

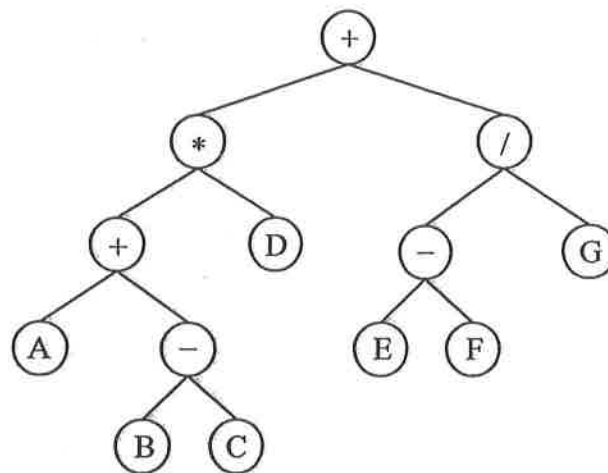
臺灣綜合大學系統 106 學年度學士班轉學生聯合招生考試試題

科目名稱	計算機概論	類組代碼	A06
		科目碼	A0602

※本項考試依簡章規定各考科均「不可以」使用計算機

本科試題共計 2 頁

- (12%) Please perform AND, OR, XOR operations on binary sets of 01010101 and 10101010.
- (16%) Convert the following number:
 - (4%) Convert $(315)_8$ to Binary.
 - (4%) Convert $(10101010)_2$ to decimal.
 - (4%) Convert $(11001101)_2$ to hexadecimal.
 - (4%) Convert $(CAB)_{16}$ to Octal.
- (12%) Given a binary tree as follows, show how to traverse it with different approaches.
 - (4%) Inorder
 - (4%) Preorder
 - (4%) Postorder



- (12%) What is the range of integers that an n bit pattern can represent with different form?
 - (4%) 1's complement
 - (4%) 2's complement
 - (4%) sign-magnitude
- (16%) Suppose there are 11 slots, please insert the keys, 204, 209, 186, 377, 210, 163, 159, 466, to the 11 slots by using the following hashing function: $h(x) = x \bmod 11$. Please show the final hashing table.
- (10%) What is the von Neumann architecture?

背面有題，請繼續作答。

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7. (7%) What is the 7 layer of OSI (Open System Interconnection Reference Model)?

8. (8%) Answer TRUE or FALSE for each statement.

A、(2%) $O(2^n) < O(n!)$

B、(2%) $O(n^2) < O(n \lg n)$

C、(2%) $n^2 + 10n \in O(n^2)$

D、(2%) $n \in o(5n)$

9. (7%) Consider the following C code. If $a = 15$ and $b = 24$, what is the output?

```
int f(int a, int b){
    while (b!= 0){
        int t = a % b;
        a = b;
        b = t;
    }
    return a;
}
```