

八十六學年度 生命科學系(所) 分生組甲  
生醫組甲 組碩士班研究生入學考試

科目 微生物學 科號 0904 共 / 頁第 / 頁 \*請在試卷【答案卷】內作答  
1204

1. Define or describe the following (30%)
  - a. Plaque-forming unit
  - b. Eukaryote
  - c. Autotroph
  - d. Prototroph
  - e. Nonionizing radiation
  - f. Nonhomologous recombination
  - g. Phenotype
  - h. Interferon
  - i. Fungus
  - j. Clone
  - k. Conditional mutation
  - l. Genetic suppression
  - m. Etiologic agent
  - n. Specialized transduction
  - o. Mismatch repair
2. Describe or discuss the physiological role of the following cellular proteins (20%)
  - a. Catalase
  - b.  $\beta$ -Lactamase
  - c. Phosphotransferase
  - d. Aldolase
  - e. Nitrogenase
3. Why is  $O_2$  toxic to many microorganisms and how do they protect themselves? (10%)
4. What fates can DNA have after entering a bacterium? (8%)
5. Why is  $F'$  conjugation so useful to microbial geneticists? (7%)
6. Discuss how animal viruses can enter host cells? (8%)
7. Give two reasons why the enterobacteria are so important. (7%)
8. State three different applications of the PCR (polymerase chain reaction) technique. (10%)