

JK LAKSHMIPAT UNIVERSITY, JAIPUR

INSTITUTE OF ENGINEERING AND TECHNOLOGY

End Term Examination (Regular/Backlog), November-December 2015

B. Tech. in Computer Science & Engg./Electronics and Comm. Engg./Chemical Engg.,
Semester III

Roll No.....

CSE302: 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 of the following approach help us understand better about Real time examples, say Vehicle or Employee of an Organization? (a) Procedural approach (b) Object Oriented approach (c) Both a and b (d) None of the mentioned	
ii.	When a subclass inherits from a class which itself has inherited from another class, it is known as: (a) Multilevel Inheritance (b) Single Inheritance (c) Multiple Inheritance (d) Hierarchical Inheritance.	
iii.	A constructor having a reference to an instance of its own class as an argument is known as (a) parameterized constructor (b) default constructor (c) copy constructor (d) none of these	
iv.	Which of the following is/are advantage of using object oriented programming? (a) Code Reusability (b) Can create more than one instance of a class without interference (c) Platform independent (d) All of the mentioned	
v.	Which of the following is called as 'Compilation unit'? (a) Object file (b) Byte code (c) Source file (d) All of the mentioned	
vi.	What is the output of this program? <pre>class TypeChecking { public static void main(String args[]) { int num = 10.5; System.out.println("Output :The value of num is" +num); } }</pre>	

	(a) Output: The value of num is 10.5 (b) Run-time error (c) Compilation error (d) None of the mentioned	
vii.	Java Compiler translates the source code into _____ (a) Machine code (b) Assembly code (c) Byte code (d) JVM code	
viii.	What is the output of this program? <pre> class PrintTest { public static void main(String args[]) { int num = 10; if (NUM < 100) { System.out.println("The value of num is"+ num); } } } </pre>	
	(a) Compilation error (b) Run time error (c) The value of num is 10 (d) None of the mentioned	
ix.	Where should you initialize a static data member? (a) In main() (b) Inside class (c) In member function (d) After class definition	
x.	Which one of the following options is correct? (a) Friend function can access public data members of the class (b) Friend function can access private data members of the class (c) Friend function can access protected data members of the class (d) All of the above	

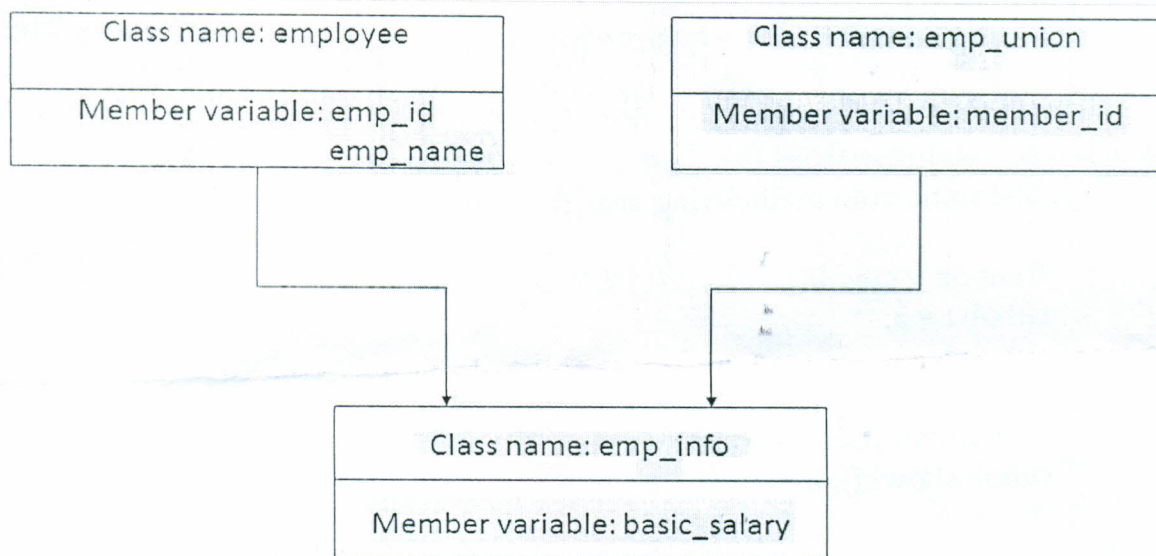
Q.2	Short answer type questions (4 questions @ 2.5 marks)	10
i.	What is Object-Oriented Programming Paradigms? What are the differences between Object Oriented Programming and Procedural Oriented Programming?	
ii.	What is data hiding? What are the different mechanism for protecting data from the external users of a class's objects?	
iii.	What are the differences between Structure and Class.?	
iv.	What is the output of this program? <pre> class A { int i, j; void showij() { System.out.println("i and j:" + i + " "+j); } } class B extends A { int k; void showk() </pre>	

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{
    System.out.println("k: " + k);
}
void sum() {
    System.out.println("i + j + k:" + (i + j + k));
}
}
class SimpleInheritance {
    public static void main(String args[])
    {
        B subob = new B();
        subob.i = 5;
        subob.j = 6;
        subob.k = 9;
        System.out.print("The contents are ");
        subob.showk();
    }
}

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Q.3A	What is the use of pointers with classes? WAP to enter the data of a student and display it using indirection operator and structure operator.	05
Q.3B	Write a program to declare a class 'employee', consisting of data members emp_no, and emp_name. Write the member functions accept() to accept and display() to display the data for 5 employees.	05
Q.4A	Write a program for adding of vector (which is object of the class vector) elements. Use dynamic data members instead of arrays for storing vector elements.	05
Q.4B	What are friend functions? How are they defined? Write a program to demonstrate friend function can be used to bridge the two classes.	05
Q.5A	When will you make a function inline? Why? Write an inline function for finding the largest from three numbers.	05
Q.5B	Write a program to implement the inheritance as shown in figure. Assume suitable member function to accept and display data.	05



Q.6A When do we need to use default arguments in a function? WAP to compute tax. 05
A tax compute function takes two arguments: amount and tax percentage. The default tax percentage is 15% of the income.

Q.6B WAP that uses an overloaded constructor to dynamically allocate memory to an array and thus find the largest of its elements. 05

OR

Q.6B What is operator overloading? WAP to demonstrate the operation of arithmetic (+) operator overloading function. 05

Q.7A 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 using a try block to detect and throw an exception if the conditions "divide-by-zero" occurs. 10

OR

Q.7A 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

Q.8A Define the basic concepts of object oriented programming: 10

- | | |
|--|---|
| a. Object | 1 |
| b. Class | 1 |
| c. Data abstraction and encapsulation | 2 |
| d. Polymorphism | 1 |
| e. Inheritance with its types | 2 |
| f. Message Passing | 1 |
| g. Static Data Members and Static Member functions | 2 |

Q.9A	What is function overloading? Write a program to calculate and display the sum of given integer, float and double numbers using function overloading. (passing more than one arguments to the function)	10
Q.9B	What is virtual function? What is early binding and late binding and why is late binding preferred? WAP to enter information of a student and display it by using the late binding technique.	10
OR		
Q.9B	What is a constructor? What are the characteristics of a constructor? Write a program to simulate saving account processing in a bank using constructors and also use destructor at the end of the program.	10