

※ 考生請注意：本試題不可使用計算機

1. Please explain the following terms: (50%; 5% for each)

- (1) Chromosome
- (2) Promoter (of a gene)
- (3) Transposon
- (4) Receptors
- (5) Cell cycle
- (6) Phenotype
- (7) Metastasis
- (8) Knock-out mice
- (9) Transformed cells
- (10) Caspases

2. After performing protein isolation, please describe what techniques you can use to examine whether you successfully obtain the desired proteins. (10%)

3. The molecular weight of factor X is 100. If you need to prepare 1, 10, 100 μM of X solution 10 ml for each concentration, how you will do it? (15%)

4. If you need to prepare a solution for your experiment, but you just realize that the compound does not dissolve in water. Can you discuss the possible reasons and how to solve the problem? (10%)

5. The figure demonstrates the extent of cell death after treating cells with A, or B, or A+B (AB), or A+B+C (ABC), or C. Please explain the effects of A, or B, or C individually, and also the interaction between A, B, and C. (15%)

