

系所組別： 生物資訊研究所

考試科目： 生命科學概論

考試日期：0308，節次：3

※ 考生請注意：本試題 可 不可 使用計算機**一、簡答題：(60分)**

1. What are apoptosis, necrosis and autophagic cell death. (15%)
2. Please describe at least four types of post-translational modification. (12%)
3. Please write down the full name of siRNA and miRNA, and explain their functions. (10%)
4. Please list three types of cytoskeletons according their size, from small to large. (8%)
5. Please describe the difference between mitosis and meiosis. (10%)
6. What is SNP, and please describe its significance. (5%)

二、選擇題：(40分，每題5分；單選)

1. The site for protein synthesis in the cell locates to
 - (A) Golgi complex
 - (B) Mitochondria
 - (C) Nucleus
 - (D) Rough ERs
2. To identify an unknown protein ID from 2D-gel, which technique will be used
 - (A) Mass spectrometry
 - (B) Autoradiography
 - (C) Flow cytometry
 - (D) Confocal microscopy
3. Which of the following molecules is NOT belonging to cytokine?
 - (A) EGF (epidermal growth factor)
 - (B) Interferon
 - (C) TNF (tumor necrosis factor)
 - (D) None of the above

(背面仍有題目,請繼續作答)

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4. What is the microtubule organization center (MTOC)?
- (A) centrosome
 - (B) centromere
 - (C) kinetochore
 - (D) telomere
5. The enzyme activity can be modified by
- (A) Post-translational modification
 - (B) Co-factors
 - (C) Co-enzymes
 - (D) All of the above
6. The DNA damage in a cell is monitored by
- (A) EGFR
 - (B) NF κ B
 - (C) c-Jun
 - (D) p53
7. Which is the following sequence that can be recognized by restriction enzyme?
- (A) GGATCC
 - (B) GGGTCC
 - (C) GAACTT
 - (D) GAATCC
8. The cell cycle progression is
- (A) G1 \rightarrow G2 \rightarrow S \rightarrow M
 - (B) S \rightarrow G1 \rightarrow M \rightarrow G2
 - (C) G1 \rightarrow S \rightarrow G2 \rightarrow M
 - (D) G2 \rightarrow M \rightarrow S \rightarrow G1