平成１９年１月期論文博士外国語試験
問題・解答用紙　　（日本人）

受験番号
論

以下の文章は Preventing cancer と題して書かれた Nature 誌の Editorial Comment である。文章を読んで、以下の設問に答えなさい。

Twenty-five years ago, a landmark study by Richard Doll and Richard Peto (1981) concluded that 75–80% of cancers diagnosed in the United States in 1970 might theoretically have been prevented by altering environmental factors such as smoking, alcohol consumption and diet. More recent work has added obesity and physical inactivity to the list of factors that increase cancer risk. Today, tobacco use accounts for 30% of cancers in the United States, obesity accounts for 15% and poor diet for up to 25%. Clearly, while avidly pursuing promising avenues of therapy, the biomedical community and policy-makers need to tackle cancer prevention with just as much zeal.

The success of campaigns to combat melanoma and lung cancer are testaments to the impact that prevention can make. For example, the Australian government's exhortation to "slip on a shirt, slop on a sunscreen, slap on a hat" has led to melanoma having less of a health impact in Australia than in cloudier countries such as Britain. The incidence of smoking-related cancers has dropped sharply since the 1990s — the delayed effects of anti-smoking campaigns started in the 1960s and 1970s.

But much still needs to be done. Tobacco remains a problem, especially in the developing world, where consumption is climbing. The next biggest threat facing the developed world is the growing epidemic of obesity. In the United States and Europe, for example, around two-thirds of the population is either overweight or obese. Research into how people form dietary and exercise habits will help to inform intervention campaigns, and research on nutrition will help to determine why a vegetable-rich, low-saturated-fat diet seems to provide protection against cancer. Studies on genetic susceptibility could one day help us all to tailor our lifestyles to suit our risk profiles.

But such research is likely to have little effect unless policy-makers are prepared to go further than just educating the public. Avoiding the Sun is straightforward and cheap. The same cannot be said of factors that affect obesity. Once associated with wealth and excess, obesity now disproportionately affects the poorer sections of society, because high-calorie, low-nutrient, processed food is often much more easily accessible than healthy alternatives. Governments need to help ensure that eating the recommended five portions of fruit and vegetables a day is a realistic aim for everyone.

Physical activity needs to be tackled too. Encouraging children and adults to take up sport is a start, but policies that encourage people to build exercise into their daily lives — town planning that makes walking to the shops or cycling to work easier and safer, for example — are likely to have a longer-lasting impact.

Our modern lifestyles are increasingly at odds with the environment in which our physiology originally evolved. Finding a truce between the two would go a long way to reducing the burden of diseases, such as cancer, that result.

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問題 1. (A) Melamomaを予防するのにオーストラリア政府とった勧告は何か？ (B) その結果はどうだったか？

問題 2. 著者は、“Growing epidemic of obesity”を抑制するためにどのような研究が必要であるとのべているのか？

問題 3. 著者は、“Growing epidemic of obesity” を抑制するために”policy-makers”は何をすべきだと述べているか？

問題 4. 下線部の著者の考えを述べなさい。

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次の英文を和訳しなさい。

Most control systems of the body act by negative feedback, which can best be explained by reviewing some of the homeostatic control systems of the body. In the regulation of carbon dioxide concentration, a high concentration of carbon dioxide in the extracellular fluid increases pulmonary ventilation. This, in turn, decreases the extracellular fluid carbon dioxide concentration because the lungs expire greater amounts of carbon dioxide from the body. In other words, the high concentration of carbon dioxide initiates events that decrease the concentration toward normal, which is negative to the initiating stimulus. Conversely, if the carbon dioxide concentration falls too low, this causes feedback to increase the concentration. This response also is negative to the initiating stimulus. In the arterial pressure-regulating mechanisms, a high pressure causes a series of reasons that promote a lower pressure, or a low pressure causes a series of reactions that promote an elevated pressure. In both instances, these effects are negative with respect to the initiating stimulus. Therefore, in general, if some factor becomes excessive or deficient, a control system initiates negative feedback, which consists of a series of changes that return the factor toward a certain mean value, thus maintaining homeostasis.