National
Qualifications
2022

X824/76/11

English
Reading for Understanding, Analysis and Evaluation — Text

WEDNESDAY, 11 MAY

9:00 AM – 10:30 AM

Total marks — 30

Read the passages carefully and then attempt ALL questions, which are printed on a separate sheet.

The following two passages discuss space exploration.

Passage 1

Read the passage below and attempt questions 1 to 8.

In the first passage, the journalist A.A. Gill considers the value of space exploration. He starts with the Apollo 11 moon landing in 1969, when the first human stepped on the moon.

You really had to be there to understand, to fully appreciate, quite how astronomically underwhelming man's first step on the Moon actually was. Neil Armstrong finally getting out of the silver portacabin, gingerly setting his big wellies in the dust, like an old person getting off a bus, and saying, 'One small step for man, one giant leap for mankind.' Back in the studio, the announcer had to repeat what Armstrong had said. So what we actually heard was a spaceman's first words from a television studio.

We'd waited for this giant leap for hours. Nothing happened relentlessly, building expectation to an anaesthetic slumber, until they blew the hatch on the greatest anti-climax of the twentieth century. In fact, everything that happened in all the years of the space race between the superpowers of the United States of America and the Soviet Union was nothing like as exciting as what happened on *Star Wars*. Space never lived up to its billing.

In the 1960s, science fiction was hitting its golden age and space was an easy sell. It was exploited by people who wanted to sell things to children: space themed sweets, cereal and duvet covers. No country wanted to be left out of the space race between the superpowers, and I came to realise that space exploration wasn't about people becoming gods in the wide blue yonder; it was about international brand promotion and market share on Earth. Space wasn't the final frontier. It was just a bigger billboard.

Any dignity space might have had left was lost with the idea of the time capsule — a gift from us to whoever, or whatever, might be out there in space. It's impossible to know how much serious thought and energy went into this most absurd and arrogant of exercises. The idea of the time capsule was to send a message to passing extra-terrestrials in the form of a container which held all sorts of bits and pieces. These items were intended to represent all humanity: religious and literary works, fragments of Mozart and the Beatles, and images of a man and a woman, etched into indestructible kryptonite. They're still up there, representing us as a kind of space-age Barbie and Ken.

And we knew then that space was not about up there at all — it was about down here and how we, and our leaders, viewed ourselves. Space exploration came to represent the ego-ridden vanity of government and power. When the race was won, nobody went back to the Moon — there was nothing they wanted or needed on it. In a very human way, they just left some junk up there. It wasn't grand or brave or intrepid; it was ugly and stupid and laughable. The space race wasn't about explorers like Columbus or Magellan or Cook bringing back something useful or explaining something important. It was pointless and wasteful.

So what has it left us with? Space stations, cosmic junk floating around the universe, and school project experiments. Kaliningrad, the Russian space mission control centre, has given space more travellers than any other place. It boasts dozens of memorials to the daring adventures of the travellers to distant darkness. But the statues are chipped, filthy and overgrown. The space race isn't a symbol of power. It's an embarrassment, and that is the great truth about the space programme: it was supposed to be the future, but it got overtaken by the present. The rockets, the magnificent noise and power and fury that was meant to symbolise our energy to go on and up, now looks like wasteful carbon technology. The future isn't going to be in exploding ever-greater amounts of fossil fuel. The dream that space exploration would find new worlds for humanity to colonise looks like it won't materialise.

All that new science that was promised turned out to be nothing more than gadgets like tap-water filters and pens that write upside down. The massive leap forward of the space age was computing — and that had nothing to do with actual space missions. The science of propelling large lumps of metal containing two foil-wrapped people through gravity is as obsolete as the technology of steam trains.

The one lasting aesthetically beautiful thing that did come from the whole guzzling, ugly space business was that famous photograph of our blue planet taken from space: astonishing and moving and vulnerable, our great group photo. And, ironically, that photo did more than anything to kick-start the environmental movement.

We needed to get out of the world to look back and see what was important and where the fight for the future really lay. The final frontier is not out there beyond the Milky Way. The excitement is on Earth. The heroes children want aren't spacemen, they're climate activists. Ultimately, the planet we need to get to is our own.

Passage 2

Read the passage below and attempt question 9. While reading, you may wish to make notes on the main ideas and/or highlight key points in the passage.

In the second passage from the NASA website, the writer considers various positives linked to space exploration.

Humanity's interest in the heavens has been universal and enduring. We humans are driven to explore the unknown, discover new worlds, push the boundaries of our scientific and technical limits, and then push further. The desire to explore and challenge the boundaries of what we know and where we have been has inspired us and has provided benefits to our society for centuries.

This is the beginning of a new era in space exploration. Decades on from successfully landing on the Moon, explorers may soon be in a position to visit near-earth asteroids (mini planets), which will provide valuable mission experience and prepare us for the next steps — possibly for the first humans to set foot on Mars.

Asteroids are believed to have formed early in our solar system's history — about 4.5 billion years ago. By visiting these near-earth objects we can look for answers to some of humankind's most compelling questions, such as: how did the solar system form and where did the Earth's water and other organic materials come from? In addition, by understanding more about asteroids we may learn more about past collisions with Earth and possibly find ways to reduce the threat of future impacts.

Future missions to asteroids will prepare humans for long-duration space travel and, hopefully, the eventual journey to Mars. Mars has always been a source of inspiration for explorers and scientists. Unmanned expeditions have found evidence of water, but whether life exists beyond Earth remains a mystery. These missions have shown that Mars has characteristics and a history similar to Earth's, but we know that there are striking differences that we have yet to begin to understand. Humans can build upon this knowledge and look for signs of life while investigating Mars' geological evolution, using research methods that could be applied here on Earth.

A mission to Mars — our nearest planetary neighbour — provides the best opportunity to demonstrate that humans can live for extended, even permanent, stays beyond low Earth orbit. The technology and space systems required to transport and sustain explorers will drive innovation and encourage creative ways to observe, adapt, and uncover new knowledge both in space and here on Earth. As previous space endeavours have demonstrated, the resulting ingenuity and technologies will have long-lasting benefits and applications in areas of vital human importance: medicine, engineering, information technology and transport.

The challenge of travelling to Mars and learning how to live there will encourage nations around the world to work together to achieve such an ambitious undertaking. The International Space Station has shown that opportunities for collaboration will highlight our common interests and provide a global sense of community.

Clearly, human space exploration helps to address fundamental questions about our place in the Universe and the history of the solar system. Through addressing the challenges related to human space exploration we expand technology, create new industries, and help to foster a peaceful connection with other nations. Curiosity and exploration are vital to the human spirit and accepting the challenge of going deeper into space will invite the citizens of the world today, and the generations of tomorrow, to join in this exciting journey.

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