國立彰化師範大學 99 學年度碩士班招生考試試題

系所：資訊管理學系　　　　　　　　　　　　　科目：計算機概論

一・選擇題(60%，每題 3%)

1. (　) Object-oriented programming language emphasizes on _____.
   (a) code execution (b) code reuse (c) code rewritten (d) code inheritance (e) none of the above.

2. (　) _____ translates and executes the source code line by line.
   (a) Assembler (b) Interpreter (c) Compiler (d) Linker (e) none of the above.

3. (　) Which of the followings is the pure object-oriented language?
   (a) Java (b) Smalltalk (c) C++ (d) C (e) none of the above.

4. (　) Using binary search on a dataset of 1000 records, how many times does it need to get the answer?
   (a) 128 (b) 8 (c) 10 (d) 512 (e) none of the above.

5. (　) (In C) int x=1; if (x = 2) x =3; the value of x is _____.
   (a) 1 (b) 2 (c) 3 (d) compilation error (e) none of the above.

6. (　) (In Java) int x=1; if (x = 2) x =3; the value of x is _____.
   (a) 1 (b) 2 (c) 3 (d) compilation error (e) none of the above.

7. (　) Which of the followings has nothing to do with wireless communication technology?
   (a) AMPS (b) GSM (c) RFID (d) BSD (e) none of the above.

8. (　) The communication port used in HTTP is _____.
   (a) 8 (b) 10 (c) 80 (d) 1080 (e) none of the above.

9. (　) GPRS is the _____ generation of mobile communication.
   (a) 2 (b) 2.5 (c) 3 (d) 3.5 (e) none of the above.

10. (　) $f(x,y,z) = (xz')(y+z) + xyz'$ is a Boolean function. $(x,y,z) = (\_,\_,\_)$ will make $f(x,y,z) = 1$.
    (a) 1,0,1 (b) 0,0,0 (c) 1,1,1 (d) 1,1,0 (e) none of the above.

11. (　) In 8-bit signed integer, the value of -96 in 2's complement is _____.
    (a) 10011111_2 (b) 10100000_2 (c) 01100000_2 (d) 01010000_2 (e) none of the above.

12. (　) int x=1; int y; y = (++x == 1) ? 1 : 0; The value of (x,y) is _____.
    (a) 2,0 (b)1,1 (c) 1,0 (d) 2,1 (e) none of the above.

13. (　) During recovery, when changes are written to the transaction log and the database is updated after the transaction reaches its commit point, the procedure is said to be making use of the _____ technique.
    (a) write-through (b) immediate-update (c) deferred-write (d) deferred-read (e) none of the above.

14. (　) A transaction must be either entirely completed or _____.
    (a) quitted (b) aborted (c) shared (d) handled (e) none of the above.

15. (　) _____ is guaranteed through a locking protocol known as two-phase locking.
    (a) Atomicity (b) Isolation (c) Monotonicity (d) Serializability (e) none of the above.

16. (　) The postfix representation of (3+5)*7-2 is _____.
    (a) -*+3572 (b) 25*7-2 (c) 2-7*52 (d) 35+7*2- (e) none of the above.

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☆☆請在答案紙上作答☆☆   共 2 頁，第 2 頁

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17. (   ) Blog means _____ log.
    (a) Internet (b) biography (c) bulletin (d) web (e) none of the above.

18. (   ) Chunghwa Telecom (中華電信) is an example of a(n) _____.
    (a) mobile carrier (b) ISP (c) WAN (d) LAN(e) none of the above.

19. (   ) Cloud computing is a kind of _____ system.
    (a) client-server (b) centralized (c) distributed (d) parallel (e) none of the above.

20. (   ) The two properties of time stamping method is uniqueness and _____
    (a) atomicity (b) atomic (c) isolation (d) monotonicity (e) none of the above.

二‧請寫出底下專有名詞的英文全名，不用解釋(20%，每題 4%)

1. DML (a language in database)：_____

2. RFID (in communication)：_____

3. SOAP (in web technology)：_____

4. JIT compilation (in programming language)：_____

5. SNMP (in computer network)：_____

三‧簡答題(20%)

1. (a) (2%) Explains what an *Abstract Data Type (ADT)* is.

    (b) (2%) How are ADTs related to the design principle of *information hiding*?

    (c) (2%) What are the three tiers in *three-tier architecture*?

    (d) (2%) What are the benefits of *cloud computing*?

2. A recursive function is shown below

    ```
    int f(int n) {
        if (n < 2) return n;
        else return n + f(n-1) + f(n-2);
    ```

(a) (2%) What's the value of f(10)?
(b) (5%) What's the time complexity of the above function? Show your complete work.
(c) (5%) Rewrite the above recursive function into an iterative function using C language.