科目：程式設計　適用：資工系二

編號：311

考生注意：
1.依次序作答，只要標明題號，不必抄題。
2.答案必須寫在答案卷上，否則不予計分。
3.限用藍、黑色筆作答；試題須隨卷繳回。

本試題
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第 1 頁

一、是非題（每題5%）

1. The subscript (index) of an array begins from 0 in C language, but it begins from 1 in C++ language.

2. The syntax of the following statement is valid in C++ language.
   const char friend[10] = "Tom Hank";

二、程式題（每題10%）

1. What will the following code display?

```cpp
#include <iostream>
int main()
{
        const int MAX = 20;
        int i = 1, sum = 0;
loop:   sum += i;       // Add current value of i to sum
        if (++i <= MAX)
                goto loop;      // Go back to loop
        std::cout << std::endl << "sum = " << sum
                << std::endl << "i = " << i
                << std::endl;
        return 0;
}
```

2. What value will the following code display?

```cpp
#include <iostream>
using std::cout;
using std::endl;

int main()
{
        int value[10] = { 1, 3, 5, 7, 9};
        int i = 0;

        for (i=0; i<10; i += 2)
                value[i] = i;
        cout << value[2] << "\t" << value[3] << endl;
}
```

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3. What will the following code output?

```cpp
#include <iostream>

int main()
{
    for (int i = 1; i < 6; i++)
    {
        if (i==3)
            break;
        std::cout << i << std::endl;
    }
}
```

4. Determine whether the following code is correct or not. If it is correct, predict its output. If it is incorrect, point out the mistake(s).

```cpp
#include <iostream>
using std::cout;
using std::endl;
void swap(int, int);

int main()
{
    int a=10, b=20;
    swap(a, b);
    cout << a << '\t' << b << endl;
}

void swap(int x, int y)
{
    int temp;
    temp = x;
    x = y;
    y = temp;
    cout << x << '\t' << y << endl;
}
```

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5. What will the following code display?

```cpp
#include <iostream>
int main() // bitwise operators.
{
    unsigned s = 555;
    int i = (s >> 4) & ~(~0 << 3);
    std::cout << i;
}
```

6. Determine whether the following code is correct or not. If it is correct, predict its output. If it is incorrect, point out the mistake(s).

```cpp
#include <iostream>
using std::cout;
using std::endl;
void cycle(int*, int*, int*);

int main()
{
    int a=10, b=20, c=30;
    cycle(&a, &b, &c);
    cout << a << "\t" << b << "\t" << c << endl;
}

void cycle(int* x, int* y, int* z)
{
    int temp;
    temp = *x;
    *x = *y;
    *y = *z;
    *z = temp;
    cout << *x << "\t" << *y << "\t" << *z << endl;
}
```

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7. Determine whether the following code is correct or not. If it is correct, predict its output. If it is incorrect, point out the mistake(s).

```cpp
#include <iostream>
using std::cout;
using std::endl;

void eat(char* str)
{    int i = 0, j = 0;
     while ((*(str + i) = *(str + j++)) != '\0')
            if (*(str + i) != ' ')
                 i++;

     return;
}

int main(void)
{    char message[] = "TODAY IS WEDNESDAY.";
     eat(message);
     cout << message << endl;
}
```

8. Determine whether the following code is correct or not. If it is correct, predict its output. If it is incorrect, point out the mistake(s).

```cpp
#include <iostream>
using std::cout;
using std::endl;

// This function returns a pointer to an integer

int *max(int a, int b)
{    return (a>b) ? &a : &b;   }

int main()
{    cout << *max(3,5) << endl;
     cout << *max(10,1) << endl;
}
```

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9. Determine whether the following code is correct or not. If it is correct, predict its output. If it is incorrect, point out the mistake(s).

```cpp
#include <iostream>
using std::cout;
using std::endl;

int main()
{
    double array[] = {1.0, 1.5, 2.0, 2.5, 3.0};
    char *stars[] = { "Catherine Zeta-Jones",
                      "Angelina Jolie",
                      "Nicolas Cage",
                      "Sean Connery",
                      "Arnold Schwarzenegger"
                    };

    cout << sizeof array << "\t" << sizeof array[0] << endl;
    cout << sizeof stars << "\t" << sizeof stars[0] << endl;
}
```