**COMP 215 OOP with C++**

**CAT1/Assignment**

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**Cs/m/0466/01/21**

1. **Write a program in C++ that passes two arrays A and B to a function sum() such that the function adds the corresponding elements of both the arrays and displays them (3 Marks)**

#include <iostream>

using namespace std;

void sum(int arr1[], int arr2[]){

int temp[5];

for(int i=0; i<5; i++){

temp[i] = arr1[i]+arr2[i];

cout<<temp[i]<<endl;

}

}

int main(){

int a[5] = {10, 20, 30, 40 ,50};

int b[5] = {1, 2, 3, 4, 5};

sum(a, b);

return 0;

}

1. **Design a C++ program that will accept user data input and store them in an array**

**(3 Marks)**

#include <iostream>

#include<conio.h>

using namespace std;

int **main**() {

int array[12];

int i;

cout << "Read User Input into Array In C++ Example Program\n";

for (i = 0; i < 12; i++) {

cout << "Enter Value for Position " << i << " : ";

cin >> array[i];

}

cout << "\n User Input Values\n";

for (i = 0; i < 12; i++) {

cout << "Position : " << i << " , Array Value : " << array[i] << " \n";

}

getch();

return 0;

}

1. **With an appropriate C++ program code, briefly explain the concept of function overloading (3 Marks)**

Function overloading is a feature of object oriented programming where two or more functions can have the same name but different parameters. In function overloading function name should be the same and the arguments should be different..

#include <iostream>

using namespace std;

void print(int i) {

cout << " Here is int " << i << endl;

}

void print(double f) {

cout << " Here is float " << f << endl;

}

void print(char const \*c) {

cout << " Here is char\* " << c << endl;

}

int main() {

print(10);

print(10.10);

print("ten");

return 0;

}

1. **Write a simple program in C++ to find the factorial of a number using a recursive function** **(3 Marks)**

#include<iostream>

Using namespace std

Int main(){

Int factorial(int n);

Int n;

Cout <<”enter a positive integer:”;

Cinn>>n;

Cout<<”Factorial of”<<n<<”=”<<factorial(n);

Return 0;

}

Int factoria(int n){

If (n>0)

Return n\* factorial(n-1);

Else

Return 1;

}

1. Construct a well labeled flowchart to depict the logic of program execution in question(), above **(4 marks)**

Enter n

Set factorial =1

Is n = 1

Print factorial

N= n+1

Factorial = factorial\*n

1. Write a program in C++ to demonstrate how a programmer can achieve Inheritance access control **(3 Marks)**

#include <bits/stdc++.h>

using namespace std;

// Base class

class Parent

{

public:

int id\_p;

};

class Child : public Parent

{

public:

int id\_c;

};

int main()

{

Child obj1;

obj1.id\_c = 7;

obj1.id\_p = 91;

cout << "Child id is: " << obj1.id\_c << '\n';

cout << "Parent id is: " << obj1.id\_p << '\n';

return 0;

}

1. **Write a program in C++ to demonstrate how to get the length of a string using Strlen() function (4 Marks)**

#include <iostream>

#include <cstring>

using namespace std; i

int main() {

char welcome[] = "Welcome to Kabarak";

string cout << strlen(welcome);

return 0;

}

1. **Design a program in C++ to demonstrate the implementation of WHILE ….LOOP control structure (4 Marks**

#include <iostream>

using namespace std;

int main() {

int i = 1;

while (i <= 5) {

cout << i << " ";

++i;

}

return 0;

}

1. **Construct a well labeled flowchart to depict the logic of program execution in question(c), above** **(3 Marks)**

i=i+1

While i<=5

**false**

**true**