education

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FIRST LANGUAGE ENGLISH **0500/13**

Paper 1 Reading **October/November 2025**

INSERT **2 hours**

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INFORMATION

- This insert contains the reading texts.
- You may annotate this insert and use the blank spaces for planning. **Do not write your answers** on the insert.

This document has **8** pages. Any blank pages are indicated.

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Read **Text A** and then answer **Questions 1(a)–(e)** on the question paper.

Text A: *Is there life on Mars?*

Mars looks like an inhospitable wasteland, where wintertime temperatures plunge to minus 153 °C and the atmosphere is just one per cent of the density of Earth's and comprised principally of carbon dioxide.

However, Mars wasn't always so hostile to life. For the first billion years of its existence, the planet had many oceans and seas and was protected by a thick blanket of air, meaning it had ample opportunity to accommodate at least microbial life. Eventually, however, its magnetic field shut down, allowing the solar wind to claw away the atmosphere and the water to vanish into space.

Most potential life forms undoubtedly perished at this point, but research has suggested that some lingering surface markers of ancient life may have been found – lying in plain sight, in fact – meaning that possibly some basic life forms retreated underground to continue thriving in deep, warm water-bearing rocks.

Scientists have sent rovers to Mars's Gale Crater, a former lake, where the rovers study rocks for clues to the planet's history. The latest rover at Gale Crater has a large memory with the potential to hold significant amounts of data, but it has had some problems with both data storage and with sending data on to scientists. Nevertheless, it successfully uses its on-board drill to collect rock and soil samples for examination before transferring them to an oven within its body where they are quickly heated to high temperatures. Then its laser spectrometer gets to work, efficiently analysing the chemistry of the vapourised samples – looking especially for carbon, the elemental backbone of all life as we know it.

And plenty of carbon has been detected!

This could be exciting news for many on Earth, though perhaps not all. Do we need to study Mars and its potential for life in order to understand our planet's early history and evolution? Some scientists would certainly say so. Meanwhile, the extraterrestrial life forms of science fiction stir imaginations to a point that starstruck fans actually dream of meeting real-life Martians for themselves. Equally, though, there are those who believe that human dreams of material gain and power through such ventures should not be encouraged and that revenue put aside for space exploration should be redirected to our own planet's more pressing concerns.

Read **Text B** and then answer **Question 1(f)** on the question paper.

Text B: ***Life at Concordia Station***

Scientist Beth recently spent a year at the Concordia International Research Station in Antarctica. In this text, she is interviewed about her time at Concordia.

Interviewer: I understand that Concordia Station is supposed to replicate the living conditions that astronauts experience on long flight missions. But I'm perplexed. Since Mars is known as the Red Planet, wouldn't an arid desert be a closer match than a freezing white environment like Antarctica?

Beth: (laughs) Mars looks red because of iron minerals in the soil that oxidise and rust, not because of its temperature. It is actually far colder on Mars itself than anywhere on Earth, but at least we got a taste of what it could be like. Travelling in Antarctica was by a huge tractor of the sort we will probably use on overland missions when we get out to Mars. Looking out at the huge spaces around Concordia, I was struck by how travel over the vast barren wastelands of a Martian landscape wouldn't be too dissimilar. Very few life forms can live in Antarctica – all the polar bears are in the Arctic, remember – and the expectation is we won't find much sentient life roaming around on Martian ground either. So nothing much to engage your eye or your mind once you've settled into the unknown alien environment that you must learn to call home. In Concordia, you have to work in conditions that many would describe as extreme. Some colleagues found it hard working during the months of total darkness you get in the Antarctic. At least on Mars, extremes though there are, you have day and night.

Interviewer: But you must have had contact with family and friends? You were able to video call them, surely?

