

国公立大学 | 説明問題演習③

解答時間: 20 分

次の英文を読み、下記の問いに答えなさい。

Every city has an invisible world of microorganisms living on the surfaces people touch every day. Researchers studying public transportation have discovered that these tiny organisms are not distributed randomly. Different cities contain different combinations of bacteria and viruses. In this sense, each city has its own biological identity. By examining microorganisms collected from a station, scientists can often determine which city a sample came from.

One surprising discovery is that microbial diversity varies with geography. Cities near the equator generally contain more kinds of microorganisms than those closer to the poles, ^(A)while coastal location, altitude, and population density also influence which organisms are present. ⁽¹⁾These findings suggest that the invisible life of cities follows patterns similar to those found in nature. The distribution of microorganisms, like that of plants and animals, appears to be shaped by environmental conditions.

However, scientists still know relatively little about many of these organisms. Thousands of microorganisms collected in cities have not yet been identified. Some people regard every unidentified microorganism as a potential danger, but scientists warn against such an assumption. ⁽²⁾ One should not be considered harmful simply because it has not been identified. People encounter countless microorganisms in ordinary life without becoming ill.

Understanding these urban ecosystems may nevertheless have important practical benefits. Regular sampling could reveal changes in microbial populations and the appearance of harmful organisms. Researchers could also identify bacteria carrying genes that make antibiotics less effective. Such information would help public-health authorities recognize potential health risks at an early stage. ⁽³⁾It could also enable them to take preventive measures before those risks become widespread.

The study of urban microorganisms is still developing. ^(B)Yet

mapping this invisible world may eventually become an important part of protecting public health.

【設問】

問 1 第 2 段落の下線部(1) These findings とは、どのような発見を指すか。本文の内容に即して、60 字以内の日本語で具体的に説明しなさい。

問 2 第 3 段落の下線部(2) One が指すものを、20 字以内の日本語で答えなさい。

問 3 第 4 段落の下線部(3) It が指す内容を、本文に即して、40 字程度の日本語で具体的に説明しなさい。

問 4(10 点) 本文の内容と一致する英文を、次の①～④から 1 つ選び、番号で答えなさい。

- ① The microorganisms found in cities are distributed in almost identical combinations regardless of location.
- ② Scientists can sometimes identify the city where a sample was collected by examining the microorganisms it contains.
- ③ Cities nearer the poles generally have more kinds of microorganisms than those near the equator.
- ④ Unidentified microorganisms should always be regarded as harmful until their exact identities are established.

問 5 本文中の二重下線部(A)while、下線部(B)Yet とそれぞれ同じ用法で使われているものを、①～④から 1 つずつ選び、番号で答えなさい。

(A)

- ① Please wait here while I check the information.
- ② Some cities have large populations, while others are relatively small.
- ③ She listened to music while she was studying.
- ④ He lived in London for a while before moving to Paris.

(B) ① Have you finished reading the report yet?

- ② This is yet another example of the same problem.
- ③ The experiment was difficult, yet the researchers continued their work.
- ④ The results have not yet been published.