UNIVERSITY OF MUMBAI F.Y.B.Sc. INFORMATION TECHNOLOGY (Semester II) (Practical) EXAMINATION SECOND HALF 2018 Object Oriented Programming

Seat No:_____ Max Marks: 50

1. Write an OOP in C++ to create a class employee with data members employee ID, employee name, designation and salary. Write methods

(i) getEmployee()- To take user input (ii) showGrade()- to display grade of employee based on

salary (iii) showEmployee ()- to display employee details

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2. Write a C++ template function, called exchange ( ) that accepts two

arguments of generic type and swaps their contents.

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3. Viva 5 4. Journal 5

UNIVERSITY OF MUMBAI F.Y.B.Sc. INFORMATION TECHNOLOGY (Semester II) (Practical) EXAMINATION SECOND HALF 2018 OBJECT ORIENTED PROGRAMMING Seat No:_____ Max Marks: 50

1. Write a program in C++ to implement the inheritance as shown in figure. Assume suitable member function to accept and display data

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2. Write a program in C++ that obtains two numbers from the users. If the values are equal then display the appropriate message. But if the numbers are unequal then throw an exception and handle it.

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3. Viva 5 4. Journal 5

UNIVERSITY OF MUMBAI F.Y.B.Sc. INFORMATION TECHNOLOGY (Semester II) (Practical) EXAMINATION SECOND HALF 2018 OBJECT ORIENTED PROGRAMMING Seat No:_____ Max Marks: 50

1. Create a class NUMBER that contains one integer data member. Overload the *= and /= operator so that they can operate on the objects of class.

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2. Write a C++ program to read the contents of "STATE" , "CAPITAL" and "LANGUAGE" file and display the output as "Capital of Tamilnadu is Chennai where Tamil is spoken" on the console. Display 5 such details

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3. Viva 5 4. Journal 5

UNIVERSITY OF MUMBAI F.Y.B.Sc. INFORMATION TECHNOLOGY (Semester II) (Practical) EXAMINATION SECOND HALF 2018 OBJECT ORIENTED PROGRAMMING Seat No:_____ Max Marks: 50

1. Write a C++ program to create a friend function for adding the

two matrices from two different classes and display its sum

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2. Write a C++ program to count the total number of characters and

words in a file.

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3. Viva 5 4. Journal 5

UNIVERSITY OF MUMBAI F.Y.B.Sc. INFORMATION TECHNOLOGY (Semester II) (Practical) EXAMINATION SECOND HALF 2018 OBJECT ORIENTED PROGRAMMING Seat No:_____ Max Marks: 50

1. Design the class demo which will contain the following methods: readNo() ,factorial() for calculating the factorial of a number, reverseNo() will reverse the given number, isPalindrome() will check the given number is palindrome, isArmstrong() which will calculate the given number is armStrong or not, where readNo() will be a private method

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2. Write a function template for finding the maximum value

contained in an array.

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3. Viva 5 4. Journal 5

UNIVERSITY OF MUMBAI F.Y.B.Sc. INFORMATION TECHNOLOGY (Semester II) (Practical) EXAMINATION SECOND HALF 2018 OBJECT ORIENTED PROGRAMMING Seat No:_____ Max Marks: 50

1. Write an OOP in C++ to demonstrate the concept of using array of objects to create an array of ten employees (reading their entire personal data: Name, age, emp_ID, gender, address) and print the same.

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2. Write an OOP in C++ program to calculate the area of circle, rectangle and square using the concept of method overloading.

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3. Viva 5 4. Journal 5

UNIVERSITY OF MUMBAI F.Y.B.Sc. INFORMATION TECHNOLOGY (Semester II) (Practical) EXAMINATION

SECOND HALF 2018 OBJECT ORIENTED PROGRAMMING Seat No:_____ Max Marks: 50

1. Write an OOP in C++ to generate all the prime numbers between 1

and n, where n is a value supplied by the user.

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2. Write an OOP in C++ program to check whether the entered string

is palindrome or not.

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3. Viva 5 4. Journal 5

UNIVERSITY OF MUMBAI F.Y.B.Sc. INFORMATION TECHNOLOGY (Semester II) (Practical) EXAMINATION SECOND HALF 2018 OBJECT ORIENTED PROGRAMMING Seat No:_____ Max Marks: 50

1. Create a class NUMBER that contains one integer data member. Overload the *= and /= operator so that they can operate on the objects of class.

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2. Write an OOP in C++ program to copy the contents of one file into

another file.

