OBJECT ORIENTED PROGRAMMING

QUIZ#1-SECTION(E)

SOLUTION

Total Marks(10 marks)

Question # 1

Create a class called Date that includes three pieces of information as data members—a month (type int), a day (type int) and a year (type int). Your class should have a constructor with three parameters that uses the parameters and member initializer to initialize the three data members and a default constructor. Assume that the values provided for the year is correct, but ensure that the month value is in the range 1–12 and day values is in range of 1-31; if it isn't, set the month to 1 and day to 1. Provide a set and a get function for each data member. Provide a member function displayDate that displays the month, day and year separated by forward slashes (/). Write a test program that demonstrates class Date's capabilities.

Marks(4 marks)

```
#include<iostream>
using namespace std;
class Date
{
        private:
                int month,day,year;
        public:
                Date(int month,int day,int year):month(month),day(day),year(year)
                {
                Ensure();
                }
                Ensure()
                {
                        if(this->month<1||this->month>12)
                        month=1;
                        if(this->day<1||this->day>31)
                        day=1;
                }
                Date()
                {}
                void set(int month,int day,int year)
                {
                this->month=month;
                this->day=day;
                this->year=year;
                Ensure();
                }
```

```
        void displaydate()
        {
                cout<<day<<"/"<<month<<"/"<<year<<endl;
        }
        int getmonth()
        {
                return month;
        }
        int getday()
        {
                return day;
        }
        int getyear()
        {
                return year;
        }
};
int main()
{
        Date d1(3,3,2002);//correct date
        cout<<"Date 1 : ";
        d1.displaydate();
        Date d2(13,3,2022);//incorrect month in date
        cout<<"Date 2 : ";
        d2.displaydate();
        Date d3(3,-2,2032);//incorrect day in date
        cout<<"Date 3 : ";
        d3.displaydate();
        Date d4;
        d4.set(333,1,3456);
        cout<<"Date 4 : "; //checking default constructor
        cout<<d4.getday()<<"/"<<d4.getmonth()<<"/"<<d4.getyear();//printing date 4 through getters
}
```

Question # 2: Write True/False or Fill in the Blank.

1. An instance of a class is called an object.
2. Every class declaration contains keyword _____ followed immediately by the class's name.
3. A method declaration that is below keyword protected indicates that it can be called by other classes declared outside the class declaration.
4. Keyword public is a_____.

5. Empty parentheses following a method name indicate that the method does not require any parameters to perform its task.
6. Object creation expressions begin with the new operator and create new objects in C++.
7. To call a method of an object, follow the variable name with a member access operator (.),
8. Each object (instance) of a class has the same copy of each instance variable.
9. Declaring instance variables with access modifier private is known as information hiding.
10. A constructor can be used to initialize an object of a class when the object is destroyed.
11. If no constructor is provided for a class, the compiler provides a public default constructor with no parameters that does not modify the instance variables' default values.
12. Constructors can specify parameters and return types.

Marks(6 marks)

1	**true**	**5**	**true**	**9**	**true**
2	**class**	**6**	**false**	**10**	**false**
3	**false**	**7**	**false**	**11**	**true**
4	**Access specifier**	**8**	**true**	**12**	**false**