Beth: Apart from my work colleagues, I didn't see any other humans for that year. Some of us found this stressful, and we had to develop our own strategies for managing both our privacy and working together professionally. Video calling home was unreliable: we were encouraged to immerse ourselves in the experience and keep such contact infrequent. Maybe one day we will connect phone lines or the internet from Mars, but who knows? Silly things like being unable to just go out and buy your favourite brand of shampoo or soap become bigger issues than they should. Same with food – though we did have a 5-star restaurant at Concordia.

Read **Text C** and then answer **Questions 2(a)–(d)** and **Question 3** on the question paper.

Text C: *The Mars expedition*

Bob, Rajah and Sarah belong to a team of astronauts who have landed on Mars. Their Captain has sent them out on the first ever Martian mission to look for signs of life. They are driving in a rover: a motor vehicle designed to travel on Mars's surface.

Bob stopped the rover, and Rajah and Sarah climbed out, Sarah carrying the shovel. Bob had decided to remain in the rover to receive communications from the Captain at the base some twenty kilometres back. Bob would also be testing any samples Sarah and Rajah brought to the rover.

This was the last site they would be visiting and then they would be finished. Bob was relieved about that. After putting Bob in charge of today's mission, the Captain had spoken to Sarah and Rajah about working together as a team and, apparently, they had assured her that they would. But their constant arguments today told another story: it was not supposed to be a competition to go down in history as the individual who first found life on Mars.

Bob did chuckle to himself, though, as he remembered their spacecraft landing two days earlier and how both Sarah and Rajah had jumped from the door, arms outstretched to prevent anyone else passing them, each shouting something rather grandly foolish for the benefit of posterity. They'd ended up in an undignified heap together on Mars's surface, while Bob and the other astronauts had ambled over and past them to inspect the base that the rover had built.

That base, along with the spacecraft, would be their home now for another three months. It was pretty basic living but sufficed if they gave each other space. Most of the other astronauts were respectful and professional which certainly helped.

Suddenly, the communication device sounded in the rover: it was Rajah.

'I'm about to hit water!' cried Rajah.

'Ridiculous. You've barely broken the ground surface!' Sarah's pained voice pierced Bob's ears.

Bob decided to leave the rover. He saw the two silhouetted figures ahead of him, apparently engaged in a struggle over a shovel.

Bob detached his own shovel from the side of the rover and walked in another direction. The ground was promisingly soft here. His booted foot sank the shovel blade through a surface layer of fine crimson crumbs. An unmistakably damp wedge of soil was removed, and clear liquid slipped gently into its place.

'Incredible!' exclaimed Bob. 'Rajah, Sarah, can one of you get a canister out of the rover and come over here?'

Sitting in the rover a minute later, the astronauts watched as Bob emptied the liquid from the canister into the testing receptacle. Bob felt his heart pound as he looked at the results. 'OK, Rajah, Sarah, the readings are positive: biological organisms are present. I'm going to prepare a slide and put some of this liquid under the microscope to see if I can view them.'

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Seconds passed like hours as Rajah and Sarah hung over Bob's shoulder, both closely observing him place the slide under the intense scrutiny of the microscope's eye. Silence entered the cramped space of the rover and floated inquisitively around the three absorbed figures. Bob inhaled sharply as a clear image on the slide came into view. In front of him gyrated a dozen tiny worm-shaped life forms. Their movements were subtle and deliberate, as if choreographed.

Rajah and Sarah both sprang simultaneously into action, grabbing the communication device that would connect them to the base.

'Captain, this is big!' yelled Sarah.

'I have just found the first ever evidence of life on Mars!' hollered Rajah.

Bob realised that the many years he had trained for this expedition had been merely a poor rehearsal for this one rapturous moment. He silently contemplated the enormity of the discovery. Meanwhile, Sarah began a frenzy of 'selfie' live-streaming, parading the microscope like a glorious trophy. Rajah emailed a solemnly worded message, delineating the grandeur of his achievement. He urged the Captain to upload this immediately to their captive audience of leaders, scientists and well-wishers on Earth.

'Oh!' Rajah said, a minute later. He looked crestfallen. 'The Captain only wants to speak to you, Bob!'

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