※ 考生請注意：本試題不可使用計算機。 請於答案卷(卡)作答，於本試題紙上作答者，不予計分。

一、單選題（20 分，每題 2 分）

1. Two categories of software are (a) operating system and system software (b) system software and utility programs (c) utility programs and operating systems (d) system software and application software.

2. To listen to an audio file on a computer, a user needs special software called a(n) (a) reader (b) broadcaster (c) player (d) browser.

3. The high-speed storage locations contained in a processor are caller (a) registers (b) indices (c) capacitors (d) switchers.

4. One gigahertz (GHz) equals how many ticks of the system clock per second. (a) one thousand (b) one million (c) one billion (d) one trillion.

5. The most common type of volatile memory is (a) ROM (b) Flash memory (c) CMOS (d) RAM.

6. A symbol on the screen, usually a blinking vertical bar, that indicates where the next character typed will display is called the (a) mouse (b) cursor (c) keystroke (d) index.

7. A(n) ____ is made of aluminum, glass, or ceramic and is coated with an alloy material that allows items to be recorded magnetically on its surface. (a) sector (b) read/write head (c) vector (d) platter.

8. In a(n) ____, the programmer writes instructions that tell the computer what to accomplish and how to do it. (a) 1GL (b) 2GL (c) 3GL (d) 4GL.

9. An advantage of an interpreter is that (a) when it finds errors, it displays feedback immediately (b) interpreted programs run faster than compiled programs (c) an interpreter produces an object program (d) all of the above.

10. In ____ design, a programmer typically begins with a general design and moves toward a more detailed design. (a) routine (b) structured (c) decomposed (d) module-based.

二、複選題（30 分，每題 5 分）

1. Popular application software includes ____ software. (a) word processing (b) spreadsheet (c) BIOS (d) presentation graphics.

2. Which of the following are peripherals? (a) CPUs (b) modems (c) keyboards (d) scanners.

3. Impact printers can handle ____. (a) dusty environments (b) extreme temperatures (c) the use of noncontinuous paper (d) vibrations.

4. To prevent the loss of items stored on a hard disk, preventive maintenance should be performed regularly, such as ____. (a) defragmenting (b) removing contaminants from the hard disk platter (c) scanning the disk for errors (d) rotating the hard disk platters.

5. Malware includes ____. (a) anti-spyware (b) worms (c) viruses (d) Trojan horses.

6. In an object-oriented programming language, an object is an item that can contain ____. (a) data (b) procedures that manipulate data (c) procedures that read data (d) style sheets.

系所組別：工資管系、交管系

考試科目：計算機概論　　　　　　　　　　　　　考試日期：0713，節次：4

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三、簡答題 (50 分)

1. **(5%)** 請判斷以下 for 迴圈結束後，array 陣列的內容為何，並做簡短的說明。

```
1.  char array[] = {'a','b','c','d','e'};
2.  const int size = 5;
3.  for (int i = 0; i < size; i++) {
4.      array[i] += 2;
5.  }
```

2. **(15%)** 如下 C++程式片段所示，假設變數 a, b, c 分別存放在記憶體位置 5000, 6000, 7000，請判斷 b, c, *c, **c, &*c 的值分別為何，並做簡短的說明。

```
1.  int a = 35;      // a's memory address = 5000
2.  int*b = &a;      // b's memory address = 6000
3.  int**c = &b;     // c's memory address = 7000
```

3. **(5%)** 請判斷以下 C++程式的第 6 行執行過後，全域變數 a 的值為何，並做簡短的說明。

```
1.  int a = 2;
2.  int compute(int a) {
3.      return a++*a;
4.  }
5.  int main() {
6.      a += compute(a);
7.      return 0;
8.  }
```

4. **(5%)** 請判斷以下 C++程式碼在第 8 行在銀幕上輸出的數字為何，並做簡短的說明。

```
1.  int a = 2, b = 10;
2.  switch (a) {
3.      case 1: b--;
4.      case 2: ++b;
5.      case 3: --b;
6.      default: b+2;
7.  }
8.  cout << b;
```

5. **(5%)** 下列程式碼中 average 會等於 0 而不是 0.8，Why? 該如何修正?

```
1.   int sum = 80;
2.   int count = 100;
3.   float average = sum / count;
```

6. **(15%)** 所謂的迴文(palindrome)是指一個字串，不管從前面念還是後面念回來都是一樣。例如 "abcba" 即是一個迴文。請利用你熟悉的語法寫一遞迴函式來判定一個字串是否為迴文。