**C++ Programming Assignment 3 (Part 2)**

**Name： Student ID:**

**Question 1 : Multiple Choice**

1. **Which of the following is the correct syntax to print the message in C++ language?**
2. cout <<"Hello world!";
3. Cout << Hello world! ;
4. Out <<"Hello world!;
5. None of the above

**Answer:**

1. **Which of the following is the correct identifier?**

a. $var\_name

b. VAR\_123

c. varname@

d. None of the above

**Answer:**

1. **Which of the following comment syntax is correct to create a single-line comment in the C++ program?**
2. //Comment
3. /Comment/
4. Comment//
5. None of the above

**Answer:**

1. **If we stored five elements or data items in an array, what will be the index address or the index number of the array's last data item?**
2. 3
3. 5
4. 4
5. 88

**Answer:**

1. **What is the result of the following code?**

int x=0;

switch(x)

{

case 1: cout<<"One";

case 0: cout<<"Zero";

case 2: cout<<"Hello World";

}

a. One  
b. Zero  
c. Hello World  
d. ZeroHello World

**Answer:**

1. **What is the final value of x when the code**

**int x; for(x=0; x<10; x++) {} is run?**

a. 10  
b. 9  
c. 0  
d. 1

**Answer:**

1. **What value will be output by below program?**

Text, letter

Description automatically generated

a. 2  
b. 3  
c. Won't run

d. address of a

**Answer:**

1. **Which of the following is the proper declaration of a pointer?**   
   a. int x;  
   b. int &x;  
   c. ptr x;  
   d. int \*x;

**Answer:**

1. **Which of the following gives the memory address of integer variable a?**

a. \*a;  
b. a;  
c. &a;  
d. address(a);

**Answer:**

1. **Which of the following gives the memory address of a pointer ptr?**

a. ptr;  
b. \*ptr;  
c. &ptr;  
d. address(ptr);

**Answer:**

Question 2: Operator Precedence

a) What is the value of variable *n* after executing the following C++ statements?

int n;

n = 8+3.5 \*(int)7.5/1.5 -3\*2.6;

**Answer:**

b) What is the value of variable *n* after executing the following C++ statements?

int a = 8, b = 5, c = 3;

int n;

n = a / b \* (c % 2 + 6.5);

**Answer:**

Question 3: C++ operators

a) What is the value of variable *n* after following C++ statements?

int n = 5, a = 4, b = 0, c = 8;

if (b<=6 && c>4 || ++a==5)

n ++;

if (a!=4 || b>5 || c<=9)

n += a++;

if (c<=2 || a>=5 && b--==0)

n \*= a++;

**Answer:**

b) What is the value of variable *n* after following C++ statements?

int n = 5, a = -1, b = 3;

switch((n--)%4){

case 0: n++;

break;

case 1: n \*= a++;

case 2: n +=--b;

case 3: --n;

default:n++;

}

**Answer:**

c) Write a program to get three numbers from users, for integer variables *a*, *b* and *c*. If *a* is not zero, find out whether *a* is the common divisor of *b* and *c*.

// Write your code here

**Answer:**

// Assume that a,b,c are already defined and valued

Question 4: if, switch, nested if

a) Rewrite the following lines of code using a switch statement (and with no if statement). Assume a student’s score is a non-negative integer from 0 to 100.

int score;

cout << "Enter score:" << endl;

cin >> score;

if(score >= 90)

cout << "Grade A";

else if(score >= 80)

cout << "Grade B";

else if(score >= 70)

cout << "Grade C";

else if(score >= 60)

cout << "Grade D";

else cout << "Fail the exam";

// add your code here

Question 5: Loops

a) What is the output of the following C++ statements?

int n = 45;

int m = 32;

while(m > 0){

cout << n / m;

n %= m;

m /= 2;

}

**Answer:**

b) What is the output of the following C++ statements?

int n = 0;

for(int m = 0; m < 10; m++){

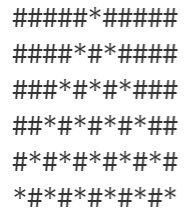
n += m++;

}

cout << n << endl;

**Answer:**

c) Fill in the blanks in code snippets so that it prints the following pattern.



int main()

{

int row, x, y, nrows = 6;

for ( ; ; )

{

for (x = ; x <= ; x++)

cout << "#";

for (y = ; y <= ; y++){

if ( )

cout << ;

else

cout << ;

}

for (x = ; x <= ; x++)

cout << "#";

cout << endl;

}

return 0;

}

d) Complete the code to calculate a series.

Given a number ‘n’, calculate the value of the series s = 1-(1⁄2)+(1⁄4)-(1⁄8)+ .... up to the n’th term. For example, if n=0, then s=1, if n=1, s= 1-(1/2)). The result is 0 if the value of n is negative. You may use the pow function, see the usage below:

Tips: double c = pow(a, b); // c= a^b, a is base and b is exponential

#include <iostream>

using namespace std;

void main() {

int n;

cout << “Calculate the power series for: “;

cin >> n;

double result = 0;

// add your code here

//

cout << "Result is: " << result << endl;

}

Question 6: Arrays

a) What is the output of the following program?

#include <iostream>

using namespace std;

int main() {

int a[6] = {2, 3, 4, 5, 6, 7};

for (int i = 1; i <=3; i++)

a[i] = i;

for (i = 0; i < 6; i++)

cout << a[i] << " ";

cout << endl;

return 0;

}

**Answer:**

**b) Given two arrays A and B. The 2D array A has eight elements, copy them to array B according to rows. For example, first copy the first row numbers in A to B, then second row numbers in A to B, and so on. You can use either for-loops or while-loops, but you must use a nested loop to complete this program.**

**The output of this program is:**

The content of B is

6, 0, 3, 7, 2, 1, 5, 4

#include <iostream>

using namespace std;

void main() {

int A[2][4] = {{6, 0, 3, 7},{2, 1, 5, 4}};

int B[8];

// add your code here

cout << "The content of B is" << endl;

for (int y=0; y<8; y++) {

cout << B[y] << " ";

}

cout << endl;

}