東吳大學 100 學年度碩士班研究生招生考試試題

系級	微生物學系碩士班	考試時間	100 分鐘
科目	普通微生物學	本科總分	100 分

A. Assays（問答題）

1. Define the word “plasmid”. (10 分)
2. What was one of the first and most useful microscopic tests for classifying bacteria that is still important today? Give major steps of performing this test. (15 分)
3. Provide two methods to determine bacteriophage concentration in a sample. (10 分)
4. State the difference between the following: silent, nonsense, and missense mutations. (10 分)
5. What are Koch’s postulates and how do Koch’s postulates prove cause and effect in a disease? (15 分)
6. What are the three domains of life? How are the domains generated? (10 分)

B. Simple choice(單選題), 每題 5 分

1. Absence of all life forms: (1) Clean (2) Disinfected (3) Sterile (4) Aseptic (5) Sanitized
2. Which of the following is not involved in bacterial conjugation? (1) Bacteriophage (2) F^+ cells (3) F^- cells (4) Plasmids (5) Sex pili
3. Which of the following is correct? The mechanism whereby an enveloped virus leaves a host cell is called (1) Transduction (2) Budding (3) Lysogeny (4) Penetration (5) None of the above
4. Which of the following is correct? Chemolithotrophs are organisms that (1) obtain energy from light (2) obtain energy from organic compounds (3) able to grow on carbon dioxide as the principal carbon source (4) able to grow without oxygen (5) none of the above
5. Catabolite repression (1) is called nitrogen effect (2) can lead to diauxic growth (3) promotes adaptation (4) is responsible for chemotaxis (5) takes place during heat shock response
6. Which of the following is NOT correct? (1) Bacteria are prokaryotic (2) Bacteria have peptidoglycan cell walls (3) *Escherichia coli* is part of the normal microbiota of human (4) Biogenesis means living cells can only arise from preexisting cells (5) None of the above