

※ 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。

Be concise in answering the following questions. Drawing is encouraged.

1. Explain epigenetics and provide 3 specific examples (10%).
2. What is a quantitative polymerase chain reaction? Provide 3 specific applications of the technique (10%).
3. Define and list 3 different kinds of stem cells (15%).
4. Define “cancer” and provide 3 potential causes leading to tumorigenesis (15%).
5. Please describe the meaning of the figure on the right (20%).
6. Define apoptosis and necrosis (10%). Give an example for death receptor-mediated apoptosis (10%).
7. Please describe the differences between phagocytosis and autophagy (10%).

