

JK LAKSHMIPAT UNIVERSITY, JAIPUR

INSTITUTE OF ENGINEERING AND TECHNOLOGY

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

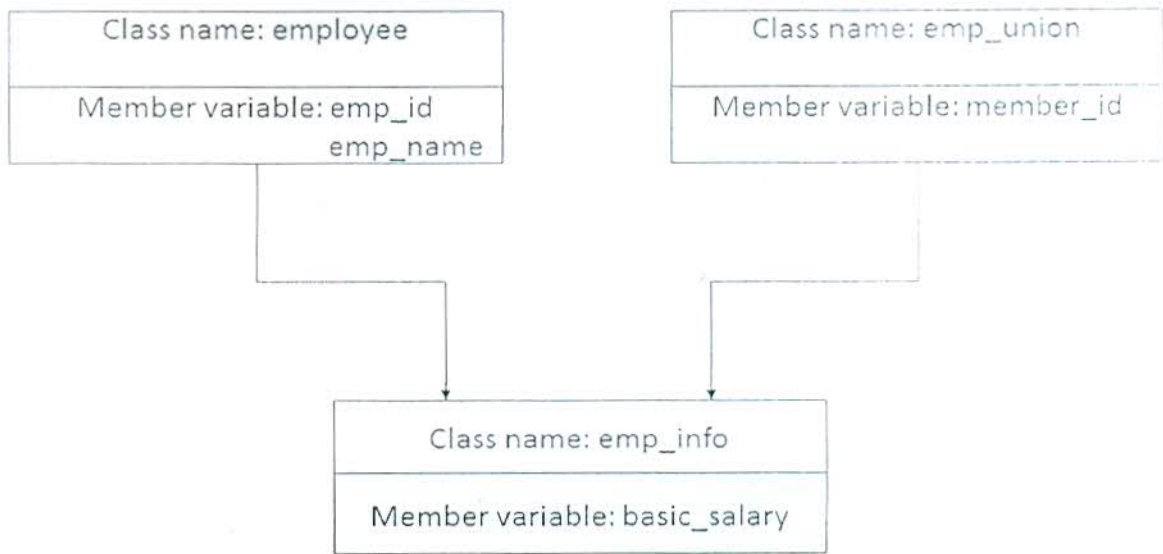
10

- i. Which of the following concepts means wrapping up of data and functions together?
(a) Abstraction (b) Encapsulation (c) Inheritance (d) Polymorphism
- ii. Which of the following approach is followed by Object Oriented Language during the execution of a program?
(a) Bottom up approach (b) Top down approach (c) Both a and b (d) None of the mentioned
- iii. What will happen in this code?

```
int a = 100, b = 200;  
int *p = &a, *q = &b;  
p = q;
```


(a) b is assigned to a (b) p now points to b (c) a is assigned to b (d) None of these
- iv. Which of the following concepts is used to implement late binding?
(a) Virtual function (b) Operator function (c) Const function (d) Static function
- v. 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
- vi. Which of the following concepts means determining at runtime what method to invoke?
(a) Data hiding (b) Dynamic Typing (c) Dynamic binding (d) Dynamic loading

- vii. A function that calls itself for its processing is known as
(a) Inline Function (b) Nested Function (c) Overloaded Function (d) Recursive Function
- viii. What is correct about the static data member of a class?
(a) A static member function can access only static data members of a class
(b) A static data member is shared among all the objects of the class
(c) A static data member can be accessed directly from main()
(d) Both (a) and (b)
- ix. Which of the following is an abstract data type?
(a) int (b) double (c) string (d) class
- 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
- What is object-oriented programming? How is it different from the procedure oriented programming?
 - What are static data members? Why are they needed?
 - What are the difference between structure and class?
 - WAP to find sum of three numbers using functions having arguments with return values.
- 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 a program to demonstrate inline function in C++. 05
- Q.4A 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.4B What is the use of pointers with classes? Discuss two methods with example by which class members can be accessed using pointers. 05
- Q.5A How member function of class can be defined inside and outside the class? What is the basic difference between them? 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 What is operator overloading? How many arguments are required to overload unary and binary operators, respectively? 05

Q.6B What is function overloading? Write a program to compute the volume of a cube, cylinder and rectangular box by overloaded the volume () function three times. 05

OR

Q.6B What are friend functions? How are they defined? WAP to find biggest from three numbers using friend function. 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 does polymorphism mean in C++ language? How is it implemented in C++? Distinguish between early binding and late binding. WAP to demonstrate the operation of virtual function using late binding technique. 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. Dynamic binding | 1 |
| g. Message Passing | 1 |
| h. Manipulator | 1 |

Q.9A What is a constructor? What are the characteristics of a constructor? 10
Whether constructors could be overload? Justify your answer through an example.

Q.9B What is destructor function? What is its use? Write a program to calculate 10
biggest of three numbers entered through constructor and then use destructor, at end of program.

OR

Q.9B What are the differences between inheriting a class with public and private 10
visibility mode? WAP to enter the information of an employee and then display it using the single inheritance concept (one base class and one derived class).