Part I: 50%

一、 **Explanations:** (20%)

1.transesterification 2. polyadenylational signal 3. autosplicing
4. core promoter 5. epigenetic 6. insertion sequence 7. prion

二、 **Questions**

1. **Please describe the splicing process of pre-mRNA (nuclear RNA), tRNA and rRNA. Point out their difference (10%).**
2. **How is the histone modification of chromatin in regulating gene transcription? (10%)**
3. **How to use two restriction enzymes (*Msp* I *and Hpa* II) to detect DNA methylation pattern? (10%)**

Part II (50%)

問答題: 每題 5%

1. What is siRNA, miRNA RNAi and PTGS ??
2. How to control the single-copy plasmids partition after replication ??
3. How to copy a linear DNA in Adenovirus ??
4. How yeast to switch silent and active loci for mating type ??
5. Describe the licensing factors, ARS, ORC, Cdc6, and MCM, function in yeast replication ??
6. How to identity unidirectional replication??
7. How to maintain the lysogeny cycle by λ repressors ??
8. The *E. coli* tryptophan operon is controlled by attenuation, describe it ??
9. How to identity DNA-biding sites ??
10. Briefly draw the structure of tRNA ??

試題隨卷繳回