



國立雲林科技大學

97 學年度碩士班入學招生考試試題

乙組

系所：資管系

科目：計算機概論 (乙)

第一部分

一、簡答題(每題 3 分，共 30 分)。

1. 設計程式主要利用哪些控制結構來完成？
2. 試舉出兩種 VB、JAVA 及 C++ 等程式語言皆有提供呼叫函數(Function)或方法(Method)時傳參數的方法？
3. 有哪些網頁程式設計方法可以同時使用在 Windows 及 Unix(Linux) 作業系統上的？
4. 試舉出兩種較簡單的 CPU 排程(Scheduling)方法？
5. 動態分頁虛擬記憶體管理的淘汰策略有哪些？
6. 在結構化系統分析中，實體關係圖(ERD)及資料流程圖(DFD)主要的作用為何？
7. 在統一塑模語言(UML)中，有哪些圖形(Diagram)是使用在行為模型觀點(Behavioral Model View)上的？
8. 試舉出兩種在 Windows 作業系統的 DOS 模式下可以有效的來偵測網路故障的指令？
9. 試舉出兩種需要利用 Ajax 技術才可以達成的網頁程式應用？
10. 在公開金鑰加密(Public Key Encryption)的方法中，使用者 A 要送加密的 Email 給使用者 B 時，該用哪一把金鑰(Key)加密呢？另外，使用者 A 要數位簽章某份給使用者 B 的文件，此時又該用哪一把金鑰(Key)加密呢？

二、試比較分析個人電腦、個人數位助理(PDA)及手機等設備，在硬體與軟體方面有何異同之處。(10%)

三、試分別利用遞迴(recursion)與非遞迴(non-recursion)方式，寫出輸入一串字串並顛倒(reverse)印出此字串之演算法。例如，輸入為"computer"輸出為"retupmoc"。(10%)

第二部分(單選題，每題 2 分，共 50 分)

1. Which one of the followings is not an advantage of the DBMS approach?
 - A. Restricting unauthorized access
 - B. Providing storage for efficient query processing
 - C. Prolonged application development time
 - D. Providing backup and recovery
2. Which one of the followings does access path belong to?

A. Physical data model	B. Implementation data model
C. High-level data model	D. Conceptual data model



3. Which one of the followings is the correct sequence (from beginning to end) of database design phases?
 - A. Physical design, conceptual design, logical design
 - B. Logical design, conceptual design, physical design
 - C. Conceptual design, logical design, physical design
 - D. Physical design, logical design, conceptual design
4. Which one of the followings can model the case in which a single superclass/subclass relationship with more than one superclass?
 - A. synthesis
 - B. category
 - C. shared subclass
 - D. lattice
5. Which one of the followings specifies the non-null of primary key?
 - A. Semantic integrity constraint
 - B. Domain constraints
 - C. Referential integrity constraint
 - D. Entity integrity constraint
6. Which one of the followings is *not* a member of the complete set of relational algebra operations?
 - A. join
 - B. select
 - C. project
 - D. minus
7. Which one of the followings, when performing ER-to-relational mapping, does the ER model construct *multi-valued attribute* map to?
 - A. attribute
 - B. domain
 - C. relation and foreign key
 - D. primary key
8. Which one of the followings is *not* a built-in aggregate function in SQL?
 - A. AVG
 - B. CNT
 - C. MAX
 - D. SUM
9. Which one of the followings embeds SQL commands in a general-purposed programming language?
 - A. iSQL
 - B. SQLPLUS
 - C. PL/SQL
 - D. SQLJ
10. What normal form is a relation schema R in, if whenever a nontrivial functional dependency $X \rightarrow Y$ holds in R , then X is a superkey in R ?
 - A. BCNF
 - B. 3NF
 - C. 2NF
 - D. 1NF
11. Which one of the followings is *not* a desirable property of relational decompositions?
 - A. Dependency preserving
 - B. Attribute preserving
 - C. Key preserving
 - D. Lossless join
12. Which one of the followings is *not* a criterion in guiding the choice of physical database design options?
 - A. Response time
 - B. Software acquisition cost
 - C. Space utilization
 - D. Transaction throughput
13. Which one of the followings is the most efficient in inserting a new record?
 - A. Linear hashing file
 - B. Clustered file
 - C. Sorted file
 - D. Heap file
14. Which one of the followings is *not* a single-level ordered index?
 - A. B-tree index
 - B. Primary index
 - C. Clustering index
 - D. Secondary index

15. Which one of the followings is *not* a property of database transactions?
A. Atomicity
B. Consistency preservation
C. Interconnection
D. Durability
16. What is the ability of objects belonging to different data types to respond to method calls of methods of the same name, each one according to an appropriate type-specific behavior?
A. abstraction
B. polymorphism
C. encapsulation
D. inheritance
17. What is the language that can be accepted by a finite state machine?
A. context-free language
B. recursively enumerable language
C. recursive language
D. regular language
18. Which one of the followings is a mobile software platform?
A. J2ME
B. J2XE
C. J2EE
D. J2SE
19. Which one of the followings is used to describe a computer's instruction set such that any instruction can use data of any type via any addressing mode?
A. Extendible instruction set
B. Universal instruction set
C. Orthogonal instruction set
D. Relative instruction set
20. Which one of the followings is *not* a basic characteristic of fault tolerance?
A. Availability of reversion modes
B. Single point of failure
C. Fault isolation to the failing component
D. Fault containment to prevent propagation of the failure
21. Let P_1 and P_2 be two program fragments. Let I_1 be all of the input variables to P_1 and O_1 the output variables; let I_2 be all of the input variables to P_2 and O_2 the output variables. Which one of the followings is *not* a pre-condition for P_1 and P_2 to be executed in parallel?
A. $I_1 \cap O_2 = \emptyset$
B. $O_1 \cap O_2 = \emptyset$
C. $I_2 \cap O_1 = \emptyset$
D. $I_1 \cap I_2 = \emptyset$
22. Which one of the followings forms the basis of almost all functional programming languages?
A. Lambda calculus
B. Relational calculus
C. Stochastic calculus
D. Vector calculus
23. Which one of the followings is *not* a mechanism to coordinate between threads in shared memory communications?
A. mutex
B. semaphore
C. Petri net
D. monitor
24. Which one of the followings, in information retrieval, is the fraction of the documents retrieved that are relevant to the user's information need?
A. F-measure
B. precision
C. recall
D. fall-out
25. Which one of the followings, as a phase in compilation, breaks the source code text into small pieces called tokens?
A. Syntax analysis
B. Preprocessing
C. Semantic analysis
D. Lexical analysis