

SEVENOAKS SCHOOL



YEAR 9 (13+) SCHOLARSHIP

May 2022
for entry in September 2022

GENERAL PAPER

Your Name: _____

Your School: _____

Time allowed: 1 hour (including 10 - 20 minutes reading time)

Equipment needed: Pen, pencil, lined paper, eraser.

Information for candidates:

1. Write your name and school on this page.
2. Write your answers on the **separate paper** provided. Please put your name on all the sheets of paper you use.
3. There are two sections, section A and section B. Answer all the questions in section A and choose one question from section B.
4. The paper will be marked out of 30. Section A and Section B are worth 15 marks each.

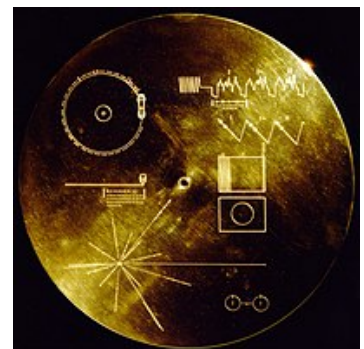
SECTION A [15 marks]

Why do we send things into space?

For centuries, humans have been fascinated by space. Space exploration helps us to address fundamental questions about our place in the universe and the history of our solar system. This can help us to put our life into perspective and to consider the *big* questions such as why am I here, where do we come from and where are we going? Secondly, through exploring space we can further expand technology, create new industries and help to collaborate with other nations.

In the 20th century humans were able turn their interest in space exploration into something more tangible. In 1957 the Soviet Union launched Sputnik 1, the first artificial satellite, into space and 1961 the Russian Lt. Yuri Gagarin became the first human to orbit Earth in Vostok 1. Since then, scientists have been interested in considering how sending objects, people and animals up into space can teach us more about they behave and whether they could survive on another planet. For example, scientists have sent mice into space to test their ability to breed, and slime into space to test how non-water fluid behaves in microgravity.

Some objects are also sent into space in order to communicate with possible intelligent extra-terrestrial life. In 1977 the astronomer Carl Sagan sought to do this. He worked with a committee of scientists in order to create two 'Golden Records' which would be launched into space to send out hopeful messages about planet earth. They contained a variety of sounds, music and images which depicted the diversity of life and culture on Earth. For example, the records have sounds of trains, greetings in 55 languages, images of the Olympics and music by Mozart. The records have picture instructions on them so that, if found by intelligent extra-terrestrial life, they would know how to play them.



However, there are also some items that have been sent into space for less scientific reasons. Over the past century the following have all been sent into space:

- A Buzz Lightyear toy
- A piece of the Wright Brothers' first ever airplane
- Lego figurines of the Roman gods and Galileo Galilei
- 100,000 posts from Craigslist, an American advertising website, advertising jobs and places to rent

Companies have also seen sending items into space as a good opportunity to advertise their products and increase sales. In 2001 Pizza Hut spent 1 million dollars to have the privilege of being the first restaurant chain which delivered to space. Pizza Hut seasoned the pizza with extra spices and salt as taste buds become a little dulled in space. In addition, they decided to replace their normal pepperoni topping with salami as it was less likely to go off on the journey.



Questions

1. When asked about the likelihood of extra-terrestrial life being able to access the Golden Records Carl Sagan said the following:

“There is only an infinitesimal chance that the plaque will ever be seen by a single extra-terrestrial, but it will certainly be seen by billions of terrestrials. Its real function, therefore, is to appeal to and expand the human spirit, and to make contact with extra-terrestrial intelligence a welcome expectation of mankind.

 - a) Explain what you think that he meant by this. [2 marks]
 - b) To what extent do you think that sending things up into space can help us to do these things? [5 marks]
2. If you could send three things up to space what would they be and why? Make sure that you explain why it would be justified to spend time and money on them and what your motivations for sending them would be. [8 marks]

Continued...

SECTION B [15 marks]

Choose one of the following questions to respond to. You should refer to real life or hypothetical examples to demonstrate why your points are both true and important.

1. If you had the option to become immortal, would you take it? Why/why not?
2. If you could teach everyone in the world one concept which would positively impact humanity, what would it be and why?
3. What do you think is the best path to finding truth; science, math, art, philosophy, or something else?
4. Do you think that we can choose what we believe? Why/why not?