

Please read the following questions very carefully and write your answers according to the order of questions. Good Luck to you.

1. What is the **English whole spelling and meaning of AIDS** (3 points)? What is the **official name of its etiological agent** (please write down the **full English name** of this agent) (2 points)? When a pregnant mother had contact with her husband with AIDS, she worried about whether her babies might acquired the infection from her if she had this infection, **what tests** are you going to **prove** whether this pregnant mother had **similar infection as her husband** (6 points)? If the test shows positive, what are your sincere recommendations (3 points). If this mother has **both AIDS and tuberculosis**, what do you expect the **possible clinical outcomes** and what is your **rationale** to support such outcomes (5 points). If this mother also worried about **rubella virus** infection, **what laboratory tests** that you would like to do to prove she had rubella and give her some **sincere advices** if the result is positive for rubella (6 points) [total 25 points]
2. Please explain clearly what is the **meaning of the highly pathogenic avian influenza virus** at the viewpoints of **molecular virology**? (5 points) Up to now, we have 69 human avian influenza cases reported by the World Health Organization. If you doubt about that pandemic influenza might happen, **what are the three important things you are going to do** once you see **several human avian influenza cases clustering in one area**? (6 points) What **other possible ways** that pandemic influenza might happen (4 points) [total 15 points]
3. Myxomatosis is the best example that Fenner found the changes of microbes in virulence. Do you think **microbes like to change into more pathogenic or less pathogenic**? Please write down **one other virus** as an example compared with *Vibrio cholerae* to illustrate your ideas. (10 points).
4. Please describe the **roles of monocytes/macrophages** and **how do those pathogenic microorganism escape from their defense** using **one solid examples** in bacteria and virus, respectively. (15 points)
5. In the epidemic of dengue, it is very likely to be confused with leptospirosis. Would you please describe **the etiological agent of dengue versus leptospirosis** and **how could you know this epidemic is due to dengue rather than leptospirosis**? (10 points)
6. Please **compare the similarity and differences** among *Escherichia coli*, *Salmonella typhi* and non-typhi *Salmonella*. (10 points)
7. What are **novel vaccine strategies** to microbial infection in recent two decades? What are the **barriers** in those infections without vaccine? (10 points)
8. What are **important future directions** of infectious disease based on your knowledge (5 points)

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