**Lab-6 Functions**

**QUESTION#1**

/\*Task # 1 Create a function called Largernum() that receives two integer

numbers as arguments and returns the Larger number out of them.\*/

#include<iostream>

using namespace std;

int largernum(int a,int b){

if(a>b){

return a;

}

else

return b;

}

int main(){

int num1,num2;

cout<<"enter two numbers:";

cin>>num1>>num2;

cout<<"larger number is="<<largernum(num1,num2);

return 0;

}

**QUESTION#2**

/\*Task # 2 Write a function called zeroSmaller() that takes two integer arguments by reference and then sets the smaller of the two

numbers to 0. Write a main function to exercise this function.\*/

#include<iostream>

using namespace std;

void zerosmaller(int& a,int& b){

if(a<b){

a=0;

}

else

b=0;

}

int main(){

int num1,num2;

cout<<"Enter two numbers:\n";

cin>>num1>>num2;

cout<<"first number ="<<num1<<" "<<"second number ="<<num2<<endl;

zerosmaller(num1,num2);

cout<<"first number ="<<num1<<" "<<"second number ="<<num2;

return 0;

}

**QUESTION#3**

/\*Task#3 Write a function called swap() that interchanges two int values

passed to it by the calling program.\*/

#include<iostream>

using namespace std;

void swap(int& x,int& y){

int temp=x;

x=y;

y=temp;

}

int main(){

int num1,num2;

cout<<"Enter two numbers:\n";

cin>>num1>>num2;

cout<<"Numbers before swaping:";

cout<<"1st number ="<<num1<<" "<<"2nd number ="<<num2<<endl;

cout<<"Numbers after swaping:";

swap(num1,num2);

cout<<"1st number ="<<num1<<" "<<"2nd number ="<<num2;

return 0;

}

**QUESTION#4**

/\*Task # 4 Define two functions to print the maximum and the minimum number

respectively among three numbers entered by user.\*/

#include<iostream>

using namespace std;

int max(int a,int b,int c){

int maxno=a;

if(b>maxno)

maxno=b;

if(c>maxno)

maxno=c;

return maxno;

}

int min(int a,int b,int c){

int minno=a;

if(b<minno)

minno=b;

if(c>minno)

minno=c;

return minno;

}

int main(){

int num1,num2,num3;

cout<<"Enter 1st number:";

cin>>num1;

cout<<"Enter 2nd number:";

cin>>num2;

cout<<"Enter 3rd number:";

cin>>num3;

cout<<"Maxinum number is:"<<max(num1,num2,num3)<<endl;

cout<<"Mininum number is:"<<min(num1,num2,num3)<<endl;

return 0;

}

**QUESTION#5**

/\*Task # 5 C++ write a function that takes numbers as arguments and Swap two numbers .

Use call by reference.\*/

#include<iostream>

using namespace std;

void swapcall\_ref(int \*a,int \*b){

int temp=\*a;

\*a=\*b;

\*b=temp;

}

int main(){

int num1;

int num2;

cout<<"Enter two numbers:\n";

cin>>num1>>num2;

cout<<"Num1="<<num1<<'\t'<<"num2="<<num2<<endl;

cout<<"Numbers after swaping:\n";

swapcall\_ref(&num1,&num2);

cout<<"Num1="<<num1<<'\t'<<"num2="<<num2<<endl;

return 0;

}

**QUESTION#6**

/\*Task # 6 Write a program that calculates 6^5.

Declare your own function to do this.\*/

#include<iostream>

using namespace std;

int mult;

int power(int num,int pow){

int multi=1;

while((pow)>=1){

multi\*=num;

pow--;}

return multi;

}

int main(){

int number,pow;

cout<<"Enter number:";

cin>>number;

cout<<"Enter pow:";

cin>>pow;

cout<<"Calculate power raise to a number:"<<power(number,pow);

}

**QUESTION#7**

/\*Task # 7 Write a function that takes a user defined structure named

students having two members of your own choice as an argument, the

function then prints data of that structure. Write the main program to

access the function.\*/

#include<iostream>

using namespace std;

struct Students{

int roll\_no;

string name;

};

Students myfunction(int a,string b){

Students info={a,b};

return info;

}

int main(){

int x=51;

string y="Tayyaba";

Students s1=myfunction(x,y);

cout<<"Data of student:\n"<<s1.roll\_no<<endl<<s1.name<<endl;

Students s2=myfunction(15,"shazma");

cout<<"Data of student:\n"<<s2.roll\_no<<endl<<s2.name;

return 0;

}

**QUESTION#8**

* **What is wrong with the following C++ function?**
  + int square(int x);
  + { return x\*x; }

**ANS**

First line of definition does not take semicolon.

