

國立中山大學 101 學年度碩士暨碩士專班招生考試試題

科目：微生物學【生科系碩士班乙組選考】

題號：4042
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請勿在本試題紙上作答，答案請務必依題目順序書寫於答案卷上。

1. Compare and contrast the structure of prokaryotic 70S ribosome and eukaryotic 80S ribosome. (10%)
2. What would happen if you omit the mordant step in Gram staining. Explain why. (10%)
3. (1) What is a nosocomial infection? (5%) (2) Name the top 3 most common types of nosocomial infections. (5%)
4. What is wrong with this statement: "Prior to vaccination, the patient's skin was sterilized with 70% ethanol"? What would be more correct wording? (10%)
5. HIV attacks only specific types of human cells, such as certain white blood cells and nerve cells. Please explain why a virus can enter some types of cells but not others? (10%)
6. Compare and contrast "fermentation" and "anaerobic respiration". (15%)
7. (1) What is an Hfr cell? (8%) (2) What would happen after an Hfr cell conjugated with an F⁻ cell? (7%)
8. (1) Draw a brief figure to illustrate the nitrogen cycle. (8%) (2) Briefly explain the following terms: (a) ammonification (3%), (b) denitrification (3%), (c) nitrification (3%), and (d) nitrogen fixation (3%).