Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

FIRST LANGUAGE ENGLISH **0500/21**

Paper 2 Reading Passages (Extended) **October/November 2017**

READING BOOKLET INSERT

2 hours

READ THESE INSTRUCTIONS FIRST

This Reading Booklet Insert contains the reading passages for use with **all** the questions on the Question Paper.

You may annotate this Insert and use the blank spaces for planning.

This Insert is **not** assessed by the Examiner.

This document consists of **5** printed pages and **3** blank pages.

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Part 1

Read **Passage A** carefully, and then answer **Questions 1** and **2** on the Question Paper.

Passage A: The Spacesuit

Astronaut A is based at a station in space and is sent on a mission to remove some hazardous debris which is occupying an orbit path.

When Satellite Control called me, I was in the observation bubble – the glass-domed office that juts out from the axis of the space station like the hubcap of a wheel. Only a few yards away I could see the construction teams performing their slow-motion ballet as they put the station together like a giant jigsaw puzzle. And beyond them, four hundred kilometres below, was the blue-green glory of the full Earth, floating against the ravelled star clouds.

'Astronaut A here,' I answered. 'What's the trouble?'

'Our radar's showing some metallic debris three kilometres away, almost stationary, about five degrees west of Sirius. Someone needs to go out and haul it aboard; get it out of orbit.'

Hastily, I clambered into my spacesuit. Our suits are really baby spaceships, just big enough to hold one person. They are cheerfully coloured stubby cylinders, about two metres long, and fitted with softly chattering, low-powered propulsion jets. Their accordion sleeves at the upper end fit with hospitable snugness around an astronaut's arms and the gentle contours of the helmet's visor finish the feeling that you are being looked after by a responsible friend.

Inside, I switched on the power and checked the gauges on the tiny instrument panel. All my needles were well in the safety zone, so I lowered the transparent hemisphere over my head and sealed myself in. For a short trip like this, I did not bother to check the suit's internal lockers, which were used to carry food and special equipment for extended missions. The conveyor belt decanted me into the air lock. Then the pumps brought the pressure down to zero, the outer door opened, and the last traces of air swept me out into the stars, turning me very slowly head over heels.

I was now an independent planet – a little world of my own. I was sealed up in a tiny mobile cylinder, with a superb view of the entire universe, but I had practically no freedom of movement inside the suit. The padded seat and safety harness prevented me from turning around, though I could reach all the controls and lockers with my hands or feet.

In space the great enemy is the Sun, which can blast you to blindness in seconds. Very cautiously, I switched the helmet's external sunshade to automatic, so that whichever way the suit gyrated, my eyes would be shielded.

Presently, I found my target, a bright fleck of silver whose metallic glint distinguished it clearly from the surrounding stars. I stamped on the jet control pedal and felt the mild surge of acceleration as the low-powered rockets set me moving away from the station. After ten seconds of steady thrust, I cut off the drive. It would take me five minutes to coast the rest of the way, and not much longer to return with my salvage.

And it was at that moment that I knew that something was horribly wrong!

It is never completely silent inside a spacesuit: you can always hear the gentle hiss of oxygen, the faint whirr of fans and motors, the susurration of your own breathing. These sounds are the unnoticed background of life in space, for you are aware of them only when they change.

They had changed now. To them had been added a sound which I could not identify. It was an intermittent, muffled thudding, sometimes accompanied by a scraping noise.

I froze instantly, holding my breath and trying to locate the alien sound with my ears. The meters on the control board gave no clues; all the needles were rock-steady on their scales; no flickering red lights warned of impending disaster.

Three things had gone wrong at once. The oxygen regulator had run wild and sent the pressure soaring; the safety valve had failed to blow, and a faulty joint had given way.

Blind panic meant that it took me several attempts before I could press the right button and switch my transmitter to the emergency wavelength. 'Station!' I gasped. 'I'm in trouble…'.

I never finished; they say my yell wrecked the microphone.

I must have lunged forward despite the safety harness and smashed against the upper ledge of the control panel. When the rescue squad reached me a few minutes later, I was unconscious, with an angry bruise across my forehead. Coming to my senses an hour later, I saw our medical staff gathered round my bed.

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Part 2

Read **Passage B** carefully, and then answer **Question 3** on the Question Paper.

Passage B: Emigration to Mars

This article has been written by the organisation Mars One to give information to a person who might be considering an application to emigrate to Mars.

A one-way trip to Mars. What would this mean to you? Are you one of the very few people who could rise to this immense challenge?

Many people would rather lose a limb than live the rest of their lives on a cold, hostile planet. You will have said goodbye forever to friends and family, your only remaining possible communication with them being through Space-call. Space-call has a seven-minute delay and, although you may hear your loved ones speak, visual reception is only one-way. They will see you, but you will never see them again.

We at Mars One know that, out there, there will be some individuals for whom travelling to Mars has been a dream their entire life. Not unlike those ancient Chinese, Micronesians, Africans, Vikings and famed explorers of Old World Europe, who left everything behind to spend the majority of their lives at sea, these people see a one-way mission to Mars to be about exploring a new world and the opportunity to conduct the most revolutionary research ever conceived: to build a new home for humans on another planet.

If you become a Mars One astronaut, you will undergo eight years of training before you are allowed to leave the Earth's atmosphere. Isolated from the world for four months every year in simulation facilities, living only with your team of fellow potential astronauts, you will learn about the crew members who will take you to Mars and, importantly, about isolation from the people you have known and cared about all your life. You will also acquire skills: how to perform physical and electrical repairs to the settlement structures we will have on Mars; how to cultivate crops in confined spaces, and how to address both routine and serious medical issues such as dental upkeep, muscle tears and bone fractures.

The flight itself will take between seven and eight months (depending on the relative positions of Earth and Mars when we embark). You will spend that time with your fellow astronauts in a very small space, devoid of any luxury or frills. This will not be easy. Showering with water will not be an option. Instead you and the other astronauts will have just one pack of wet wipes each.

Freeze-dried and canned food are the only options. There will be constant noise from the ventilators, computer and life-support machines, and a regimented routine of three hours' daily exercise in order to maintain muscle mass. If your rocket is hit by a solar storm, you must take refuge in a very small sheltered area of the rocket, which can provide protection for just three days.

When you land on Mars, you will find that you must share accommodation with three other astronauts in our settlement. You may be able to choose your companions. You will have a relatively spacious living unit of just over $50m^2$ in a combined living area of $200m^2$. You will have inflatable components which include your bedroom, working area, living room, and a 'plant production unit', where you must grow greenery. You will take a daily shower, prepare fresh food (which you have grown and harvested) and wear clothes suited to the cold temperatures.

Mars construction robots have constructed passages across the settlement which will allow astronauts some opportunity to socialise with each other. If you wish to leave the settlement to explore another part of Mars, you must wear a Mars suit and bear in mind that it is unlikely that Mars One health and safety checks will have been undertaken on areas outside the settlement.

Now you should ask yourself if you have the stamina and resilience to become part of what will undoubtedly go down as the most significant expedition of exploration and research in human history. To apply to become a Mars One astronaut, you should fill in a downloadable form.

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