

**SAVITRIBAI PHULE PUNE UNIVERSITY**

**M.Sc. (Computer Application) Sem I**

**Practical Examination (2023 Pattern)**

**SUBJECT: CA 511 MJP**

**Lab Course Based on CA 510A MJ (Java Programming)**

**Time: 3 Hours**

**Max. Marks: 35**

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Q.1) Write a Java program to accept a number from user and generate multiplication table of a number. Accept number using Buffered Reader class. [10 Marks]

Q.2) Define a class MyNumber having one private integer data member. Write a default constructor initialize it to 0 and another constructor to initialize it to a value. Write methods isNegative, isPositive, isOdd, isEven. Use command line argument to pass a value to the object and perform the above operations. [20 Marks]

**OR**

Q.2) Write a java program to design a following GUI. Use appropriate Layout and Components

Registration Form

User Name:

Mobile Number:

Class: ☐ FY ☐ SY ☐ TY

Gender: ☐ Female ☐ Male

[20 Marks]

Q.3) Viva

[5 Marks]

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Q.1) Write a Java Program to Reverse a Number. Accept number using command line arguments.

[10 Marks]

Q.2) Write a program to create class Account (accno, accname, balance). Create an array of 'n' Account objects. Define static method "sortAccount" which sorts the array on the basis of balance. Display account details in sorted order.

[20 Marks]

**OR**

Q.2) Write a class Student with attributes roll no, name, age and course. Initialize values through parameterized constructor. If age of student is not in between 15 and 21 then generate userdefined exception —Age Not Within The Range. If name contains numbers or special symbols raise exception —Name not valid

[20 Marks]

Q.3) Viva

[5 Marks]

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Q.1) Write a Java program to print the sum of elements of the array. Also display array elements in ascending order. [10 Marks]

Q.2) Write a program which define class Product with data member as id, name and price. Store the information of 5 products and display the name of product having minimum price (Use array of object). [20 Marks]

**OR**

Q.2) Define an Interface Shape with abstract method area (). Write a java program to calculate an area of Circle and Sphere. (Use final keyword). [20 Marks]

Q.3) Viva [5 Marks]

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Q.1) Write a Java program to print the factors of a given number. (Use Scanner class).

[10 Marks]

Q.2) Construct a linked List containing names of colours: red, blue, yellow and orange. Then extend the program to do the following:

- i. Display the contents of the List using an Iterator
- ii. Display the contents of the List in reverse order using a ListIterator
- iii. Create another list containing pink and green. Insert the elements of this list between blue and yellow.

[20 Marks]

**OR**

Q.2) Write a program which define class Employee with data member as id, name and salary Store the information of 'n' employees and display the name of employee having maximum salary (Use array of object).

[20 Marks]

Q.3) Viva

[5 Marks]

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---

Q.1) Write a Java program to accept a number from user and print all prime numbers up to that number (Use Buffered Reader class). [10 Marks]

Q.2) Create a package “utility”. Define a class Capital String under “utility” package which will contain a method to return String with first letter capital. Create a Person class (members – name, city) outside the package. Display the person’s name with first letter as capital by making use of Capital String.

[20 Marks]

**OR**

Q.2) Create an abstract class Shape with methods area & volume. Derive a class Cylinder (radius, height). Calculate area and volume [20 Marks]

Q.3) Viva

[5 Marks]

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Q.1) Write a Java Program to Display Armstrong Numbers Between range. Accept range from user.

[10 Marks]

Q.2) Write a program create class as MyDate with dd,mm,yy as data members. Write parameterized constructor. Display the date in dd-mm-yy format. (Use this keyword).

[20 Marks]

**OR**

Q.2) Write a Java program to create a super class Employee (members – name, salary). Derive a sub-class as Developer (member – projectname). Derive a sub-class Programmer (member – proglanguage) from Developer. Create object of Programmer and display the details of it. Implement this multilevel inheritance with appropriate constructor and methods.

[20 Marks]

Q.3) Viva

[5 Marks]

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Q.1) Write java program to check whether number is Perfect or not. [10 Marks]

Q.2) Define a class Student with attributes rollno and name. Define default and parameterized constructor. Keep the count of Objects created. Create objects using parameterized constructor and display the object count after each object is created. [20 Marks]

**OR**

Q.2) Write a java program to accept details of n customers (c\_id, cname, address, mobile\_no) from user and store it in a file (Use DataOutputStream class). Display the details of customers by reading it from file. (Use DataInputStream class). [20 Marks]

Q.3) Viva [5 Marks]

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Q.1) Define a class student having rollno, name and percentage. Define Default and parameterized constructor. Accept the 5 student details and display it. (Use this keyword). [10 Marks]

Q.2) Create an abstract class Shape with methods area & volume. Derive a class Cylinder (radius, height). Calculate area and volume. [20 Marks]

**OR**

Q.2) Write a java program to design a following GUI. Use appropriate Layout and Components.

Vaccination Details

Name:

Dose	Vaccine
<input type="checkbox"/> 1 <sup>st</sup> Dose	<input type="radio"/> Covishield
<input type="checkbox"/> 2 <sup>nd</sup> Dose	<input type="radio"/> Covaxin
	<input type="radio"/> Sputnik V

Name : \_\_\_\_\_ 1<sup>st</sup> Dose: \_\_\_\_\_ 2<sup>nd</sup> Dose: \_\_\_\_\_

Vaccine: \_\_\_\_\_

[20 Marks]

Q.3) Viva

[5 Marks]



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Q.1) Write a Java program to display Fibonacci series using function. [10 Marks]

Q.2) Define an interface “Operation” which has methods area (), volume (). Define a constant PI having a value 3.142. Create a class circle (member – radius), cylinder (members – radius, height) which implements this interface. Calculate and display the area and volume. [20 Marks]

**OR**

Q.2) Write a package game which will have 2 classes Indoor & Outdoor. Use a function display () to generate the list of players for the specific game. Use default & parameterized constructor.

