

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 Paradigm is followed by Object Oriented Language Design?
(a) Process-Oriented Model
(b) Data Controlling access to code.
(c) Both a and b
(d) None of the mentioned
- ii. Which of the following correctly declares an array?
(a) int array[10]; (b) int array; (c) array{10}; (d) array array[10];
- 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. How many times is a do while loop guaranteed to loop?
(a) 0 (b) Infinitely (c) 1 (d) Variable
- v. What is the technique of assigning different meaning to the same method name, allowing a single message to perform different functions according to the parameters accompanying?
(a) Overriding (b) Inheritance (c) Overloading (d) Generalization
- vi. 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.

vii. `#include<iostream.h>`

`void main()`

`{`

`cout<<"Hello";`

`return;`

`cout<<"Dear";`

`}`

(a) Dear (b) Hello (c) Hello Dear (d) Nothing.

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. Which is more effective while calling the functions?

(a) call by value (b) call by reference (c) call by pointer (d) none of the mentioned

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? List a few areas of application of OOP technology.

ii. What is C++? List a few areas of application of C++.

iii. What are the difference 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 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 When will you make a function inline? Why? Write an inline function for finding the minimum of two numbers.

05

Q.4A When do we need to use default arguments in a function? WAP to compute tax. A tax compute function takes two arguments: amount and tax percentage. The default tax percentage is 15% of the income.

05

Q.4B How objects of the class can be define using array? WAP to enter book records and display using array declaration in class. 05

Q.5A Define a class employee with the following specifications: 05

Private members of class employee

empno integer

ename 20 character

basic, hra, da float

netpay float

calculate() A function to find basic+hra+da with float return type.

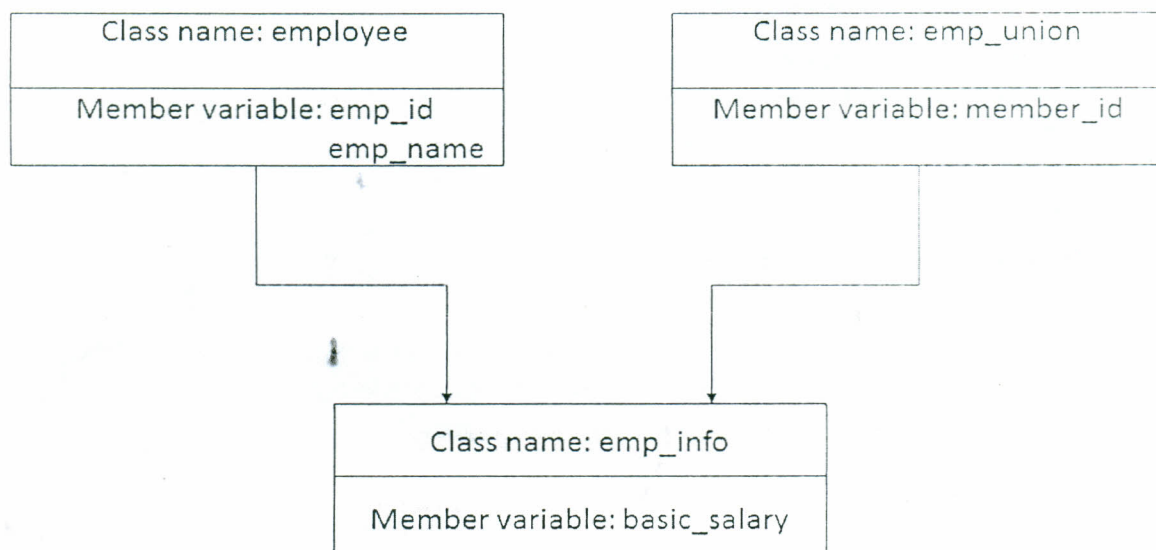
Public member functions of class employee

havedata() function to accept value for empno, ename, basic , hra , da and

invoke calculate() to calculate netpay.

dispdata() function to display all the members on the screen.

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? List the operators that can not be overloaded. WAP to overload unary minus operator. 05

Q.6B What is function overloading? Write overloaded functions for compute area of a triangle, a circle and a rectangle. 05

OR

Q.6B What are friend functions? How are they defined? WAP to find the sum of two numbers and display it using a friend function to a class. 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 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

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 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

Q.9B Write a program to simulate saving account processing in a bank using constructors also use destructor at the end of the program. 10

OR

Q.9B 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