

臺北醫學大學 103 學年度碩士班暨碩士在職專班招生入學考試

生物醫學資訊概論試題

本試題第 1 頁；共 1 頁
(如有缺頁或毀損，應立即請監試人員補發)

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| 注意事項 | 一、本試題共五大題，共計 100 分。
二、請將最適當的答案依題號作答於答案卷上。
三、試題答錯者不倒扣；題次號碼錯誤或不按順序或鉛筆作答，不予計分。 |
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壹、請說明以下醫學資訊標準詞彙：每題 5%，共 15%

- 一、HL7 (Health Level Seven)
- 二、ICD-9-CM (International Classification of Diseases-Clinical Modification)
- 三、SNOMED (Systematized Nomenclature of Medicine)

貳、請簡單解釋以下生醫資訊相關名詞：每題 5%，共 20%

- 一、Proteomics
- 二、Prevalence
- 三、Microarray chip
- 四、Messenger RNA (mRNA)

參、臨床決策支援系統(Clinical Decision Support System)為運用資訊科技將整合所有相關資訊，提供醫療決策支援給臨床工作人員參考之系統。

- 一、臨床決策支援系統常運用資料探勘及機器學習技術來分析資料和建立預測模型，如 logistic regression 為常見的一種，請列出並簡單說明其他至少兩種資料探勘技術。(10%)
- 二、其中以下幾個方法常用來評估系統的表現，請簡單解釋以下幾種評估方法。
 1. ROC (Receiver Operating Characteristic) curve (5%)
 2. AUC (Area Under the ROC Curve) (5%)

肆、選擇題：每題 5%，共 25%

1. What does it mean when the sensitivity of a test is said to be high?
 - Ⓐ In the case of a patient having the disease, the chance of getting a negative test result is relatively high.
 - Ⓑ In the case of a patient not having the disease, the chance of getting a positive test result is relatively high.
 - Ⓒ In the case of a patient not having the disease, the chance of getting a negative test result is relatively high.
 - Ⓓ In the case of a patient having the disease, the chance of getting a positive test result is relatively high.
2. Which of the followings is a correct description?
 - Ⓐ When using the ICD coding system, the minimum required for reporting mortality statistics to WHO is two-digit codes.
 - Ⓑ The Current Procedural Terminology (CPT) is used for coding diagnostic and therapeutic procedures.
 - Ⓒ ICD-9 is more suitable for clinical reports than ICD9-CM.
 - Ⓓ SNOMED cannot be extended by users through postcoordination of existing terms.
3. Which of the followings is a medical datum?
 - Ⓐ A red blood cell count.
 - Ⓑ A temperature reading.
 - Ⓒ Any single observation of a patient.
 - Ⓓ All of the above.
4. Which database listed below stored the information of non-redundant gene ID?
 - Ⓐ Entrez Gene
 - Ⓑ HGNC (Human Genome Nomenclature Committee)
 - Ⓒ Flybase
 - Ⓓ All of the above
5. Which database listed below gives an integrated access to the biomedical literature, protein, and nucleic acid sequences information?
 - Ⓐ NCBI Entrez
 - Ⓑ GenBank
 - Ⓒ OMIM database
 - Ⓓ Protein data bank

伍、簡答題：每題 10%，共 20%

- 一、Please list three drawbacks of the traditional paper medical record.
- 二、Please draw a picture to illustrate the concept of the central dogma of molecular biology.