* **Write the output of the following program :**

#include <iostream>

using namespace std;

void X(int &A, int &B)

{

A = A + B;

B = A - B;

A = A - B;

}

int main()

{

int a = 4, b = 18;

X(a,b);

cout << a << ", " << b;

return 0;

}

**OUTPUT**

a=18,b=4

* **What values are printed out by the following C++ program?**

#include <iostream>

int f(int x) {

return x + 2;

}

int main(void) {

int x = 5;

cout<< f(x+2)<<”, ” <<f(f(x+2)));

return 0;

}

**OUTPUT**

9,11

* **Write the output of the following program:**

#include <iostream>

using namespace std;

void Execute(int &B, int C = 100)

{

int temp = B + C;

B += temp;

if (C == 100)

cout << temp << " " << B << " " << C << endl;

}

int main()

{

int M = 90, N = 10;

Execute(M);

cout << M << " " << N << endl;

Execute(M, N);

cout << M << " " << N << endl;

return 0;

}

**OUTPUT**

190 280 100

280 10

570 10

* **Give the output of the following program**

#include <iostream>

using namespace std;

int global = 10;

void func(int &x, int y)

{

x = x - y;

y = x \* 10;

cout << x << ", " << y << '\n';

}

int main()

{

int global = 7;

func (::global, global);

cout << global << ", " << ::global << '\n';

func(global, ::global);

cout << global << ", " << ::global << '\n';

return 0;

}

**OUTPUT**

3,30

7,3

4,40

4,3

* **Write the output of the following program :**

#include <iostream>

using namespace std;

static int i = 100;

void abc()

{

static int i = 8;

cout << "first = " << i++ << endl;

}

int main()

{

static int i = 2;

abc();

cout << "second = " << i << endl;

abc();

return 0;

}

**OUTPUT**

First =8

Second=2

First=9

#include <iostream>

using namespace std;

int func(int &x, int y = 10)

{

if (x % y == 0)

return ++x;

else

return y--;

}

int main()

{

int p = 20, q = 23;

q = func(p, q);

cout << p << " " << " " << q << endl;

p = func (q);

cout << p << " " << " " << q << endl;

q = func (p);

cout << p << " " << " " << q << endl;

return 0;

}

**OUTPUT**

20 23

10 23

11 11

**What is the output ?**

**#include<iostream>**

**int main() {**

**cout<<”\n”<<”,”<< main();**

**return 0;**

**}**

**OUTPUT**

Error cout was not declard

* **Run the following program through the compiler to see the**
* **error messages that gcc (or cc) produces for semicolon errors.**

int square (int x);

{ return x\*x; }

int main(void) {

int a, b, c;

c = 0

b = 0;

if (a > b)

c = 0

else

b = 0;

return 0;

}

**MCQS**

**If return type for a function is not specified, it defaults to which of the following return types?**

* int
* void
* double
* char

**Choose the correct option:**

**1. A function cannot be defined inside another function**

**2. Functions cannot return more than one value at a time**

* Both 1 and 2 are true
* Both 1 and 2 are false
* 1 is true and 2 is false
* 1 is false and 2 is true

3.

* It prints garbage values infinitely
* Runs infinitely without printing anything
* Error: main() cannot be called inside printf()
* No Error and print nothing

4.**Which of the following is NOT an example of an iterative statement in C++?**

* Struct
* For
* While
* Do - while

5.**Which of the following best describes iteration in C++?**

* A function that calls itself
* Code repeating indefinitely
* Code repeating until a condition is true
* A function that calls another function