# 國立成功大學
# 111學年度碩士班招生考試試題

編　號：326

系　所：臨床醫學研究所

科　目：生物化學

日　期：0220

節　次：第 3 節

備　註：不可使用計算機

編號： 326

# 國立成功大學 111 學年度碩士班招生考試試題

系　　所：臨床醫學研究所

考試科目：生物化學

考試日期：0220，節次：3



※ 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. Briefly describe the following terms.(15%)

(1) ketone bodies (3%)

(2) beta oxidation (3%)

(3) Wobble hypothesis (3%)

(4) Alternative splicing (3%)

(5) Transcriptome (3%)

2. Briefly describe the following methods (12%)

(1) Chromatin immunoprecipitation assay (3%)

(2) Patient-Derived Xenograft (PDX) Models (3%)

(3) Electrophoretic mobility shift assay (3%)

(4) Two-dimensional electrophoresis (3%)

3. Briefly describe and compare the following terms: (25%)

a. Glycoproteins vs. Proteoglycans '''

b. Small interfering RNAs (siRNAs) vs. MicroRNAs (miRNAs)

c. DNA polymerase vs. RNA polymerase

d. DNA microarray vs. Protein microarray

e. Autophagy and ubiquitin-proteasome system

4. Please list three different classes of DNA-binding domains and three different classes of transcription-activation domains found in eukaryotic transcription factors.(10%)

5. Describe glycolysis and pentose phosphate pathway.(10%)

6. Describe the basis for separation protein by ion exchange, hydrophobic interaction, gel filtration and affinity chromatography.(10%)

7. Explain why the $(Na^{+}\text{-}K^{+})$-ATPase and $Ca^{2+}$-ATPase carry out transport in one direction only?(10%)

8. Describe how a membrane protein and a secreted protein are transported from RER to final destinations. (8%)