

私立臺北醫學院 90 學年度第 2 學期 期中 考試 命 題紙
期末

系級	科目	授課教師	考試日期	學號	姓名
保二	生物化學	陳建宏	91年6月20日第 節		
※①請注意本試題共 4 張。如發現頁數不足及空白頁或缺印，應當場請求補齊，否則缺少部份概以零分計。 ②每張試題卷務必填寫(學號)、(姓名)。					

1. 如何利用 pronuclear microinjection 的技術製作出 transgenic animals? (8%)
2. 請說明 gene targeting(或 gene knockout)的意義及其在此”後基因體時代”之應用性。(7%)

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保健營養

配合題 (複選)

題目欄

- 1 Pheochromocytoma 嗜絡細胞瘤
- 2 K⁺ Channel 鉀離子通道
- 3 ras gene
- 4 rb gene

答案欄

- A Amine derivatives 胺類衍生物
 - B Effector 執行者
 - C Modulator 協調者
 - D Steroid hormone 固醇類荷爾蒙
-
- A Anti-growth 抑制生長
 - B Dominant 顯性
 - C Proliferation 增生
 - D Recessive 隱性

答 案 紙

(共 30 分)

題號	1	2	3	4	
答 案	A	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	B	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	C	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	D	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

將正確選項之空格圈“○”塗滿“●”

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保二 生化試題 鄭可大 姓名：_____ 學號：_____

(54%)

- () 1. A. Genome mapping B. Southern blotting C. Gene cloning D. Footprinting technique can be used to locate DNA sites in contact with sequence-specific DNA-binding proteins.
- () 2. A. Satellite DNA B. Pseudogene C. Alu element D. Intron is a region in the coding sequence of a gene that is not translated into protein.
- () 3. A. Helicase B. DNA polymerase III C. DNA gyrase D. DNA topoisomerase catalyzes the unwinding of double-stranded DNA under the process of DNA replication.
- () 4. Topoisomerases, a group of enzymes that change supercoiling of DNA helices by either allowing the superhelical torsion to relax or adding more twists. Which type topoisomerase catalyze double-strand breakage and rejoining to concert the positive supertwist to a negative one? A. topoisomerase I B. topoisomerase II C. topoisomerase III D. topoisomerase IV
- () 5. In DNA replication, the leading daughter DNA strand is elongated continuously in _____ direction. The lagging strand is synthesized discontinuously, each fragment is synthesized in _____ direction.
 A. 5'→3' ; 3'→5' B. 3'→5' ; 5'→3' C. 5'→3' ; 5'→3' D. 3'→5' ; 3'→5'.
- () 6. Methylation is responsible for the tissue-specific inactivation of genes during development. The sole methylated base in eukaryotic DNA is A. N⁴-methylcytosine B. N⁶-methyladenine C. 5-azacytidine D. 5-methylcytosine.
- () 7. Base excision repair removes one or more nucleotides from a site of base damage. The process initiates with enzymatic cleavage of glycosidic bond between the damaged base and deoxyribose. A. photolyase B. alkyltransferase C. excinuclease D. DNA-N-glycosylase.
- () 8. The function of σ subunit of *E. coli* RNA polymerase is A. chain initiation B. chain elongation C. DNA binding D. promoter recognition.

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- () 9. A. Recombination B. Attenuation C. Suppression mutation D. Operon is a mechanism for regulating prokaryotic gene expression in which the synthesis of a mRNA is terminated before RNA polymerase has reached the structural genes.
- () 10. A. UAG B. UAA C. UUC D. UGA is not the stop codon.
- () 11. The order of mRNA processing in eukaryotes is A. capping→polyadenylation→splicing B. polyadenylation→capping→splicing C. capping→splicing→polyadenylation D. polyadenylation→splicing→capping.
- () 12. A. Chaperonin B. Signal recognition particle C. Ubiquitin D. Proteasome is involve in managing the folding of other proteins.
- () 13. A. Topoisomerase B. Transposase C. Telomerase D. Transferase is a DNA polymerase that adds a short repeating sequence to the 3' strand at either end of a chromosomal DNA molecule, thus creating a single-strand overhang.
14. Comparison of genome structure and gene expression between prokaryotes and eukaryotes. Please mark "+" symbol (present) and "-" symbol (absent) on the underline in the table. 請在表中橫線上，標上+或-，表示原核或真核細胞有或無此構造或現象。

	Prokaryotes	Eukaryotes
Telomere	—	+ (Example)
Plasmid	—	—
Operon	—	—
Intron	—	—
Polycistronic message	—	—
Alternative splicing	—	—