

國立中正大學 104 學年度碩士班招生考試試題  
系所別：資訊管理學系醫療資訊管理 科目：計算機概論

第 1 節

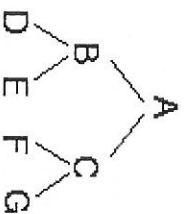
第 1 頁，共 2 頁

1. Which of the following is not contained in a CPU? (4%)  
A. Instruction register      B. Program counter      C. General-purpose register      D. Memory cell
2. What are the three of most important components of a computer system? (9%)  
\_\_\_\_\_
3. Which of the following bit patterns cannot be expressed in hexadecimal notation? (4%)  
A. 11111111      B. 1001      C. 110011      D. 100000000001
4. Please give a bit patterns that represents the value 5 in two's complement notation. (4%)  
\_\_\_\_\_
5. Please give a bit patterns that represents the value -5 in two's complement notation. (4%)  
\_\_\_\_\_
6. What is the result of the following addition problem (using two's complement notation)? (4%)  
$$\begin{array}{r} 00001111 \\ + 10101010 \\ \hline \end{array}$$
7. Represent the bit pattern 1011010010011111 in hexadecimal notation. (4%)
8. In which of the following locations is information most readily available for manipulation by the CPU? (4%)  
A. Cache memory      B. Main memory      C. Mass storage      D. General-purpose registers
9. Which of the following is not a means of performing multiple activities at the same time? (4%)  
A. Pipelining      B. Multiprogramming      C. Virtual memory      D. Multiple processors
10. A \_\_\_\_\_ is a set of instructions. (4%)  
In contrast, a \_\_\_\_\_ is the activity of executing those instructions. (4%)
11. Describe a scenario that leads to deadlock in a computer system. (8%)
12. Which of the following is not a means of connecting networks? (4%)  
A. Switch      B. Server      C. Router      D. Bridge
13. What are the differences between HTML and XML? (6%)
14. The insertion sort algorithm is an example of an algorithm in which of the following classes? (4%)  
A.  $\Theta(\log n)$       B.  $\Theta(n)$       C.  $\Theta(n \log n)$       D.  $\Theta(n^2)$
15. The binary search algorithm is an example of an algorithm in which of the following classes? (4%)  
A.  $\Theta(\log n)$       B.  $\Theta(n)$       C.  $\Theta(n \log n)$       D.  $\Theta(n^2)$
16. Suppose the binary search algorithm was being used to search for the entry Tom in the list (8%)  
Nathan, Oliver, Pat, Quincy, Rodger, Stan, Tom  
A. What would be the first entry in the list to be considered? \_\_\_\_\_  
B. What would be the second entry in the list to be considered? \_\_\_\_\_

17. What sequence of numbers would be printed if the following procedure were executed with the value of  $N=0$ ? (8%)

```
procedure xxx (N)
  while (N < 4) do
    (print the value of N;
     N  $\leftarrow$  N + 2;
     print the value of N
    )
```

18. What sequence of nodes from the tree



would be printed if the following recursive procedure were applied to it? (9%)

```
procedure printTree (Tree)
  if (Tree is not empty)
    then (print the root of Tree;
          apply the procedure printTree to the right subtree of Tree)
```