

考 試 科 目	細胞與分子生物學	系 所 別	神經科學研究所	考 試 時 間	2月2日(五) 第一節
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問答題

1. Explain each of the following terms (1) transcript isoform (2) non-coding RNA (3) transcription enhancer (15pts)
2. List the biological functions of the following post translational modifications (1) phosphorylation (2) proteolytic cleavage (3) ubiquitination (15pts)
3. Explain each of the following type of mutation (1) nonsense mutation (2) missense mutation (3) frameshift mutation (4) translocation (10pts)
4. Compare the biochemical properties and signaling pathways downstream to G proteins-couple receptors and receptor tyrosine kinase (10pts)
5. Depict a mitochondria and label the location of the following biochemical reactions (1) β -oxidation (2) Krebs cycle (3) electron transport chain (10pts)
6. Compare the biochemical properties and biological functions of microtubules and microfilaments (10pts)
7. Compare the molecular mechanisms of vesicle trafficking in each of the following routes (1) ER to Golgi (2) endocytosis (3) Golgi to plasma membrane (exocytosis) (15pts)
8. Explain the conditions that are suitable for applying the following techniques for analyzing the expression of a specific gene (1) *In situ* hybridization (2) real-time PCR (3) chromatin immunoprecipitation (15pts)

備

註

- 一、作答於試題上者，不予計分。
- 二、試題請隨卷繳交。