**DATE: 05/03/2018**

**SARDAR VALLABHBHAI PATEL INSTITUTE OF TECHNOLOGY, VASAD**

**Question Bank**

**SEM: IVTH BRANCH: COMPUTER/IT**

**SUBJECT: OOPC CODE: 2140705**

**Note:The Quesiton Bank is only Reference for type of questions.**

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|  | What is object oriented programming? Explain basic concepts of Object-Oriented Programming. |
|  | Give difference between POP Language and OOP Language |
|  | Describe various operators in C++. |
|  | What is Reference variable? What is its major use? Give Example. |
|  | Describe Function overloading and Default arguments supported in C++ with proper example. |
|  | Explain Scope Resolution Operator with example. |
|  | Explain new and delete operator. What are the advantages of new operator over malloc? |
|  | What is a constructor? Which are the special characteristics of constructor functions? What is the need of “do-nothing” implicit constructor? When is the destructor function invoked? |
|  | What is Inline Function? In which Situation Inline Function may not work? How does an inline function differ from a pre-processor macro? |
|  | Explain Visibility modes with proper examples. |
|  | What is the purpose of Static? Write Characteristics of Static Data Member and Static Member Function. Write a program that demonstrates the Static Data Member And static member function. |
|  | Explain Call by reference and Call by value. |
|  | Explain Memory Management Operator with example |
|  | Show the use of multiple inheritances with the help of proper programming example. |
|  | Explain the type conversion from basic type to class type and from class type to basic type with proper example. |
|  | Define Inheritance. Explain the types of Inheritance with example. |
|  | How do they differ? :  char const \* ptr  char \* const ptr |
|  | Explain Operator overloading. Name the operator which cannot be overloaded. Name the operator which cannot be used with friend function for overloading. Explain how we can overload binary and unary operators in C++. |
|  | Write a Function **POWER( )** to raise a number **M** to power **N**. The Function takes double value for **M** and int value for **N** and returns result. Use a default value of 2 for N to make the Function calculate squares when this argument is omitted. Take the Input from the user to test the Function. |
|  | Write a C++ program to sort an array of integer in ascending order using a function called exchange( ) which accepts two integer arguments by reference. |
|  | Write a C++ program that will ask for a temperature in Fahrenheit and display it in Celsius using a class called **TEMP** and required member functions. |
|  | Create a class called 'EMPLOYEE' that has EMPCODE and EMPNAME as data members and  getdata( ) and display() to input data and to output data respectively. Write a main function to create EMP, anarray of EMPLOYEE objects. Accept and display the details of at least 6 employees. |
|  | A Class DISTANCE contains the data members like Inch and Feet. Write the member function Get\_Data( ) to accept the Inputs for data members from the user and Put\_Data( ) to display them. Take input for different objects. Implement a member function SUM( ) that takes two objects as an argument and stores the sum of distance in third object. |
|  | Explain Friend function and its characteristics. Define a class **matrix** with an integer array of 3X3 as a data member. Define a friend function which adds two matrix objects and returns resultant matrix object. |
|  | Write a class to represent a vector ( a series of float values). Include member functions to perform the following tasks:  (a) To create the vector  (b) To modify the value of a given element  (c) To multiply by a scalar value  (d) To display the vector in the form (10, 20, 30, ...)  Write a program to test your class. |
|  | Define Class named **point** which represents 2-D Point, i.e P(x, y). Define Default constructor to initialize both data member value 5, Parameterized constructor to initialize member according to value supplied by user and Copy Constructor. Define Necessary Functions and Write a program to test class Point. |
|  | Create a class Account. It has three data member account id, name and balance. Define functions to assign value and display value. Define function that search account number given by the user. If account number exists, print detail of that account. Write a program using array of object. Declare at least 5 account and print details. |
|  | Create two classes DM and DB which store the value of distances. DM stores distances in meters and centimeters and DB in feet and inches. Write a program that can read values for the class objects and add one object of DM with another object of DB. Use a friend function to carry out the addition operation. The object stores the results may a DM object or DB object, depending on the units in which the results are required. The display should be in the format of feet and inches or meters and centimeters depending on the object on display.  1 Feet = 0.3048Meter 1Meter = 3.28 Feet  1 Inch = 2.54 Centimeter 1 Centimeter = 0.3937 Inch |
