

114BE01

國立臺北科技大學 114 學年度碩士班招生考試

系所組別：3601

化學工程與生物科技系生化與生醫工程碩士班

第一節 生物化學 試題（選考）

第 1 頁 共 1 頁

注意事項：

1. 本試題共九題，共 100 分。
2. 不必抄題，作答時請將試題題號及答案依照順序寫在答案卷上。
3. 全部答案均須在答案卷之答案欄內作答，否則不予計分。

1. Explain the following terminology (30%) 每一小題 3 分
 - (1) isoelectric point of protein (2) melting temperature of DNA (3) repressor
 - (4) lipase (5) competitive inhibitor (6) denaturation (7) lactate dehydrogenase
 - (8) inducible promoter (9) RNA replicase (10) feedback inhibition
2. Describe the sum reaction of glycolysis. (5%)
3. Explain the regulation of the *lac* operon in *E. coli*. (10%)
4. Which are amino acids? (1) glycerol (2) lactose (3) cytosine (4) glucose
 - (5) cysteine (6) glycine (7) alanine (8) guanine (9) adenine (10) methionine (5%)
5. Which are bases? (1) adenine (2) alanine (3) cysteine (4) cytosine (5) glycerol
 - (6) glycine (7) guanine (8) threonine (9) thymine (10) urine (5%)
6. Describe the lateral flow immunoassay. (10%)
7. A PCR cycle contains three steps. Please design the temperature for each step and describe the reasons. (10%)
8. Compare translation, transcription and DNA replication from the template, monomer, product, enzyme, and starting region. (15%)
9. Please draw and label a diagram of cell membranes. (10%)