

- I. Define the following (2 points each)
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| 1. endospore | 6. excision repair |
| 2. lysogenic bacteria | 7. nonsense mutation |
| 3. peptidoglycan | 8. Archaea |
| 4. active transport | 9. Penicillium |
| 5. anaerobic respiration | 10. sterilization |
- II. List five major characteristics used in classifying bacteria. (10 points)
- III. How does positive and negative control regulate on the gene expression of the *lac* operon in *Escherichia coli*. (10 points)
- IV. Compare the difference between *Escherichia coli* metabolize glucose in the presence and absent of oxygen (including metabolic pathway used and energy produced)? (10 points)
- V. 如何利用所有現有的生化、分生及基因體技術，證明微生物無所不在，且極多元化？(10分)
- VI. 針對病毒病害：(1)簡述病毒感染寄主細胞時之主要步驟，(2)依此設計可能的治療策略。(10分)
- VII. 列舉三項細菌 chromosomes 與 plasmids 之差異。(10分)
- VIII. 說明真菌之：(1)營養特性與獲養方式，(2)分類依據與現今分類情況。(10分)
- IX. 解釋何謂 endosymbiosis，並舉兩個實例說明之。(10分)



試題隨卷繳回