

JK LAKSHMIPAT UNIVERSITY, JAIPUR

INSTITUTE OF ENGINEERING AND TECHNOLOGY

End Term Examination (Regular/Backlog), November 2016

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

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 Attempt all questions (10 questions @ 1 mark)

10

- i. Which statement is used to terminate the execution of the nearest enclosing loop in which it appears?
(a) Break (b) Continue (c) Default (d) Case
- ii. If an array is declared as `int arr[50]`, how many elements can it hold?
(a) 49 (b) 50 (c) 51 (d) 0
- iii. Which type of statement helps to jump from one part of the program to another depending on whether a particular condition is satisfied or not?
(a) Conditional branching (b) Loops (c) Iterative (d) None of these
- iv. `*(&num)` is equivalent to writing
(a) `&num` (b) `*num` (c) `num` (d) none of these
- v. Data structure that can store related information together is
(a) Array (b) String (c) Structure (d) All of these
- vi. In declaration
`class Test { int x; };
x is which type of member?
(a) Public (b) Private (c) Protected (d) Any of these`
- vii. Which concept of object oriented programming does a class support?
(a) Data encapsulation (b) Data hiding (c) Data abstraction (d) All of these
- viii. A static member function can access only_____
(a) Private data members (b) Public data members (c) Static data members (d) Other static member functions

ix.	In protected inheritance, protected members of the base class become _____ members of the derived class. (a) Public (b) Private (c) Protected (d) None of these
x.	What happens when a class with parameterized constructors and having no default constructor is used in a program and we create an object that needs a zero-argument constructor? (a) Compile-time error (b) Preprocessing error (c) Runtime error (d) none of the mentioned

Q.2	Short answer type questions (4 questions @ 2.5 marks)	10
i.	What is Object-Oriented Programming Paradigms?	
ii.	What do you understand by visibility labels?	
iii.	What is the output of this program? <pre>#include<iostream.h> #include<conio.h> class Base { public: virtual void show() { cout << "Base class"; } }; class Derived: public Base { public: void show() { cout << "Derived Class"; } } void main() { Base* b; Derived d; b = &d; b->show(); }</pre>	
iv.	What will be the output of the given program? <pre>#include<iostream> class P { public:</pre>	

```

void print()
{ cout << " Inside P"; }
};
class Q : public P {
public:
    void print()
    { cout << " Inside Q"; }
};
class R: public Q {
};
int main(void)
{
    R r;
    r.print();
    return 0;
}

```

- Q.3A What are subscripts in array? How are they written? WAP to read n numbers (n defined by programmer), store them in a one dimensional array and to display the contents of that array on the screen. 05
- Q.3B What is inline function? Write an inline function for finding the largest from three numbers. 05
- Q.4A When do we need to use default arguments in a function? Write a program to calculate simple interest. Suppose the customer is a senior citizen. He is being offered 12 per cent rate of interest; for all other customers, the ROI is 10 per cent. 05
- Q.4B What are static data and member functions? Write a program that demonstrate the use of static data member, static member function, and array of objects. 05
- Q.5A What are nested member functions? Write a program to implement student's class. The program must demonstrate the use of nested member function and making a function defined outside the class an inline function. 05
- Q.5B Write a program that adds two numbers. The object must be passed through reference and the result must be passed by value. 05
- Q.6A What are friend classes? Write a program to increment the salary of employee using friend class. 05
- Q.6B What is the role of virtual functions in late binding of the program? Write a program to demonstrate the concept of polymorphism applied to the member functions. 05

Q.7A	Explain the keywords: try, catch and throw used for exception handling. Write a program using a try block to detect and throw an exception if the conditions "divide-by-zero" occurs.	10
OR		
Q.7A	What are friend functions? How a common friend function to two different classes can be declared? Write a program to find the mean of two numbers belonging to two different classes using friend function.	10
Q.8A	Define the basic concepts of object oriented programming: a. Object b. Class c. Abstraction d. Encapsulation e. Polymorphism f. Inheritance and its types g. Dynamic binding h. Message Passing	10 1 1 1 1 2 2 1 1
Q.9A	What are constructors and destructors? What are the characteristics of a constructor? WAP to calculate biggest of three numbers entered through constructor and then use destructor at end of program.	10
Q.9B	Define the term 'operator overloading' and explain its significance. How does operator overloading support polymorphism? List the operators that can not be overloaded. Write a program to demonstrate the operation of arithmetic assignment (+=) operator overloading function.	10
OR		
Q.9B	What are the differences between inheriting a class with public and private visibility mode? Write a program is to create a hybrid class called DC2, from the multilevel inheritance taking the path from the base class BC1 and its derived class DC1. And the hybrid class DC2 also inherits some of the features of another base class BC2.	10