**Geography Admissions Test Sample Question – PART ONE**

Part One is designed to test your critical reading and thinking skills. In responding to the material provided you will be asked to identify and evaluate the key arguments being presented. You may also be asked to compare different arguments. You will not be assessed on your general knowledge or on knowledge of material beyond what is presented in the text. If you include information from beyond the material provided this will be discounted and marks will not be awarded for wider reading.

**Sample Question**

*This source is an extract from an article published in 1956 by a South African born (but US based) scientist Athelstan Spilhaus. You should read it and respond to the question at the end. Your answer must not draw on any material outside of the text given below. Any such material will be discounted.*

CONTROL OF THE WORLD ENVIRONMENT

By Athelstan Spilhaus

*The Geographical Review*, October 1956

ONE essential difference between man and the lesser animals is that man strives to change his environment to meet his peculiar needs, whereas other forms of life in the course of time submissively adapt themselves to the whims of their surroundings. Man began to alter his environment to his needs when, in his primitive state, he found himself a shelter to keep out rain, wind, and sun; when he discovered fire to warm himself against the chill; when he herded animals and cultivated plants instead of merely hunting and gathering them; when he stored fresh water against times of drought and thirst. From these beginnings of his ancient forebears, man has continually applied his increasing knowledge of Nature toward his better living. We now control to our liking, in our ordinary dwellings, the physical things that we sense - cold and heat, darkness and light, noise and silence, and odours. We do this by heating in winter and air conditioning in summer, by illuminating or darkening our rooms without regard to night or day, by acoustical conditioning, and by ventilating. We also eliminate disease-carrying animals such as rats and mosquitoes, and we control within our own bodies viruses, germs, and other living organisms that undermine our well-being. We breed animals and plants selectively for better and more abundant food, and we condition the spaces in which they grow by animal shelters and greenhouses, and by fertilizing and irrigating open tracts. There is no question that as the population of the earth increases, the need to utilize the presently uncomfortable empty area or its surface will give impetus to making them more suitable for supporting human life.

There are, of course, many pitfalls and errors into which man can fall in exercising his new-found scientific strength because of his incomplete understanding of the complex interrelationships of the physical and living components on the earth. Lack of understanding and the inability to foresee the results of his actions have sometimes led man to make changes in his surroundings that were for the worse. The Buddhists believe that if Nature is tampered with too much she takes her revenge, and there are numerous examples from the past of endeavours which were carried out without adequate consideration of future implications and as a result of which it would seem that Nature has indeed taken her revenge. The denuding of forest lands, as, for example, long ago in Spain, more recently in our own country, and most recently in Korea, leads to changes in the local climate and causes erosion of the land, with dire consequences. But we are now learning to borrow from Nature and not to rob her. In our enthusiasm about industrialization, we have on occasion polluted the atmosphere, the rivers, and the ocean fringes. Here again Nature sometimes takes her revenge, as by the smog in Los Angeles. The increasing use of our new power from atomic energy confronts us with a waste we can neither bury in the ground nor dump in the sea nor burn so that it is diffused harmlessly into the atmosphere. The long half-life waste products that result from the use of nuclear fuels are not disposed of so easily. If we dilute the radioactive waste and spread it around, natural concentrating mechanisms, both in living plants and animals and by geophysical processes, defeat our purpose. If we concentrate it and put it in containers, the containers will not last as long as the longest half-lives of the wastes. If we drop the containers into the ocean, where sedimentation takes place fast enough to build up an adequate depth of shielding sediment before the containers deteriorate, it would seem as though we had the solution. But we must remember that the sea itself is a source of valuable nutrients, which are lost to man's use when they settle to the bottom, and within the period of time of the longer half-lives of the nuclear wastes the need may arise, and the ways be found, to mine or stir the bottom sediments for elements useful to man. It may conceivably be necessary to shoot these wastes off the earth into the truly plentiful space in rockets. These few examples suffice to indicate that if we are to turn Nature to our better service, much thought and planning will be needed to ensure that we do not jeopardize the well-being of ourselves or of future generations.