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3. Viva 5 4. Journal 5

UNIVERSITY OF MUMBAI F.Y.B.Sc. INFORMATION TECHNOLOGY (Semester II) (Practical) EXAMINATION SECOND HALF 2018 OBJECT ORIENTED PROGRAMMING Seat No:_____ Max Marks: 50

1. Create a base class called Shape .Use this class to store two double values that could be used to compute the area of figures. Derive two specific classes called triangle and rectangle from the base shape. Add to the base class, a member function get_data() to initialize base class data members and another member function display_area() to compute and display the area of figures. Make display_araea() as a virtual function and redefine this function in the derived classes .Using this three classes design an OOPs with C++ program that will accept dimensions of triangle or a rectangle interactively and display the area.

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2. Design a class FileDemo opens a file in read mode and display the

total number of words and lines in the file.

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3. Viva 5 4. Journal 5

UNIVERSITY OF MUMBAI F.Y.B.Sc. INFORMATION TECHNOLOGY (Semester II) (Practical) EXAMINATION SECOND HALF 2018 OBJECT ORIENTED PROGRAMMING Seat No:_____ Max Marks: 50

1. Write an OOP in C++ to design a class “Number” with a private data member to read a number from the user. Design a class “Square” inherited from “Number” to calculate the square of that number. Design another class “Cube” inherited from “Number” to calculate cube of the number.

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2. Write a C++ program that read several city names and display only

those names beginning with characters “B” or “C”.

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3. Viva 5 4. Journal 5

UNIVERSITY OF MUMBAI F.Y.B.Sc. INFORMATION TECHNOLOGY (Semester II) (Practical) EXAMINATION SECOND HALF 2018 OBJECT ORIENTED PROGRAMMING Seat No:_____ Max Marks: 50

1. Design a class in C++ for adding 2 Complex numbers using friend

function.

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2. Write a C++ program to implement class template to find the

greatest of 3 numbers.

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3. Viva 5 4. Journal 5

UNIVERSITY OF MUMBAI F.Y.B.Sc. INFORMATION TECHNOLOGY (Semester II) (Practical) EXAMINATION SECOND HALF 2018 OBJECT ORIENTED PROGRAMMING Seat No:_____ Max Marks: 50

1. Design a class FLOATING in C++ that contains one float data member. Overload all the four arithmetic operators so that they operate on the objects of FLOATING.

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2. Write a program in C++ to find the area of circle using single inheritance such that the base class function must accept the radius from the user and the derived class function must calculate and display the area.

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3. Viva 5 4. Journal 5

UNIVERSITY OF MUMBAI F.Y.B.Sc. INFORMATION TECHNOLOGY (Semester II) (Practical) EXAMINATION SECOND HALF 2018 OBJECT ORIENTED PROGRAMMING Seat No:_____ Max Marks: 50

1. Write an OOP in C++ to store employee details (name,age,salary) to a file "Employee.txt". Also display employee details from the file on the console. Store 5 employee details

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2. Write an OOP in C++ to create a calculator class with the addition,

subtraction, multiplication and division member functions

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3. Viva 5 4. Journal 5

UNIVERSITY OF MUMBAI F.Y.B.Sc. INFORMATION TECHNOLOGY (Semester II) (Practical) EXAMINATION SECOND HALF 2018 OBJECT ORIENTED PROGRAMMING Seat No:_____ Max Marks: 50 1. Write an OOP with C++ program to overload unary operators

++(increment) and --(decrement)

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2. Write a C++ program to read two strings through the keyboard. Compare these two strings character by character. Display the similar characters found in both the strings and count the number of dissimilar characters.

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3. Viva 5 4. Journal 5

UNIVERSITY OF MUMBAI F.Y.B.Sc. INFORMATION TECHNOLOGY (Semester II) (Practical) EXAMINATION SECOND HALF 2018 OBJECT ORIENTED PROGRAMMING Seat No:_____ Max Marks: 50

1. Write an OOP in C++ to implement a class employee. An employee has a name and a salary (double). Write a default constructor and constructor with two parameters (name and salary) and two methods:

(i) to return the name and salary and (ii) A method that raises the employee's salary.

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2. Write a C++ program to create a function template and pick out the

smallest element in each array type.

