

※ 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。

Virology 部分

1. List the viral characteristics (e.g. structure, replication, target tissue) that would promote transmission by the fecal-oral route, by arthropods, by fomites, and by sexual activity. (10%)
2. What kinds of viruses are associated with human cancers? Vaccines are available for which viruses to prevent such infections? What types of vaccines are used? (10%)
3. Which antiviral drugs are available for the treatment of HSV and influenza virus infections? What are their targets? (10%)
4. What precautions should health care workers take to protect themselves from infection with the following viruses: influenza A virus, HBV, HIV, and HSV (whitlow)? (10%)
5. A cervical Papanicolaou smear is taken from a woman with a vaginal papilloma (wart). Certain types of papillomas have been associated with cervical cancer. What method(s) would be used to detect and identify the type of papilloma in the cervical smear? (5%)
6. A policeman accidentally sticks his finger with a drug addict's syringe needle. He is concerned that he may be infected with HIV. Samples are taken from the policeman a month later for analysis. What kind of samples and what assays would be appropriate to determine whether the man is infected with the virus? (5%)

Bacteriology 部分

1. Please describe bacterial virulence factors that would prevent immunological responses when bacteria infect human. (10%)
2. Please list antibiotics for targeting *Mycobacterium tuberculosis* infection, to give a description about the mechanism of each drug. (10%)
3. Please describe mechanisms for horizontal gene transfer in bacteria. (10%)
4. Please describe the cell wall structure of Gram-positive bacterium. (10%)
5. Please describe what you know about Microbiota. (10%)