

系所組別： 微生物及免疫學研究所甲、丁組

考試科目： 微生物學

考試日期：0307·節次：2

※ 考生請注意：本試題 可 不可 使用計算機

1. (a) Describe influenza pandemics in the twentieth century as well as avian influenza (H5N1) emerged in 1997 and swine-origin influenza virus (H1N1) emerged in 2009, and the origins of these influenza viruses. (8%)
(b) Describe the mechanisms for the appearance of new human pandemic strains of influenza virus. (8%)
(c) Describe anti-influenza drugs and their mechanisms of action. (6%)
2. (a) Describe and compare the properties of hepatitis B virus (HBV) and hepatitis C virus (HCV). (8%)
(b) What are the molecular mechanisms of hepatocarcinogenesis of HBV and HCV? (10%)
3. (a) Describe how Dr. Harald zur Hausen, a Nobel laureate of 2008, discovered that human papillomavirus (HPV) causes cervical cancer. (6%)
(b) Describe HPV vaccines developed in recent years. (6%)
4. (a) Describe the properties of prions in comparison to viruses. (8%)
(b) What kinds of diseases are caused by prions. (6%)
5. (a) Describe the mechanisms by which antibiotic resistance can arise and spread. (12%)
(b) What is MRSA Superbug? How does it threaten human health? (8%)
6. Tuberculosis is today the second highest cause of death from an infectious disease worldwide, after HIV/AIDS.
(a) How does this old disease re-emerge as a major threat to human health. (6%)
(b) In your opinion, what are key issues that need to be addressed if radical advances in the control of tuberculosis are to be made. (8%)