1. (5%) 請說明 BIOS 晶片的功能及特性。

2. (12%) CPU 內部較重要的暫存器有哪些？其主要功能爲何？

3. (5%) Can a correct Time class definition include both of the following constructors? If
not, explain why not.
   Time(int h=0, int m=0, int s=0);
   Time();

4. (15%) 回答下列有關 C 或 C++ 之問題，答錯每題倒扣三分。
   (1) (True/False) A derived class is often called a subclass because it represents a subset of its
       base class.
   (2) (True/False) A pointer that is declared to be void can not be dereferenced.
   (3) (True/False) A const member function may be overloaded with a non-const
       version.
   (4) (True/False) Not providing an overloaded assignment operator and a copy
       constructor for a class when objects of that class contain pointers to dynamically
       allocated storage is a logic error.
   (5) (True/False) The default case is required in the switch selection structure.

5. (13%) 主機板上之晶片組 (Chipset) 的功能爲何？包含哪兩顆晶片？其功能爲何？

6. (15%) 請分析 Linux 和 Windows 此兩種作業系統的優缺點。

7. (10%) 請將下列程式之輸出結果寫出（用框框將你自己輸入之字串框起來以便區隔出螢幕所顯示之輸出）。
   ```c
   void mystery1 (char *, const char *);
   int main ()
   {
       char string1[80], string2[80];
       printf("Enter two strings: ");
       scanf("%s%s", string1, string2);
       mystery1(string1, string2);
       printf("%s", string1);
       return 0;
   }
   void mystery1 (char *s1, const char *s2)
   {
       while (*s1 != "0")
           ++s1;
       for (; *s1 = *s2; s1++, s2++)
           ;
   }
   ```
8. (25%) Find the error(s) in each of the following and explain how to correct it:

(a) class Example {
    public:
    Example ( int y = 10 ) { data = y; }
    int getIncrementedData ( ) const { return ++data; }
    static int getCount( )
    {
        cout << "Data is " << data << endl;
        return count;
    }
    private:
    int data;
    static int count;
};

(b) char *string;
    string = new char[20];
    free ( string );