1. Describe generalized and specialized transduction. (8%)
2. Distinguish between F^+, Hfr, and F^- strains of *E. coli* with respect to their physical nature and role in conjugation. (10%)
3. Describe the four phases of the growth curve for bacteria and discuss the causes of each. (10%)
4. Summarize the major features of the glycolytic pathway and the Entner-Doudoroff sequence. Include the starting points, the products of the pathways, the critical or unique enzymes, the ATP yields, the metabolic roles each pathway has. (12%)
5. Describe how replica plating is used to detect and isolate auxotrophic mutants. (10%)
6. 畫一細菌之構造簡圖並註明下列部位：(a) capsule, (b) ribosome, (c) cell wall, (d)peritrichous flagella, (e) mesosome, (f) plasma membrane (9%)
7. 何謂 chemostat？說明在此環境下 dilution rate 與 cell density 及 growth rate 之關係 (10%)
8. 比較(a) virulent bacteriophage 與 temperate phage, (b) sporangiospores 與 conidia (12%)
9. 寫出一般培養基與玻璃器皿在實驗室中滅菌之方式與條件 (8%)
10. 畫出某一細菌在某一溫度下受熱不同時間時之存活曲線並註明 D 值 (6%)
11. 何謂 Assay medium 簡述其用途 (5%)

試題隨卷繳回