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3. Viva 5 4. Journal 5

UNIVERSITY OF MUMBAI F.Y.B.Sc. INFORMATION TECHNOLOGY (Semester II) (Practical) EXAMINATION SECOND HALF 2018 OBJECT ORIENTED PROGRAMMING Seat No:_____ Max Marks: 50 1. Write an OOP in C++ to design a class "Shape". Declare side, length and breadth. Create a class "Square" inherited from "Shape" and calculate the area and perimeter of the Square. Create a class "Rectangle" inherited from "Shape" and calculate the area and perimeter of the Rectangle. Create a class "Cuboid" inherited from "Rectangle" and using the same data, obtain new data height and calculate the volume (l*b*h) of the Cuboid

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2. Write a C++ program to accept 10 numbers at runtime. Store all positive numbers in one file and negative numbers in other file

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3. Viva 5 4. Journal 5

UNIVERSITY OF MUMBAI F.Y.B.Sc. INFORMATION TECHNOLOGY (Semester II) (Practical) EXAMINATION SECOND HALF 2018 OBJECT ORIENTED PROGRAMMING Seat No:_____ Max Marks: 50

1. Write an OOP in C++ that creates a class time with two integers and in one float as hour, minute, and seconds respectively. There should be two constructors one for initializing these values to zero and other for initializing them to fixed values. In case seconds are not given, it should be automatically initialized to zero. A method should display time in 02:45:05 format. There should also be method that adds two time objects.

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2. Design the class student in C++ containing getData() and displayData() as two of its methods which will be used for reading and displaying the student information respectively.Where getData() will be private method.

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3. Viva 5 4. Journal 5

UNIVERSITY OF MUMBAI F.Y.B.Sc. INFORMATION TECHNOLOGY (Semester II) (Practical) EXAMINATION SECOND HALF 2018 OBJECT ORIENTED PROGRAMMING Seat No:_____ Max Marks: 50

1. Write an OOP with C++ program to design a circle class with radius as data member, necessary constructors and member function to compute to compute area of circle. Class should overload the comparison operator = = to compare two circle objects whether they are equal in radius.

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2. Write a C++ program that will read a line of text containing more than three words and then replace all the blank spaces with an underscore (_).

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3. Viva 5 4. Journal 5

UNIVERSITY OF MUMBAI F.Y.B.Sc. INFORMATION TECHNOLOGY (Semester II) (Practical) EXAMINATION SECOND HALF 2018 OBJECT ORIENTED PROGRAMMING Seat No:_____ Max Marks: 50

1. Write an OOP with C++ program to overload unary minus operator using friend function.

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2. Write an OOP with C++ to design a class StaticDemo to show the implementation of static variable and static function

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3. Viva 5 4. Journal 5

UNIVERSITY OF MUMBAI F.Y.B.Sc. INFORMATION TECHNOLOGY (Semester II) (Practical) EXAMINATION SECOND HALF 2018 OBJECT ORIENTED PROGRAMMING Seat No:_____ Max Marks: 50

1. Write a C++ program to read the contents of “COUNTRY” and “CURRENCY” file and display the output as “Currency of India is Rupee” on the console. Display 5 such details.

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2. Write a C++ program to accept two strings “Hello” and “Friends”. Concatenate them and find the first and last position of ‘e’ in the concatenated string. Replace “llo” in string 1 with “ight”. Erase‘s’ in second string. Display the manipulated string results.

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3. Viva 5 4. Journal 5

UNIVERSITY OF MUMBAI F.Y.B.Sc. INFORMATION TECHNOLOGY (Semester II) (Practical) EXAMINATION SECOND HALF 2018 OBJECT ORIENTED PROGRAMMING Seat No:_____ Max Marks: 50

1. Write an OOP in C++ to demonstrate the concept of using array of objects to create an array of ten employees (reading their entire personal data: Name, age, emp_ID, gender, address) and print the same.

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2. Write a friend function for adding the two complex numbers, using

a single class

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3. Viva 5 4. Journal 5

UNIVERSITY OF MUMBAI F.Y.B.Sc. INFORMATION TECHNOLOGY (Semester II) (Practical) EXAMINATION SECOND HALF 2018 OBJECT ORIENTED PROGRAMMING Seat No:_____ Max Marks: 50

1. Create a class “Item” and place code and price as their data members. Write constructor to initialize the members and display () to show the values. Create another class “Edible _Oil” which inherits “Item” and place brandname as its data member. Write constructor to initialize the members and showDet () to show the values. Create another class “HealthyYammy” which inherits “Item” and place its fat and carbohydrate composition as its data members. Write constructor to initialize the members and showDet () to show the values. Create another class “Greeny” which inherits “Item” and place its rate as its data members. Write constructor to initialize the members and showDet () to show the values. In main function, access the methods through the object.

