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？其主要功能為何？

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%) 回答下述有關 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) 的功能為何？包含哪兩顆晶片？其功能為何？

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)。

```
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++)
      ;
}
```

參考用

注意：背面有試題

8.　(25%) Find the error(s) in each of the following and explain how to correct it:

(a)
```cpp
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)
```cpp
char *string;
string = new char[20];
free ( string );
```