

# 臺中健康暨管理學院

## 九十四學年度碩士班暨碩士在職專班招生考試試題紙

系 所 別	組 別	考試科目	考試日期	時 間	備 註
生物科技與生物資訊學系碩士班	生物資訊組	分子生物學	94.4.24	10:30-12:10	共一頁

### SHORT QUESTIONS

- DNA replication of chromosomal DNA is semidiscontinuous. What is the meaning of this term? (5 points)
  - You find that DNA polymerase has a 3' to 5' exonuclease activity. What do you think is the purpose of this activity? (5 points)
- We can overexpress insulin in bacteria cells by using the recombinant-DNA technology. Why can't glycoproteins be mass-produced by engineered bacteria? (10 points)
- DNA isolated from a newly identified bacterial virus contains 30% G, 31% A, 17% T, and 22% C. Does this seem strange to you? Why or why not? And how would explain these results? (10 points)
- Why is a cDNA gene made using reverse transcriptase often shorter than the natural form of the gene? (10 points)
- Why may a mutation in a single gene cause a major change in the phenotype of a fruit fly, such as an extra pair of legs or wings? (10 points)
  - How can you analysis the changes of gene expression pattern after a mutation. (10 points)
- What is a promoter, a codon and a gene? (10 points)
- What is the Central Dogma of molecular biology? (10 points)
- What does alternative splicing mean? (10 points)
- Please explain the differences between "Southern blot", "Western blot" and "Northern blot". (10 points)