

國立彰化師範大學九十六學年度碩士班招生考試試題

系所：數位內容科技與管理研究所

科目：計算機概論

請在答案紙上作答

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一. 單選題(60%，每題 3 分)

1. ( ) In DBMS, \_\_\_\_\_ is enforced through the foreign key.  
(a) entity integrity (b) referential integrity (c) data uniqueness (d) data redundancy (e) none of the above.
2. ( ) Problems inherent in the many-to-many relationship in the relational database environment can best be avoided by \_\_\_\_\_.  
(a) using the hierarchical model (b) placing all entities in one table (c) breaking the M:N situation up, to produce a set of 1:M relationships (d) enforcing referential integrity rules (e) none of the above.
3. ( ) Which of the following is a pure object-oriented programming language.  
(a) Smalltalk (b) ADA (c) Schema (d) Visual Basic (e) none of the above.
4. ( ) A(n) \_\_\_\_\_ is an ordered collection of data in which each element contains the location of the next element.  
(a) linked list (b) array (c) stack (d) queue (e) none of the above.
5. ( ) The \_\_\_\_\_ model in paging systems is based on the locality of reference property.  
(a) virtual memory (b) cache (c) swapping (d) working set (e) none of the above.
6. ( ) The recursive step in the factorial algorithm is \_\_\_\_\_.  
(a) return num \* Factorial(num-1) (b) return num-1 (c) return Factorial(num-1) (d) return 1 (e) none of the above.
7. ( ) One of the important advantages of SQL is its ability to let the user produce complex free-form \_\_\_\_\_.  
(a) queries (b) reports (c) forms (d) databases (e) none of the above
8. ( ) Which of the following has the fastest access speed?  
(a) cache (b) register (c) DRAM (d) flash ROM (e) none of the above.
9. ( ) The \_\_\_\_\_ system is a program that facilitates the execution of other programs.  
(a) file management (b) memory management (c) disk (d) operating (e) none of the above.
10. ( ) Assuming variable x's value is 99, then *return ++x;* will return value \_\_\_\_\_.  
(a) 100 (b) 99 (c) 98 (d) 97 (e) none of the above.
11. ( ) The postfix of expression  $B/(C*D/E)-A$  is equivalent to \_\_\_\_\_.  
(a)  $B/(C*D/E)A-$  (b)  $BCDE/*A-$  (c)  $-/B*C/DEA$  (d)  $ABCDE/*/-$  (e) none of the above.
12. ( ) Every computer today is based on the \_\_\_\_\_ model.  
(a) Intel (b) Microsoft (c) von Neumann (d) input/output (e) none of the above.
13. ( ) Memory and the CPU are connected using three busses. Which of the following is NOT among them?  
(a) universal serial bus (b) data bus (c) control bus (d) address bus (e) none of the above.
14. ( ) In Java, an object is instantiated via the keyword \_\_\_\_\_.  
(a) create (b) initialize (c) construct (d) new (e) none of the above.
15. ( ) In \_\_\_\_\_, the program is divided into pages, but the pages can be loaded into memory one by one, executed, and replaced by another page.  
(a) segmentation (b) demand segmentation (c) virtual memory (d) demand paging (e) none of the above.
16. ( ) A cell phone with the capability of PDA is called \_\_\_\_\_.  
(a) intelligent phone (b) iPhone (c) PDA phone (d) smart phone (e) none of the above.
17. ( ) To prevent \_\_\_\_\_, an operating system can put resource restrictions on processes.  
(a) starvation (b) synchronization (c) paging (d) deadlock (e) none of the above.
18. ( ) Most web system uses video \_\_\_\_\_ technology so that users can watch video online.  
(a) downloading (b) uploading (c) caching (d) streaming (e) none of the above.
19. ( ) Napster, Freenet, Gnutella or Kuro uses \_\_\_\_\_ architecture for music exchange.  
(a) centralized (b) distributed (c) P2P (d) B2B (e) none of the above.
20. ( ) Domain *www.wonderland.com.au* is located in  
(a) Austria (b) Australia (c) America (d) Argentina (e) none of the above.

二. 名詞(20%，每題 2 分)，寫出英文全名 (不用寫定義)

1. ATM (in network)  
full-name: \_\_\_\_\_
2. ERD (in database)  
full-name: \_\_\_\_\_
3. WYSIWYG (in graphical user interface)  
full-name: \_\_\_\_\_
4. LED (in display technology)  
full-name: \_\_\_\_\_

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5. HTML (in web)

full-name: \_\_\_\_\_

6. ADT (in programming language)

full-name: \_\_\_\_\_

7. CSMA/CD (in network)

full-name: \_\_\_\_\_

8. DMA (in operating system)

full-name: \_\_\_\_\_

9. GSM (in mobile communication)

full-name: \_\_\_\_\_

10. SQL (in database )

full-name: \_\_\_\_\_

三. 簡答題(20%)

1. (6%) Which of the OSI layers is (are) involved in each of the following activities?

- \_\_\_\_\_ (a) Logging into a remote computer.
- \_\_\_\_\_ (b) Encrypting and decrypting data.
- \_\_\_\_\_ (c) Sending a frame to the next station.
- \_\_\_\_\_ (d) Sending a packet from the source to the destination.
- \_\_\_\_\_ (e) Sending a long message from the source to the destination.
- \_\_\_\_\_ (f) Changing the data from the machine code to Unicode.

2. (4%) A computer has 1024MB (megabytes) of memory. How many bits are needed to address any single byte in memory?

3. (10%) Finish the following C function so that it will print out the following triangular pattern if the passed parameter is 5.

(note: every  represents a space)

				1					
			2	1	2				
		3	2	1	2	3			
	4	3	2	1	2	3	4		
5	4	3	2	1	2	3	4	5	

```
void printTriangularPattern(int num) {  
    for (int r=1; r<= num; r++) {  
        // begin to write your codes here  
  
    }  
}
```