

# 元智大學 103 學年度研究所 碩士班 招生試題卷

系(所)別： 電機工程學系碩士班

組別： 不分組

科目： 計算機學論

用紙第 1 頁共 1 頁

●不可使用電子計算機

1. Please transfer the two following numbers into decimal:  
(a) 0FF7.8 (hexadecimal) (b) 0110.01 (binary) (10%)
2. Please write the sign-and-magnitude and two's complement values of 10100111.  
(10%)
3. A 64-bit computer has 1GB (Gigabytes) memory:
  - i. How many bytes is the memory? (5%)
  - ii. How many bits are needed to address any single word in memory? (5%)
4. Please list and describe the three stages of program execution in CPU. (10%)
5. What are the five layers of the TCP/IP protocol suite? Please also introduce their functions. (10%)
6. Please describe how the boot strapping process works. (10%)
7. What are the concept and the purpose of "virtual memory"? (10%)
8. Show the Excess\_127 (single precision) representation using the IEEE standard floating-point format for the decimal number -597.2 (15%)
9. What sequence of numbers would be printed by the following recursive procedure if we started it with N assigned the value 1? (15%)

Procedure DUMP(N)

Print the value of N;

If (N<3) then (apply the procedure DUMP to the value N+1);

Print the value of N+1.

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