

※ 注意：請於答案卷上依序作答，並應註明作答之部份及其題號。

**Part (I): 50%**

1. How do FtsZ and the MinCDE system regulate septum formation and localization? (10%)
2. How does the partitioning system (*par*) ensure that the duplicated P1 and R1 plasmids are distributed into different daughter cells during division? (10%)
3. How do the major six virulence loci facilitate DNA transfer from *Agrobacterium* into plants? (10%)
4. How to control the replication of ColE1 plasmid in *E. coli*? (10%)
5. Double-strand DNA break recombination in *E. coli* involves (a) Rec complexes, (b) *chi* site, and (c) Ruv factors; please describe the mechanism. (10%)

**Part (II): 50%**

- (1) Define and explain the terminology (20%)
  - a. Enhancer (5%)
  - b. Ac/Dc elements (5%)
  - c. Spliceosome (5%)
  - d. Heterochromatin (5%)
- (2) Short essays (30%)
  - a. What is the epigenetic regulation of gene expression? How does it affect gene expression? (10%)
  - b. What are the steps of RNA processing from the pre-mRNA transcription to the export of mature mRNA? (10%)
  - c. How does CRISPR work? (10%)

試題隨卷繳回