

※ 考生請注意：本試題不可使用計算機。請於答案卷(卡)作答，於本試題紙上作答者，不予計分。

1. Please describe the homologous recombination DNA damage repair process in details.
(20 points)
2. Please describe the functions of Bcl-2, Bcl-X_L, Bax, and Bak in apoptosis regulation in details. (20 points)
3. Please describe the “elongation cycle” of translation during protein synthesis and define the term “polysome”. (20 points)
4. Please describe the process “autophagy” including the initiation, autophagosome formation, and autophagosome maturation and “proteins” that are required for all of these process.
(20 points)
5. Please define the molecular function/s of following enzymes:
 - (1) Aminoacyl tRNA Synthetase (5 points)
 - (2) DNA Topoisomerase (5 points)
 - (3) Primase (5 points)
 - (4) Restriction Enzymes (5 points)