Cambridge Assessment International Education

Cambridge IGCSE™

FIRST LANGUAGE ENGLISH **0500/12**

Paper 1 Reading **May/June 2021**

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)–1(e)** on the question paper.

Text A: Antarctica

This text gives information about Antarctica.

Antarctica is the fifth largest continent in terms of total area, larger than the continents of both Oceania and Europe. The Antarctic Ice Sheet, the largest single piece of ice on Earth, dominates the region. This ice sheet even extends beyond the continent when snow and ice are at their most extreme in winter months.

The Antarctic region has an important role in global climate processes. It is an integral part of the Earth's heat balance (the relationship between the amount of solar heat absorbed by Earth's atmosphere and the amount of heat reflected back into space).

Ice is more reflective than land or water surfaces. The massive Antarctic Ice Sheet reflects a large amount of solar radiation away from Earth's surface. As global ice cover (ice sheets and glaciers) decreases, the reflectivity of Earth's surface also decreases. This allows more incoming solar radiation to be absorbed by the Earth's surface, causing an unequal heat balance linked to global warming.

While Antarctica does not have permanent residents, the region is busy with research scientists from dozens of different countries. Antarctica has no national borders, so the entire continent is open for research. It has the cleanest air in the world, so atmospheric monitoring done there provides more reliable data.

Most visitors to Antarctica are either increasingly adventurous tourists, on increasingly affordable cruises, or researchers involved in national scientific programmes. In many aspects the type of activities undertaken and the potential environmental impacts are common to all visitors. Whatever their reason for being in Antarctica, these people will want to visit the same spectacular scenery and witness threatened wildlife colonies.

Although nearly three times as many tourists visit Antarctica than researchers, the number of person-days on the ground in Antarctica for national scientific programmes far exceeds the number for tourism, which is nearly all ship based.

National programmes have involved the establishment of permanent or semi-permanent stations, served by new roads and runways, and staffed by long-term (wintering) and short-term (summer only) personnel. Only in recent years have environmental audits carried out around scientific stations ensured that waste of all kinds is returned to the country of origin wherever possible.

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

Text B: Crossing Antarctica

This text is an article about Wendy Searle who plans to break the women's world speed record for skiing solo to the South Pole, unassisted and unaided – a huge challenge!

Five years ago, Wendy Searle hadn't considered crossing Antarctica. Then she organised the media campaign of an expedition to the South Pole by a team of military personnel. It made her wonder if she could have a go herself.

Despite the fact that she had no previous polar training and had never skied before, she successfully skied 560 kilometres across the Greenland ice sheet last year: 'One thing I learned is that my polar expedition will be incredibly tough, mentally.'

Searle will need to ski 1130 kilometres across the frozen continent of Antarctica in less than 38 days, 23 hours and 5 minutes. 'I can't have any outside assistance and I have to take everything with me in a special sledge called a pulk: all my food, my fuel, my supplies, everything. I can't have any food re-supplies or medical help. I cannot even accept a cup of tea,' she said. 'I'll be completely alone and, in all likelihood, I won't see anybody else.'

Searle is 1.53 metres tall and weighs just over 60 kilograms; the pulk will weigh over 80 kilograms. Training for the expedition, she needs to spend more than 10 hours a week lifting weights and running up and down hills pulling a tyre, while also holding down a full-time job. Knowing how difficult and dangerous the route is going to be forces Searle to prioritise training: 'That one day you don't train might be the difference between success and failure.'

Her family – her husband is a soldier and they have three teenage daughters and a son – are doing all they can to support her. 'My children are super-independent. They even organise me. They'll say, "Don't forget parents' evening and these are the appointments I've got you." They're amazing.' She's determined to inspire them. 'I want my children to see that it's OK to pursue something with a white-hot passion in a single-minded way and focus on a goal.'

Searle is still raising money to fund the expedition. She feels it's more difficult to attract sponsorship as a female polar explorer: 'People need to get behind female adventurers. I asked a well-known TV agent why there aren't more programmes about us and she said, "Honestly, there just isn't the audience."'

Searle hopes her story will change perceptions.

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

Text C: Base station, Antarctica

This text is taken from a longer narrative. The narrator is a journalist who has been invited to spend time at a national scientific programme base station on Antarctica. She has travelled by ship with a new group of staff arriving at the base at the start of summer and is planning to stay long enough to experience the beginning of winter.

Base emitted a hushed grandeur, as if a vault door had been closed – all noise guarded fiercely behind it. A gunshot-like crack echoed through the air – an iceberg rotating – then a roar like a distant waterfall as another chunk of the ice shelf collapsed into the bay. Rough squawks of skuas were magnified through the telescope of empty dry air. There were no smells of soil, trees, nor grass. Only the scent of Antarctica – like two stones rubbed together. Flint.

We passed truckloads of tinned-food boxes in huge hangars. In summer, Base could accommodate a hundred people: scientists returning from tented field-camps or being deployed to them, pilots flying them in and out, cooks, mechanics, even the occasional VIP.

We were shown the laboratory, air-traffic control tower, stores where ski equipment was repaired, generator hut and sewage treatment plant. It felt both exciting and daunting to call this home for the next few months. There were no museums, cafés or restaurants. No animals, Wi-Fi or children. No real strangers.

That evening we encountered more Base people – young, fit figures without that fume of the outside that still clung to us. They sported the same padded boiler suits and fleece jackets, and were keen to talk. ‘I don’t call the real world often, it’s best to just live in the bubble,’ confided marine biologist Ben. I said I planned to stay until the very last boat out. ‘Winter here’s long,’ he added.

Field training took days; we learned how to abseil into a crevasse, get ourselves out and rescue someone who has fallen in. We hurled ourselves down the sheer face of a glacier – to learn to break our fall with an ice-axe. We erected and dismantled pyramid tents, cooked on camp-stoves, and learned how to load a sledge.

There wasn’t much time to think, let alone write, in the early weeks occupied by briefings, obligatory group activities and trips into the bay to collect water samples.

Summer was term time. Each evening scientists gave informal lectures: scientists who routinely dived beneath the ice among carnivorous leopard seals and orcas; scientists in the ice-coring team who worked in an underground cavern, surfacing only to cook and sleep in pyramid tents on the blasted plain of Berkner Island. I was learning more in weeks than I had in entire years.

For the first time I began to think of the planet as an organism whose well-being I could affect. Here I felt closer to it. I could hear its pulse. ‘In ice, depth equals time,’ explained Xavier, a scientist working with the ice-coring team. ‘The further down you go, the further back in time you go. The ice core shows that major changes have taken place within Earth’s climate. There’s an irrefutable steady upward trend, directly linked to carbon dioxide, and humans.’ I shivered involuntarily.

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As winter approached, activities on Base diminished. For entertainment, our dwindling group played cards or leafed through old magazines.

We were given new instructions by Base Commander Simon. We weren't to walk off Base without telling him first. The sea ice was hardening at the shore; fresh snowfalls made it difficult to see where land stopped and sea began. We risked falling through.

Safety was taken seriously – endless rehearsals drilled into us how Antarctic tragedies had more than one cause; mishaps or misjudgements which sealed people's fate.

Temperatures dropped further. Snowstorms blanketed the runway. The last ship out depended on the weather. People had overwintered unexpectedly here before.

Around us the world was hardening. In the bay it started as ice flowers, tiny crystal formations. The creeping carpet of flowers knitted together, until soaked by seawater it transformed into grey gruel, thickening into porridge. As temperatures plummeted, porridge-ice welded itself together, and sounded like steel grinding. In gathering darkness sea ice formed. The continent was closing in on itself, locking itself in. Winter was beginning.

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