國立彰化師範大學 98 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

一. 單選題(40%，每題 2 分)

1. _____ is a lossless compression format for bitmapped graphics.
   (1) JPEG (2) MPEG (3) PNG (4) SVG

2. _____ is a type of attack that threatens availability.
   (1)Modification (2) Snooping (3) Denial of Service (4) Masquerading

3. Nonrepudiation is achieved through _____.
   (1) encryption/decryption (2) hash (3) digital signature (4) DES

4. We can use _____ method when we have no prior knowledge about the search.
   (1) brute-force (2) binary search (3) heuristic search (4) none of the above.

5. A _____ is a computer that is being controlled remotely by an outsider and the owner of the computer is completely unaware its existence.
   (1) ghost (2) back door (3) zombie (4) Trojan horse.

6. _____ has a graphical user interface that help users to retrieve data.
   (1) A query language (2) Query by Example (QBE) (3) A report generator (4) no of the above

7. Different application programs on distributed computers can communicate with each other by sending XML files to the _____.
   (1) Internet telephony (2) Web Services (3) DNS (4) GPS

8. In the _____ method to synchronize the operation of CPU with I/O device, the I/O device informs the CPU when it is ready for data transfer.
   (1) programmed I/O (2) interrupt-driven I/O (3) isolated I/O (4) DMA

9. A _____ is a field that uniquely identifies each record in a file
   (1) primary key (2) session key (3) data key (4) secondary key

10. _____ is a program that facilitates the execution of other programs.
    (1) Hardware (2) An operating system (3) A queue (4) An application program

11. Which of the following is not one of the protocols in the transport layer?
    (1) TCP (2)UDP (3) SCTP (4) HTTP

12. If the ASCII code for E is 1000101, then the ASCII code for e is _____.
    (1) 1000110 (2) 1000111 (3) 0000110 (4) 1100101

13. The CPU is responsible for fetching instructions, one by one, from memory, storing them in the _____, interpreting them, and executing them.
    (1)memory (2) cache　(3) data register (4) instruction register

14. The _____ manager is responsible for archiving and backup.
    (1) file (2) process (3) memory (4) device

15. _____ is a popular object-oriented language.
    (1) FORTRAN (2) COBOL (3) C (4) C++

16. A process in the ready state goes to the running state when _____.
    (1) it gets access to the CPU (2) it enters memory (3) it requests I/O (4) it finishes running

17. Which physical topology uses a hub or switch?

　　(1) star (2) ring (3) bus (4) all of the above

18._____ is a protocol for e-mail service.

　　(1) SMTP (2) HTTP (3) TELNET (4) FTP

19.A _____ contains files necessary that allows users to boot and work with the Linux operating system without installing it.

　　(1) Live CD (2) Window XP (3) UNIX (4) BIOS

20.Which of the following is a vector graphics format?

　　(1)EPS (2) PDF (3) SVG (4) all of the above

二. 填充題（20%，每題 2 分)

The solution of the following problems can be found out from the following: queue, stack, process, virtual memory, algorithm, deadlock, kernel, bootstrap, starvation, bandwidth, job, Direct 3-D, OpenGL, CGI, XML.　Fill in the right answer for each problem.

(1) A _____　is last in, first out data structure.

(2) An _____　is a step-by-step method for solving a problem.

(3) A program in execution is called a _____.

(4) _____　is a situation in which a process is unable to execute due to unrestricted use of resources by other processes.

(5) The _____ is the heart of the UNIX system.

(6) _____ uses demand paging or demand segmentation technique to run a program that is not entirely in main memory.

(7) A _____ program loads operating system into main memory when a computer is powered on.

(8) _____ is the amount of digital data that can be transmitted over a communication medium.

(9) _____ is a widely implemented cross-platform API for 3D graphics.

(10) _____ is a technology that creates and handles dynamic document.

三. 問答題(40%)

1. Compute A – B where A, B are stored in two's complement format. (10%)

　　A=(11011101)$_2$ B=(00010100)$_2$

2. An expression tree has infix notation: a × (b−c)+d and postfix notation (a b c − × d +), draw the tree. (5%)

3. For the following function, compute the value of Fib(5). (5%)

```
public static int Fib(int n){
    if (n = =0 ) return    0;
    if (n = =1) return    1
    else return Fib(n−1)+Fib(n−2)+1;
}
```

4. A Linux user types two commands in a console window, but the system responds with the following message respectively. (10%)
   (a) command not found   (b) permission denied
   For each message, explain what it means and write down your solution.

5. Write down three popular scripting technologies (languages) for creating dynamic Web documents. Compare and contrast the three scripting technologies. (10%)