|  | Define a class Time with hours and minutes as two data members, add necessary member functions to initialize and display data of class. Do not use constructors in a class. Define a member function sum() which adds two Time objects. Invoke the statements like T3.sum(T1, T2) in main (). |
|  | Define a class complex with real and imaginary as two data member, add necessary constructors and member function to initialize and display data of class. Class should overload the + operator to add two complex objects and return the results. Invoke the statements like C3=C1+C2 and C3= 2 + C1 in main (). |
|  | A Class THREE - D contains data members like X, Y, Z having dimension in each direction for 3-D Objects. Include constructor function to initialize data. Include member function Void Operator - ( ) that acts as a Unary Operator Overloading function to negate the sign of X, Y and Z. Also Overload +, ++ and -- Operators to perform the task of unary increment and  decrement Operator. Write Main( ) to Implement the class. |
|  | Assume that Circle is defined using radius and Cylinder is defined using radius and height. Write a Circle class as base class and inherit the Cylinder class from it. Develop classes such that user can compute the area of Circle objects and volume of Cylinder objects. Area of Circle is pie \*radius\*radius, while volume of Cylinder is pie\*(radius \* radius)\*height. |
|  | Consider a class network as shown in figure given. The class Employee  derives information from both Account and Admin classes which in turn  Derives information from the class Person. Define all the four classes and write a program to create, update and display the information contained in  Employee objects. |
|  | What is constructor?explain different types of constructor with example. |
|  | Explain call by reference and return by reference with example. |
|  | Explain friend function with suitable example. |
|  | Create a class Student that stores rollno,name. create a class Test that stores marks obtained in five subjects. class Result derived from student and test contains the total marks and percentage obtained in test. Input and display information of student. |
|  | Create a class Item with itemcode, itemrate and quantity as data member. Create and array of poiner to object of class item.write a member function which will calculate the amount of item.print item code and amount of item. |
|  | Explain manipulation of string using operator. |
|  | Explain Constructor in derived classes. |
|  | Write the basic structure of a C++ program with all necessary blocks. |
|  | Differenciate procedural programming and object oriented programming. |
|  | Explain the use of destructor in C++. Discuss its features. |
|  | What is polymorphism? How can we implement it in C++? |
|  | Explain protected data member. |
|  | Create a class Account that maintains the details about depositor in a Bank. Class has data members like name of depositor, account number and balance amount. Write the member function to assign initial values, to deposit an amount, to withdraw amount and display information about depositor. Implement the class with array of object. |
|  | Create a class Item that maintains the details about items purchased in a super market. Class stores itemcode and itemprice for each item. It also stores total items purchased. Perform the operations like adding an item in a list, removing an item from a list,diplay total value and display all items. Implement the class with array as data member. |
|  | Write a C++ program for matrix multiplication using friend function. |
|  | Explain copy constructor with example. |
|  | Explain dynamic constructor with example. |
|  | Explain multilevel inheritance. |
|  | Explain multiple inheritance. |
|  | Explain hierarchical inheritance. |
|  | Explain hybrid inheritance. |
|  | Explain nesting of classes. |
|  | Create a 'MATRIX' class of size m X n. Overload the ‘+’ operator to add two MATRIX objects. Write a main function to implement it. |
|  | Derive a class ‘MAT’ from MATRIX class (consist of matrix of size mXn). Add a member function to overload ‘\*’ operator to multiply two objects. (Single Inheritance) |
|  | Create a 'STRING' class which overloads ‘= = ' operator to compare two STRING objects |
|  | Write a program to create a class *distance* containing *feet* and *inches*. Using *operator* keyword, convert an object of class *distance* into *total meters* which is a float data type. (1 meter=3.28 feet) |
|  | Write a program to demonstrate conversion of an object of one class into an object of another class. |

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