

# 慈濟大學 103 學年度 研究所碩士班招生考試命題紙

科目：計算機概論

共2頁

一、選擇題(單選一題4分，答錯不倒扣)

1. The von Neumann model defines a computer as four subsystems. Which is not one of the four subsystems? (a) memory (b) arithmetic logic unit (c) control unit (d) execution unit.
2. A bit pattern of length 8 is called \_\_\_\_ (a) byte (b) bye (c) book (d) word
3. Unicode uses \_\_\_\_ bits to represent a text symbol. (a) 8 (b) 16 (c) 32 (d) 64
4. Show the hexadecimal equivalent of the binary number 110011100010. (a) 0xCE2 (b) 0xCD3 (c) 0xCF1 (d) 0xC12
5. What is the decimal equivalent the binary number 1100101. (a)101 (b)103 (c)111 (d)91
6. Convert the decimal number 35 to binary number. (a) 100011 (b) 100001 (c) 110001 (d) 111001
7. Transform the fraction 0.875 to binary. (a) 0.111 (b) 0.1111 (c) 0.11111 (d) 0.1101
8. Interpret the following 32-bit floating-point number (represented by excess\_127)  
1 01111100 110011000000000000000000  
(a)  $2^{-3} \times 1.110011$  (b)  $-2^{-3} \times 1.110011$  (c)  $2^{-4} \times 1.110011$  (d)  $-2^{-4} \times 1.110011$
9. Add the two floating-point numbers:  
0 10000100 101100000000000000000000  
0 10000010 011000000000000000000000  
(a) 0 10000001 000011000000000000000000 (b) 0 10000100 000001000000000000000000  
(c) 0 10000101 000001000000000000000000 (d) 0 10000111 000001000000000000000000
10. What is the result by using the AND operator on bit patterns 10011000 and 00110101.  
(a) 10010000 (b) 10011101 (c) 00010000 (d) 00010001
11. What is the result by using the XOR operator on bit patterns 10011000 and 00110101.  
(a) 10101101 (b) 00010000 (c) 10111101 (d) 10111101
12. The performance of a hard disk is calculated by three types of times. Which is not?  
(a) seek time (b) rotational time (c) transfer time (d) plug-in time
13. Routers operate at the first \_\_\_\_ layers of the OSI model. (a) three (b) four (c) five (d) six
14. When we compare the TCP/IP model and the OSI model, IP layer is on the \_\_\_\_ layer of OSI model. (a) Application (b) Transport (c) Network (d) Session

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15. Which one is not a component of a computer operating system? (a) Memory management (b) Monitor management (c) Process management (d) File management.
16. Which one is not a state of a process? (a) Ready (b) Reading (c) Running (d) Waiting
17. A full binary tree is a rooted tree in which every node other than the leaves has two children. How many internal nodes are there in a full binary tree with 1024 leaves? (a)  $2^{1023}$  (b)  $2^{1024}$  (c) 1023 (d) 1024
18. Consider the following pseudocode.  
A = false;  
B = true;  
x = 1;  
if (A or B)  
begin  
    x = 0;  
end  
What is the value of x at the end of the pseudocode?  
(a) 0 (b) 1 (c) 2 (d) 3
19. Which of the following languages can be understood by computer? (a) symbolic language (b) machine language (c) high-level language (d) all of the above
20. There are four phases in system development. A. design B. testing C. analysis D. implementation. What is the correct order of these four phases?  
(a) ABCD (b) BCAD (c) CABD (d) DABC

二、問答題

21. (10分) Given a simple graph G, please write the pseudocode for Depth First Search start on a vertex v of G. (You should explain what data structure will be used.)
22. (10分) Please explain “deadlock” and “starvation” when resources can be used by more than one process.