1.Consider a C/C++ function calculating Fibonacci numbers (f(n)=f(n-1)+f(n-2), f(1)=1, f(0)=1)

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/* fibind indicate the ?th fibonacci number */
/* for example: fibonacci(2)=2; fibonacci(3)=3; fibonacci(4)=5;

unsigned long fibonacci(unsigned fibind)
{
    unsigned long result;
    if (fibind == 0 || fibind == 1)
        return ( A );
    else
        {
        result = fibonacci( B ) + fibonacci( C );
        cout<< result;
        }
    return(result);
}
```

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a) (15%)Fill the blank A,B,C, so that the function implement fabonacci series correctly. (the 0th and 1st fibonacci are both 1);

b) (10%) What is the way to pass arguments to fibonacci() function, call by value or call by reference? Compare this two mechanisms.

c) (20%) Instead of recursion, use only loop(for, while, or do while) to implement function fibonacci().

2.(15%) Explain what is Object-oriented programming language and its important features.

3. (20%) Suppose a computer has 1024 MB of memory, and each word is 4 bytes (word is addressable, not byte).

a) (5%) How many bits are needed to represent an address?

b) (8%)An array stores 100 standard pointers (each occupy memory by "words"), how much memory does this array occupy?

c) (7%)Another array stores a set of elements. Each element is 2 words. Suppose the array starts at address 600 (in decimal representation), what is the address of array's 7-th element in hexadecimal notation?

4. (20%) a)(5%) Change the decimal number 57 to binary, octal, and hexadecimal representations.

b)(5%) if the result of ((10111011) XOR (00101101)) is in 2's complement format, what's the decimal representation of that result?

c)(10%) Use 8 bit 2's complement format to represent: (i) 20; (ii)-32; (iii)((20 -32)*4)