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The aim of our learning in science, both natural and social, and in the arts and humanities should be to maximize improvement of our living conditions, including the constant raising of human values, with the minimum exhaustion of real resources. If this ideal is kept in mind, I believe that the next half century will see an explosion of world engineering, dedicated to the welfare of man, on a much greater scale than that of the hydrogen bomb devised for his destruction. To give some credibility to the world engineering projects that may be carried out in the next fifty years, the fantastic advances of the last fifty years must be borne in mind. Also, it is necessary to recall the interdependence between basic science and engineering and industry, and the mutually supporting interplay between different technologies. Engineering advances depend on basic scientific discoveries, but in their turn they provide the great tools for further advancement of science-cyclotrons, linear accelerators, research reactors, electronic computers, and the like. This is the chain reaction that leads to the explosion of technology. A nice example of this chain reaction has been given by Dr Alexander King to show what happened at the beginning of the Industrial Revolution. James Watt's newly invented steam engine required, for its manufacture, more and better iron, and therefore more coal. The engine itself was put to work producing the blast for the iron furnaces and for pumping water from coal mines. Thus more coal was produced, more iron was produced, and more steam engines were produced. And the cycle goes on in an ever-expanding spiral.

For the thoughtful engineering of our world environment on the scale on which I believe it will take place in the next few decades, we shall need to increase many times our knowledge of our physical environment-the land, the sea, the atmosphere, and the space above it, including such extra-terrestrial phenomena as the sun and cosmic rays.

QUESTION: Comment on how the relationship between humans and the environment is discussed in this article.

*Answers to this question could include the following points*:

* The article is about how humans can *control* the environment. Early on in the article the author tells us that what distinguishes human beings from other animals is their ability to control their environment. He lists a series of achievements in this respect including, for instance, the capacity to selectively breed animals and to control the conditions in which they live.
* These achievements notwithstanding, the author is also aware of the problems generated by efforts on the part of humans to control the environment. He pays particular attention to nuclear waste, noting how we might even need to dispose this waste in space. Part of the reason that nuclear waste poses such a problem is because it will persist in the environment for much longer than the devices and technologies used to contain it.
* Relatedly, the author describes Nature as something or someone that can exercise agency. In doing so he personifies Nature. This is most clearly expressed through the idea that Nature can ‘take her revenge’ on humans. This seems to suggest that while humans can control the ‘environment’, ‘Nature’ is a force that always has the capacity to resist this control.
* The author seems to have a selective understanding of who has benefitted from the achievements of human technological development. For instance, he suggests that “we control within our own bodies viruses, germs, and other living organisms that undermine our well being”. However, writing in the mid-1950s he neglects to note that in many parts of the world many diseases have not been eliminated.
* The author has a very clear idea about the role of knowledge in shaping the relation between humans and the environment. He argues that all branches of knowledge including science, social science, and art should be about improving human life, although he does not extend this to a concern for other forms of animal life. His goal seems to be to “turn Nature to our better service”.
* The author seems to be optimistic about the prospects for the future. In the penultimate paragraph he envisages an “explosion of world engineering” in the next 50 years. Underpinning his optimism is his assumption about the relation between engineering and science. This relation, he suggests, develops in a way that is similar to a cyclical chain reaction. The author concludes that for this to take place in a “thoughtful way” humans need to increase their knowledge of all aspects of the physical environment.
* The author describes the relation between humans and the environment in gendered terms. Humans are described in this article in masculine terms. The author refers throughout the article to “man” and uses the masculine possessive to indicate ownership or achievement. In contrast, Nature is described in feminine terms, evident through the author’s use of ‘she’ and ‘her’.
* While he does not make this point, the argument of the author could be taken to support a claim about the important role of geography as a discipline that helps us understand the relation between humans, nature, and environments.