Q1. Define a class Complex to represent a complex number. Declare instance member variables to store real and imaginary part of a complex number, also define instance member functions to set values of complex number and print values of complex number.

#include <iostream>

using namespace std;

class Complex {

private:

int r, i;

public:

void setValue(void) {

cout << "Enter real part : ";

cin >> r;

cout << "Enter imaginary part : ";

cin >> i;

}

void disp(void) {

cout << "\nComplex number : " << r << " + " << i << "i";

}

};

int main() {

Complex c;

c.setValue();

c.disp();

}

Q2. Define a class Time to represent Time (like 3 hr 45 min 20 sec). Declare appropriate number of instance member variables and also define instance member functions to set values for time and display values of time.

#include <iostream>

using namespace std;

class Time {

private:

int hr, min, sec;

public:

void setValue(void) {

cout << "Enter Hour : ";

cin >> hr;

cout << "Enter Minute : ";

cin >> min;

cout << "Enter Second : ";

cin >> sec;

}

void disp(void) {

cout << "\nTime : " << hr << " hr " << min << " min " << sec << " sec";

}

};

int main() {

Time t;

t.setValue();

t.disp();

}

Q3. Define a class Factorial and define an instance member function to find the Factorial of a number using class.

#include <iostream>

using namespace std;

class Factorial {

private:

int num, ans;

public:

void setData(void) {

cout << "Enter number : ";

cin >> num;

}

void fact(void) {

ans = num;

while (--num) {

ans = ans \* (num);

}

}

void disp(void) {

cout << "Factorial : " << ans;

}

};

int main() {

Factorial f;

f.setData();

f.fact();

f.disp();

}

Q4. Define a class LargestNumber and define an instance member function to find the Largest of three Numbers using the class.

#include <iostream>

using namespace std;

class LargestNumber {

private:

public:

void Largest(int \*a, int \*b, int \*c) {

( \*a > \*b) ? (\*a > \*c) ? cout << \*a << " is greater" : cout << \*c << " is greater" :

(\*b > \*c) ? cout << \*b << " is greater" : cout << \*c << " is greater";

}

};

int main() {

LargestNumber L;

int a, b, c;

cout << "Enter three numbers : ";

cin >> a >> b >> c;

L.Largest(&a, &b, &c);

}

Q5. Define a class ReverseNumber and define an instance member function to find Reverse of a Number using class.

#include <iostream>

using namespace std;

class ReverseNumber {

private:

int num, rev = 0;

public:

void Reverse(void) {

cout << "Enter number : ";

cin >> num;

do {

rev = rev \* 10;

rev = rev + (num % 10);

} while (num /= 10);

cout << "Revers of a number : " << rev;

}

};

int main() {

ReverseNumber r;

r.Reverse();

}

Q6. Define a class Square to find the square of a number and write a C++ program to Count number of times a function is called.

#include <iostream>

using namespace std;

int count = 0;

class Square {

private:

int num;

public:

void square(void) {

cout << "Enter number : ";

cin >> num;

num = num \* num;

cout << endl << "Square : " << num << endl << endl;

count = count + 1;

}

};

int main() {

Square s;

s.square();

s.square();

s.square();

cout << endl << endl << "Number of times function called : " << count;

}

Q7. Define a class Greatest and define instance member function to find Largest among 3 numbers using classes.

#include <iostream>

using namespace std;

class Greatest {

private:

int a = 5, b = 1, c = 10;

public:

void largest(void) {

if (a > b)

if (a > c)

cout << a << " is greater";

else

cout << c << " is greater";

else if (b > c)

cout << b << " is greater";

else

cout << c << " is greater";

}

};

int main() {

Greatest g;

g.largest();

}

Q8. Define a class Rectangle and define an instance member function to find the area of the rectangle.

#include <iostream>

using namespace std;

class Rectangle {

private:

float w, l;

public:

void area(void) {

cout << "Enter width and length : ";

cin >> w >> l;

float area = w \* l;

cout << "Area : " << area;

}

};

int main() {

Rectangle r;

r.area();

}

Q9. Define a class Circle and define an instance member function to find the area of the circle.

#include <iostream>

using namespace std;

class Circle {

private:

float r;

public:

void area(void) {

cout << "Enter radius : ";

cin >> r;

cout << "Area : " << (22 / 7)\*r \*r;

}

};

int main() {

Circle c;

c.area();

}

Q10. Define a class Area and define instance member functions to find the area of the different shapes like square, rectangle, circle etc.

#include <iostream>

using namespace std;

class Area {

private:

float a, w, l, r;

public:

void square(void) {

cout << "Enter side of a square : ";

cin >> a;

cout << "Area of square ; " << a \*a;

}

void circle(void) {

cout << "Enter radius : ";

cin >> r;

cout << "Area : " << (22 / 7)\*r \*r;

}

void rect(void) {

cout << "Enter width and length : ";

cin >> w >> l;

float area = w \* l;

cout << "Area : " << area;

}

};

int main() {

Area a;

a.circle();

cout << endl;

a.rect();

cout << endl;

a.square();

}