

銘傳大學 101 學年度研究所碩士班招生考試

生物科技學系碩士班

第二節

「基因體與蛋白質體學」試題

(第 1 頁共 1 頁) (限用答案本作答)

可使用計算機 不可使用計算機

一、解釋名詞 (20%)

1. DNA microarrays
2. Epigenetics
3. Single nucleotide polymorphism (SNP)
4. System biology
5. Contig
6. Surface-enhanced laser desorption/ionization (SELDI)
7. BLAST
8. CpG islands
9. Copy-number variations (CNVs)
10. FASTA

二、配合題 (1-5 題, 請由 A-G 選出一個最適合選項) (20%)

1. **Q-PCR**
2. **Isoelectric point**
3. **matrix-assisted laser desorption/ionization (MALDI)**
Mass Spectrometry
4. **細胞微陣列晶片 (Cell-based microarray)**
5. **Chromatin immunoprecipitation (CHIP)**

- A SELDI-TOF
- B Threshold Cycle (CT)
- C Taylor cone (泰勒椎)
- D 2D gel electrophoresis
- E Reverse transfection of microarrays
- F DNA-protein interaction
- G Protonated matrix molecule

三、申論題 (60%) (請試選三題作答)

1. If we try to examine the CNVs of certain genes from patients of diabetes (糖尿病), what method(s) are required for the investigation?
2. If we want to determine H5N2 species from bird Influenza virus (禽流感病毒) what methods we may explore for viral genomic analysis?
3. Please design research procedures to define how to identify potential biomarker from serum samples to differentiate normal and HBV (hepatitis B virus B 型肝炎) carriers from their post-translational modification of Apo lipoproteins using mass spectrometric analysis. (You need to explain why the step can resolve our questions)
4. Please give one example to describe why microRNAs can be used as potential biomarkers in the diagnosis of cancer 癌症診斷.

試題完
End of exam