國立成功大學

110學年度碩士班招生考試試題

編　號：279

系　所：微生物及免疫學研究所

科　目：分子生物學

日　期：0203

節　次：第 3 節

備　註：不可使用計算機

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※ 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. What is “Cell cycle”? Please describe its regulation and implication in physiology or disease (20 points).

2. Please describe the synthesis and function of MicroRNA (miRNA) (20 points).

3. Please describe molecular mechanisms of how DNA is transcribed into messenger RNA and this messenger RNA is then translated into a protein in eukaryotic cells (20 points).

4. If you are a scientist, you have found that expression of a gene called X is increased in lung cancer cells. Please design experiments to determine whether this X gene is involved in tumor formation of lung cancer (20 points).

5. Please describe or define the following terms: (1) Posttranslational modification; (2) Autophagy; (3) Chaperones ; (4) Chromatin Remodeling (Total 20 points, 5 points for each).