**A.Y:2023-24**

**Lab Code: 20IT3353 Lab Name: Object Oriented Programming Lab**

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**WEEK- 6**

**OBJECTIVE:**

* **PRE-LAB:**

Work student has to complete before coming to the Lab

1. How many copies of a class's static member are shared between objects of the class?

A. A copy of the static member is shared by all objects of a class.

B. A copy is created only when at least one object is created from that class.

C. A copy of the static member is created for each instantiation of the class.

D. No memory is allocated for static members of a class.

1. What is the implicit pointer that is passed as the first argument for non-static member functions?

A. 'self' pointer

B. std::auto\_ptr pointer

C. 'myself' pointer

D. 'this' pointer

1. Which among the following is correct definition for static member functions?  
   a) Functions created to allocate constant values to each object  
   b) Functions made to maintain single copy of member functions for all objects  
   c) Functions created to define the static members  
   d) Functions made to manipulate static program
2. The static member functions \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
   a) Can be called using class name  
   b) Can be called using program name  
   c) Can be called directly  
   d) Can’t be called outside the function
3. Which among the following is not applicable for the static member functions?  
   a) Variable pointers  
   b) void pointers  
   c) this pointer  
   d) Function pointers
4. Which of the following are true about static member function?  
     
   1. They can access non-static data members.  
   2. They can call only other static member functions.  
   3. They can access global functions and data.  
   4. They can have this pointer.  
   5. They cannot be declared as const or volatile.

a. Only 2

b. Only 2,5

c. Only 2,3,4,5

d. Only 2 , 3 , 5

e. All of these

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1. Which of the following member functions is resolved dynamically?

A. static member function

B. const member function

C. virtual member function

D. non virtual member function

* **IN-LAB:**

1. A travel agent book tickets in rail to Mumbai to its customers. Create a class Railway with the variables pass\_name, age,no\_of\_tickets, price, total amount. The Manager of the travel agent wants to know howmany tickets and how many customers the agent has booked..
2. Write a c++ program for For MOVIE TICKET RESERVATION assuming that movie is

A rated movie and it shouldn’t allow the children below 18 and identify the current status

of the seats available and should also display when the house is full.

1. Write a c++ program to find out the number of votes polled by party ‘X’ and party ‘Y’

assuming a general election at Vijayawada. Find out the Winner of the election.

1. Create a class TTD which contains username, numberoftickets, totaltickets. Create the users to access the dardrashan tickets. Total number of tickets currently available are 50. Display the user information along with the tickets booked if the tickets are available or else display tickets are not available.
2. Write a C++ program to include two data members in a class, one is a static member and another is a non-static member. Create 2 objects for the class and access both the data members.
3. Write a C++ program to count how many calls are made to a member function set().
4. Create a class that includes a data member that holds a “serial number” for each object created from the class. That is, the first object created will be numbered 1, the second 2, and so on. To do this, you’ll need another data member that records a count of how many objects have been created so far. (This member should apply to the class as a whole; not to individual objects. What keyword specifies this?) Then, as each object is created, its constructor can examine this count member variable to determine the appropriate serial number for the new object. Add a member function that permits an object to report its own serial number. Then write a main() program that creates three objects and queries each one about its serial number. They should respond I am object number 2, and so on.
5. Write a C++ program to display the number of objects created and number of active objects using static members.

* **POST-LAB:**

Tasks/work student has to do after completing the lab and before the next lab.

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1. Create a class **Student** with **rollno, name**  and a static data member **totalStudents,** to keep track of the total number of students. Implement member functions to set the name and roll number of each student. Use the static data member to count the total number of students entered into the class. include a static member function **getTotalStudents** that returns the total number of students. Use this function to display the total number of students.