

JK LAKSHMIPAT UNIVERSITY, JAIPUR

INSTITUTE OF ENGINEERING AND TECHNOLOGY

End Term Examination (Backlog), November 2016

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.	A normal C++ operator that acts in special ways on nearly defined data types is said to be (a) encapsulation (b) classfield (c) overloading (d) polymorphism	
vii.	Which of the following statements is correct? (a) Base class pointer cannot point to derived class (b) Derived class pointer cannot point to base class (c) Pointer to derived class cannot be created (d) None	
viii.	Static member variable is initialized to..... when the first object of its class is created. (a) 0 (b) 1 (c) garbage (d) -1.	

ix. What is the output of this program?

```
#include<iostream.h>
#include<conio.h>
void junk(int, int*);
int main()
{
    int i=6,j=4;
    junk(i,&j);
    cout<<"i="<<i<<"j="<<j;
    return 0;
}
void junk(int a, int *b)
{
    a=a*a;
    *b=*b * *b;
}
```

(a) i=6, j=15 (b) i=6, j=16 (c) i=6, j=13 (d) i=5, j=16

x. A virtual base class is used when:

- (a) different functions in a base and derived class have the same name
- (b) the base class has a virtual function that needs to be overridden in the derived class
- (c) the identification of a function in a base class is ambiguous due to multiple inheritance
- (d) a base class is used with no body

Q.2 Short answer type questions (4 questions @ 2.5 marks) 10

- i. What is OOP? Discuss it in contrast with other programming techniques.
- ii. Name the operators that can not be overloaded in C++.
- iii. What are the differences between Structure and Class.?
- iv. WAP with user defined function 'cube' that calculates the cube of the integer from 1 to 10.

Q.3A What is the use of pointers with classes? Discuss two methods with example by which class members can be accessed using pointers. 05

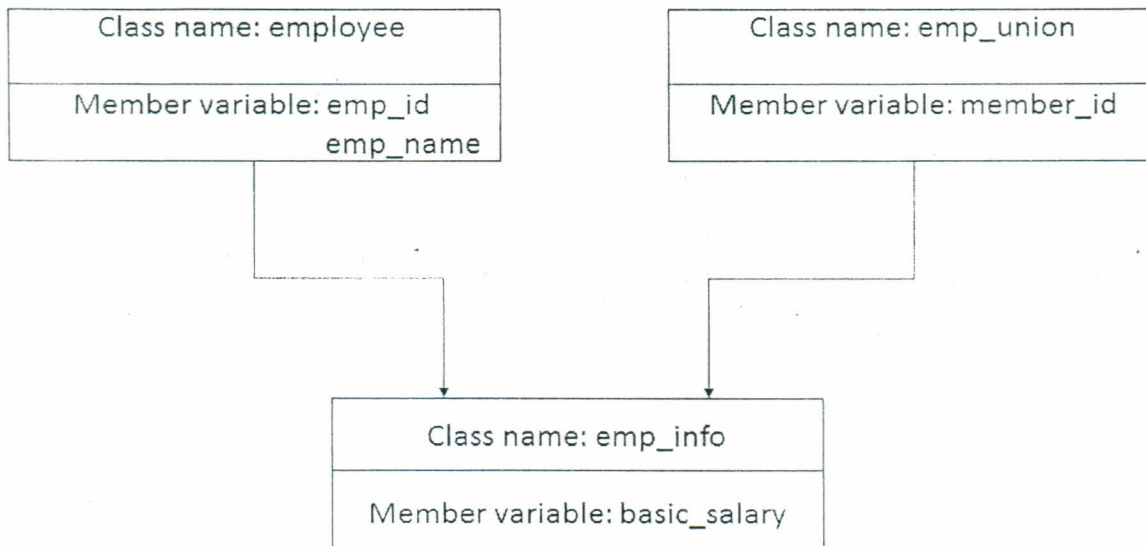
Q.3B Write a program to declare a class 'student', consisting of data members std_id, and std_name. Write the member functions accept() to accept and display() to display the data for 5 students. 05

Q.4A What are nested member functions? WAP to find the higher from two number using the nesting of member function. 05

Q.4B What are friend classes? Write a program to increment the salary of employee using friend class. 05

Q.5A When will you make a function inline? Why? Write a program to demonstrate the concept of inline function. 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? Write a program to find simple interest where rate is default argument in function. 05

Q.6B What is operator overloading? Write a program to demonstrate the operation of arithmetic assignment (+=) 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 What are the differences between inheriting a class with public and private visibility mode? WAP to read the first number in the base class and then read the second number in the derived class and then find their sum in the derived class. 10

Q.8A Define the basic concepts of object oriented programming:
 a. Object 1
 b. Class 1

c. Abstraction	1
d. Encapsulation	1
e. Polymorphism	2
f. Inheritance and its types	2
g. Dynamic binding	1
h. Message Passing	1

Q.9A	Explain the different methods of passing object parameters. WAP for passing objects as arguments. (i) WAP to distance manipulation in feet and inches (Passing objects by value). (ii) WAP to passing objects by reference as parameter to function. (Passing objects by reference).	10
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Q.9B	What does polymorphism mean in C++ language? How is polymorphism achieved at (a) compile time and (b) run time? WAP to enter information of an employee and display it by using the late binding technique.	10
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OR

Q.9B	What are constructors and destructors? What is the difference between default and parameterized constructors? WAP to enter any number and find its factorial and display it using constructor.	10
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