

JK LAKSHMIPAT UNIVERSITY, JAIPUR

INSTITUTE OF ENGINEERING AND TECHNOLOGY

End Term Examination (Regular/Backlog), April 2018

B. Tech. in Chemical Engg.(CHE)/Civil Engg.(CE)/Mechanical Engg.(ME),
Semester II

Roll No.....

CSE202: Object Oriented Programming

Time: 3 hours

Max. Marks: 100

Instructions to students:

1. Do not write anything other than your roll number on question paper.
 2. Assume suitable data wherever required and mention it clearly.
 3. Writing appropriate units, nomenclature, and drawing neat sketches/schematics/ flow chart wherever, required are an integral part of the answer.
-

Q.1A Objective type multiple choice questions (10 questions @ 1 mark)

10

- i. C++ was originally developed by _____
 - (a) Clocksin and Mellish
 - (b) Donald E. Knuth
 - (c) Sir Richard Hadlee
 - (d) Bjarne Stroustrup
- ii. The use of the break statement in a switch statement is
 - (a) optional
 - (b) compulsory
 - (c) not allowed. It gives an error message
 - (d) none of the mentioned
- iii. Which of the following two entities (reading from Left to Right) can be connected by the dot operator?
 - (a) A class member and a class object.
 - (b) A class object and a class.
 - (c) A class and a member of that class.
 - (d) A class object and a member of that class.
- iv. Modularity is the benefit of _____ characteristic of OOP.
 - (a) Polymorphism
 - (b) Encapsulation
 - (c) Inheritance
 - (d) All of the above
- v. In object oriented Programming the program is divided into -----.
 - (a) class
 - (b) object
 - (c) function
 - (d) none of these

vi. What is the output of this program?

```
#include<iostream.h>
class Point {
private:
    int x;
    int y;
public:
    Point(int i, int j); // Constructor
};

Point::Point(int i = 0, int j = 0) {
    x = i;
    y = j;
    cout << "Constructor called";
}

int main()
{
    Point t1, *t2;
    return 0;
}
```

vii. ----- are normally used to maintain values common to the entire class.

- (a) Dynamic variables
- (b) Static variables
- (c) Private variables
- (d) Public variables

viii. Through ----- we can eliminate redundant code and extend the use of existing class.

- (a) inheritance
- (b) operator overloading
- (c) encapsulation
- (d) both a & b

ix. Which of the following statements is correct about the constructors and destructors?

- (a) Destructors can take arguments but constructors cannot.
- (b) Constructors can take arguments but destructors cannot.
- (c) Destructors can be overloaded but constructors cannot be overloaded.
- (d) Constructors and destructors can both return a value.

x. C++ supports run time polymorphism with the help of virtual functions, which is called binding.

- (a) dynamic
- (b) early binding
- (c) static
- (d) static linking

- i. What is the output of this program?

```
#include<iostream.h>
class Base1 {
public:
    Base1()
    { cout << " Base1's constructor called" << endl; }
};

class Base2 {
public:
    Base2()
    { cout << "Base2's constructor called" << endl; }
};

class Derived: public Base1, public Base2 {
public:
    Derived()
    { cout << "Derived's constructor called" << endl; }
};

int main()
{
    Derived d;
    return 0;
}
```

- ii. What is the output of this program?

```
#include <iostream.h>
int main ()
{

    int n;

    for (n = 5; n > 0; n--)
    {

        cout << n;

        if (n == 3)
            break;

    }

    return 0; }
```

iii.	What is object-oriented programming? Distinguish b/w class and structure.	
iv.	Describe inline function in C++. Write some situations where inline expansion may not work.	
Q.3A	Write a structure employee to store the information about an employee and print the details of the employee.	05
Q.3B	Write a program in C++ using default argument to find the bonus of an employee. The bonus will be 10% of basic if basic salary is less than Rs. 5000 and 15% of basic otherwise.	05
Q.4A	Write a program to enter and display the record of a book using all the member function inside the class.	05
Q.4B	Write a program to enter required number of book records and display them array in declaration of class's object.	05
Q.5A	What is function overloading? Write a program to swap two given values of int types and float types using overloaded function.	05
Q.5B	Which operators cannot be overloaded? Write a program for addition of two given distances using binary operator overloading.	05
Q.6A	Write a program to enter the data of a student and display it using indirection operator.	05
Q.6B	What are static member function? Write a program to program illustrate the use of the static member function, in checking the number of object created for a class.	05
OR		
Q.6B	Can you explicitly call a constructor from main()? If yes, how? Write a program to calculate simple interest using default arguments in constructor.	05
Q.7A	What is the role of virtual functions in late binding of the program? Write a program to demonstrate the operation of late binding of member function of the class.	05
Q.7B	Write a program to find highest of two given numbers in two different classes using friend function.	05
OR		
Q.7B	Write a program to calculate biggest of two numbers entered through constructor and then use destructor at end of program.	05
Q.8A	Explain the following: • Abstraction • Encapsulation	10

- Manipulators
- Nesting of member function
- Returning objects from functions

Q.9A What is the difference between public, private and protected derivation? Write a program to enter n number of records of various cars and display it using multilevel inheritance. 10

Q.9B Give a detailed description of the concepts of exception handling with specific reference to the concepts of throwing an exception, exception specification etc. Write a program containing a possible exception. Use a try block to throw it and a catch block to handle it properly. 10

OR

Q.9B Write a program that define a class to represent a book in a library includes the following members: 10

Data Members:

Book Number; Book Name; Author; Publisher; Price;

No. Of copies; No of copies issued.

Member functions:

1. To assign initial values
2. To issue a book after checking for its availability.
3. To return a book.
4. To display book information.