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2. Write a C++ program to create a function template and pick out the

smallest element in each array type.

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3. Viva 5 4. Journal 5

UNIVERSITY OF MUMBAI F.Y.B.Sc. INFORMATION TECHNOLOGY (Semester II) (Practical) EXAMINATION SECOND HALF 2018 OBJECT ORIENTED PROGRAMMING Seat No:_____ Max Marks: 50

1. Create a class" Music".Place artist as its member. Write a constructor to initialize the value. Write a method to display the characteristics of that artist. Create another class "InstrumentalMusic" which inherits "Music". Place an instrument as its member. Write a constructor to initialize the value. Write a method to display the instruments name and its specialty. Create another class "StringInstrumental" which inherits InstrumentalMusic". Write a constructor to initialize the value. Write a method to display the name of the artist in that "StringInstrumental". In main function create the object of "StringInstrumental" and access all the methods.

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2. Create 1-d array. Get the array size from the user. Initialize the array with dynamic elements. Find the maximum and minimum of those array elements by using nested method concept. Write a program in C++ for the above.

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3. Viva 5 4. Journal 5

UNIVERSITY OF MUMBAI F.Y.B.Sc. INFORMATION TECHNOLOGY (Semester II) (Practical) EXAMINATION SECOND HALF 2018 OBJECT ORIENTED PROGRAMMING Seat No:_____ Max Marks: 50

1. Create a class "TestIncr". Place 2 double and 1 integer as its members. Initialize the values through constructor. (Get the value from the user). Write a method incr () that increment all the members by 10. Return the object of the same class type as result. Write a display () to display the values. Create 2 objects of the same class in main function. Access the method getdata () and assign the incremented value to another object. Display both the object's value.

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2. Write a C++ program to create a function template and pick out the

largest element in each array type.

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3. Viva 5 4. Journal 5

UNIVERSITY OF MUMBAI F.Y.B.Sc. INFORMATION TECHNOLOGY (Semester II) (Practical) EXAMINATION SECOND HALF 2018 OBJECT ORIENTED PROGRAMMING Seat No:_____ Max Marks: 50

1. Create an abstract class “BluePrint” and place totalsqft and carpetarea as the members. Use constructor to initialize the values of the members. Declare an abstract method display (). Create a class “Ashirwad” which extends “BluePrint”. Initialize the super class members through constructor. Define display method to display the special features of the building, total square feet and the carpet area of a flat. Create another class “Virudhi” which extends “BluePrint”. Initialize the super class members through constructor. Define display method to display the special features of the building, total square feet and the carpet area of a flat. Create a class “SiddhiVinayak” which extends “BluePrint”. Initialize the super class members through constructor. Define display method to display the special features of the building, total square feet and the carpet area of a flat. In the main function, through the reference of “BluePrint” access its subclasses display function.

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2. Write a C++ program to accept two strings “Hello” and “Friends”. Concatenate them and find the first and last position of ‘e’ in the concatenated string. Replace “llo” in string 1 with “ight”. Erase‘s’ in second string. Display the manipulated string results.

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3. Viva 5 4. Journal 5

UNIVERSITY OF MUMBAI F.Y.B.Sc. INFORMATION TECHNOLOGY (Semester II) (Practical) EXAMINATION SECOND HALF 2018 OBJECT ORIENTED PROGRAMMING Seat No:_____ Max Marks: 50

1. Create a class “Class1” and place 2 integers as private members. To initialize them use constructor. Create a class “Class2” and place 2 integers as private members. To initialize them use constructor. Add a friend function Compare () to compare the members of “Class1” and “Class2” and display whether the instance of class1 is = instance of class2 or class1 < class2 or class1 > class2. Add a function display to display the values of the data members.

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2. Design a class Geometry containing the methods area() and volume() and also overload the area() function

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3. Viva 5 4. Journal 5

UNIVERSITY OF MUMBAI F.Y.B.Sc. INFORMATION TECHNOLOGY (Semester II) (Practical) EXAMINATION SECOND HALF 2018 OBJECT ORIENTED PROGRAMMING Seat No:_____ Max Marks: 50

1. Write an OOP in C++ to demonstrate the concept of using array of objects to create an array of ten employees (reading their entire personal data: Name, age, emp_ID, gender, address) and print the same.

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2. Write a C++ program to accept 10 numbers at runtime. Store all

even numbers in one file and negative numbers in other file.

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3. Viva 5 4. Journal 5