

※ 考生請注意：本試題不可使用計算機。 請於答案卷(卡)作答，於本試題紙上作答者，不予計分。

1. Please describe the “**proliferation**” and “**differentiation**”, and also compare the difference between these two terms. (15%)
2. Cancer is more and more common in modern society. What are cancer cells? Please describe how to detect cancer cells. Please show one theoretical strategy to cure the cancer. (15%)
3. Please describe how to determine “Dengue fever”. (15%)
4. PM2.5 shows the severity of air pollution. What is PM2.5? What are resulting effects on the respiratory system? (15%)
5. Please describe the difference between spermatogenesis and oocytogenesis during the meiosis. (15%)
6. Please show different methods to detect DNA, RNA and protein. (15%)
7. You attempt to prepare 3 M NaCl solution. The molecular weights of Na and Cl are 23 and 35.4, respectively. Please describe how to prepare this solution. (10%)