**Lab-1 Basics of C++ Programming**

**1 ) /\* Write a program to calculate weight for the given mass. Make acceleration due to gravity g=9.8 as default argument\*/**

#include<iostream>

using namespace std;

class weight

{

float w;

public:

void process(float m, float g=9.8) //here g = 9.8 is used as default argument

{

w= m\*g;

cout<<"weight="<<w;

}

};

int main()

{

weight ob;

ob.process(10,1.6);

return 0;

}

**2) Write a program to overload a function that receives float, character and int type of data.**

#include <iostream>

using namespace std;

void print(int i)

{

cout << " \nThis is int " << i << endl;

}

void print(double f)

{

cout << " \nThis is float " << f << endl;

}

void print(char c)

{

cout << " \nThis is character " << c << endl;

}

int main()

{

print(10);

print(10.10);

print('t');

return 0;

}

**3) Write a program to demonstrate the use of inline function.**

#include <iostream>

using namespace std;

inline int cube(int s)

{

return s\*s\*s;

}

int main()

{

cout << "The cube of 3 is: " << cube(3) << "\n";

return 0;

}

**4) Write a program to add two numbers and display the result using the concept of class and object**

#include<iostream>

using namespace std;

class addition

{

private:

int a, b, sum;

public:

void getdata();

void processing();

void display();

};

void addition::getdata()

{

cout<<"\n Enter two numbers";

cin>>a>>b;

}

void addition::display()

{

cout<<"\n Sum of two numbers is ="<<sum;

}

void addition:: processing()

{

sum=a+b;

}

int main()

{

addition a;

a.getdata();

a.processing();

a.display();

return 0;

}

**5) Write a program showing the concept of *endl* and *setw* manipulators.**

#include<iostream>

#include <iomanip>

using namespace std;

int main()

{

int sum=123456;

cout << "setw(0)="<<"\n"<<setw(0)<<sum << endl;

cout << "setw(20)="<<"\n"<<setw(20)<<sum << endl;

}

**6) Write a program showing the concept of reference variable.**

#include<iostream>

using namespace std;

int main()

{

int m=5;

int &n=m;

cout<<"m="<<m<<" n="<<n<<endl;

n++;

//n is reference of m so m and n have now same value

cout<<"m="<<m<<" n="<<n<<endl;

}

**7) Write a program to swap two integer number using call pass by reference**

#include<iostream>

using namespace std;

void swap ( int &a, int &b)

{ int t = a;

a = b;

b = t;

}

int main()

{ int m = 10;

int n = 20;

cout<<"\nBefore swap "<<"m= "<<m<<"n= "<<n;

swap(m, n);

cout<<"\nAfter swap "<<"m= "<<m<<"n= "<<n;

return 0;

}

**8) Write a program to find largest of two numbers using the concept of nesting of member function.**

#include<iostream>

using namespace std;

class set

{

int m,n;

public:

void input(void);

void display(void);

int largest(void);

};

int set :: largest(void)

{

if(m >= n)

return(m);

else

return(n);

}

void set :: input(void)

{

cout << "Input value of m and n"<<"\n";

cin >> m>>n;

}

void set :: display(void)

{

cout << "largest value=" << largest() <<"\n";

}

int main()

{

set A;

A.input();

A.display();

return 0;

}