

# 國立彰化師範大學 98 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

☆☆請在答案紙上作答☆☆

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## 一、選擇題(40%)

- ( ) RAID 0+1 is for (a) striping (b) mirroring (c) spanning (d) parallel (e) none of the above.
- ( ) CPU consists of ALU and \_\_\_\_\_. (a) MM (b) MU (c) DU (d) CU (e) none of the above.
- ( ) Amazon.com is an online store which belongs to \_\_\_\_\_. (a) B2B (b) C2C (c) B2C (d) C2B (e) none of the above.
- ( ) HTTP uses \_\_\_\_\_ protocol. (a) stateful (b) stateless (c) connection-oriented (d) connectionless (e) none of the above.
- ( ) Online store uses \_\_\_\_\_ to stores shopping cart information. (a) cookie (b) session (c) application (d) file (e) none of the above.
- ( ) Which of the following memory has the best execution speed? (a) register (b) cache (c) SRAM (d) DRAM (e) none of the above.
- ( ) \_\_\_\_\_ is a widely used e-mail protocol. (a) SNMP (b) SMTP (c) HTTP (d) TCP/IP (e) none of the above.
- ( ) IP is 163.23.199.100 and subnet mask is 255.255.255.240, then the broadcast address is 163.23.199.\_\_\_\_. (a) 95 (b) 96 (c) 111 (d) 112 (e) none of the above.
- ( ) Gray code is widely used to facilitate \_\_\_\_\_. (a) data prevention (b) data correction (c) error prevention (d) error correction (e) none of the above.
- ( ) Which of the followings is NOT one of the four necessary conditions of deadlock? (a) mutual exclusion (b) hold and wait (c) no preemption (d) circular wait (e) none of the above.
- ( ) Which of the followings is NOT a kind of short distance communication protocol? (a) GSM (b) RFID (c) Bluetooth (d) IrDA (e) none of the above.
- ( ) Binary number 0.1101 is \_\_\_\_\_ in decimal. (a) 0.8125 (b) 0.78125 (c) 0.875 (d) 0.765625 (e) none of the above.
- ( ) Which of the followings is NOT a kind of server-side scripting language? (a) Java (b) ASP (c) PHP (d) Code Fusion (e) none of the above.
- ( ) The mail purpose of normalization is to reduce data \_\_\_\_\_. (a) redundancy (b) lost (c) overflow (d) corruption (e) none of the above.
- ( ) Which of the following protocols is used to digitize voice and transfer it over the Internet using IP protocol? (a) VoIP (b) SMA (c) FTP (d) Telnet (e) none of the above.
- ( ) \_\_\_\_\_ is a general purpose specification for creating custom markup language. (a) HTML (b) XML (c) RSS (d) CSS (e) none of the above.
- ( ) 1GB = \_\_\_\_\_ bytes. (a)  $2^{20}$  (b)  $2^{30}$  (c)  $2^{40}$  (d)  $2^{50}$  (e) none of the above.
- ( ) `int x=1; int y; y = (x++ == 1) ? 1 : 0;` The value of x and y after execution is \_\_\_\_\_. (a) 1 1 (b) 1 2 (c) 2 1 (d) 2 2 (e) none of the above.

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19. ( ) Object-oriented language uses \_\_\_\_\_ to hide the implementation details of a class.  
(a) polymorphism (b) inheritance (c) encapsulation (d) dynamic binding  
(e) none of the above.
20. ( ) \_\_\_\_\_ is a telecommunication standard for sending messages that include multimedia objects. (a) MMA (b) SOA (c) MMS (d) MSA (e) none of the above.

## 二、名詞解釋(若是英文縮寫，除了解釋外，還要寫出英文全名)(20%)

- (1) Augmented Virtual Reality (in multimedia)
- (2) RPG (in computer game)
- (3) LRU (in caching algorithm of operating system)
- (4) Wi-Fi (in wireless network technology)
- (5) OOP (in computer language)

## 三、簡答或程式題(40%)

1. Locking and commit protocol
  - (a) What is a two phase locking protocol? How does it work?
  - (b) What is a two phase commit protocol? How does it work?
2. Write a recursive C function which calculates the gcd (greatest common divisor) of two positive integers.
  - (a)

```
int gcd(int n1, int n2) {  
    // begin writing your code here  
  
  
  
  
  
  
  
  
  
}
```
  - (b) What's the time complexity? (Note: You have to show how you derive the answer. Simply give an answer will get 0 score.)
3. Compare ADSL versus cable modem technology in terms of the followings :
  - (a) Speed
  - (b) Stability
  - (c) Security

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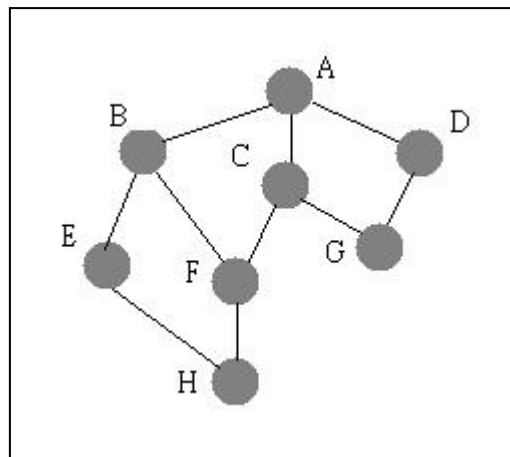
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4. Consider the graph on the right-hand side.



- Starting from point A, draw the spanning tree using Depth First Search algorithm.
- Starting from point A, draw the spanning tree using Breadth First Search algorithm.
- Show what kind of application will benefit from Depth First Search algorithm more than Breadth First Search algorithm.