[20 Marks]

Q.3) Viva

[5 Marks]

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Q.1) Write a program that reads on file name from the user, then displays information about whether the file exists, whether the file is readable, whether the file is writable and the type of file. [10 Marks]

Q.2) Write a Java program to create a super class Vehicle having members Company and Price. Derive two different classes LightMotorVehicle (mileage) and HeavyMotorVehicle (capacity\_in\_tons). Accept the information for “n” vehicles and display the information in appropriate form. While taking data, ask user about the type of vehicle first [20 Marks]

**OR**

Q.2) Define a class Student with attributes rollno and name. Define default and parameterized constructor. Keep the count of Objects created. Create objects using parameterized constructor and display the object count after each object is created [20 Marks]

Q.3) Viva [5 Marks]

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Q.1) Write a java program to accept a number from the user, if number is zero then throw user defined exception —Number is 0, otherwise check whether no is prime or not. [10 Marks]

Q.2) Create an abstract class Shape with methods area & volume. Derive a class Cylinder (radius, height). Calculate area and volume. [20 Marks]

**OR**

Q.2) Create a java application to store city names and their STD codes using an appropriate collection. i. Add a new city and its code (No duplicates) ii. Remove a city from the collection iii. Search for a cityname and display the code. [20 Marks]

Q.3) Viva [5 Marks]

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---

Q.1) Write a Java Program to Display Armstrong Numbers Between range. Accept range from user. [10 Marks]

Q.2) Define an Interface Shape with abstract method area (). Write a java program to calculate an area of Circle and Sphere. (Use final keyword). [20 Marks]

**OR**

Q.2) Create a package “utility”. Define a class Capital String under “utility” package which will contain a method to return String with first letter capital. Create a Person class (members – name, city) outside the package. Display the person’s name with first letter as capital by making use of Capital String. [20 Marks]

Q.3) Viva [5 Marks]

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Q.1) Write a java program to count number of digits, spaces and characters from a file.

[10 Marks]

Q.2) Create a package named “Series” having three different classes to print series: a.Fibonacci series b. Cube of numbers c. Square of numbers Write a java program to generate “n” terms of the above series. Accept n from user.

[20 Marks]

**OR**

Q.2) Write a program which define class Employee with data member as id, name and salary Store the information of ‘n’ employees and display the name of employee having maximum salary (Use array of object).

[20 Marks]

Q.3) Viva

[5 Marks]

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---

Q.1) Write a program that reads on file name from the user, then displays information about whether the file exists, whether the file is readable, whether the file is writable and the type of file. [10 Marks]

Q.2) Write a package game which will have 2 classes Indoor & Outdoor. Use a function display () to generate the list of players for the specific game. Use default & parameterized constructor [20 Marks]

**OR**

Q.2) Write a Java program to calculate area of Circle, Triangle & Rectangle. (Use Method Overloading). [20 Marks]

Q.3) Viva [5 Marks]

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---

Q.1) Write a Java program to print the factors of a given number. (Use Scanner class).

[10 Marks]

Q.2) Define an interface “Operation” which has methods area (), volume (). Define a constant PI having a value 3.142. Create a class circle (member – radius), cylinder (members – radius, height) which implements this interface. Calculate and display the area and volume.

[20 Marks]

**OR**

Q.2) Define a class Employee having members – id, name, salary. Define default constructor. Create a subclass called Manager with private member bonus. Define methods accept and display in both the classes. Create “n” objects of the Manager class and display the details of the worker having the maximum total salary (salary +bonus).

[20 Marks]

Q.3) Viva

[5 Marks]

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Q.1) Create a Hash table containing Employee name and Salary. Display the details of the hash table.  
[10 Marks]

Q.2) Write a class Student with attributes roll no, name, age and course. Initialize values through parameterized constructor. If age of student is not in between 15 and 21 then generate user-defined exception —Age Not Within The Range. If name contains numbers or special symbols raise exception —Name not valid.  
[20 Marks]

**OR**

Q.2) Write a java program to design a following GUI. Use appropriate Layout and Components.



[20 Marks]

Q.3) Viva

[5 Marks]



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Q.1) Write a program to accept 'n' integers from the user & store them in an Array List collection. Display the elements of Array List. [10 Marks]

Q.2) Define a class patient (patient\_name, patient\_age, patient\_oxy\_level, patient\_HRCT\_report). Create an object of patient. Handle appropriate exception while patient oxygen level less than 95% and HRCT scan report greater than 10, then throw user defined Exception "Patient is Covid Positive(+) and Need to Hospitalized" otherwise display its information. [20 Marks]

**OR**

Q.2) Construct a Linked List containing name: CPP, Java, Python and PHP. Then extend your java program to do the following:

- i. Display the contents of the List using an Iterator.
- ii. Display the contents of the List in reverse order using a List Iterator.

[20 Marks]

Q.3) Viva

[5 Marks]

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Q.1) Write a java program to accept a number from user, if it zero then throw user defined Exception “Number Is Zero”, otherwise calculate the sum of first and last digit of that number.

(Use static keyword)

[10 Marks]

Q.2) Write a program to read the contents of “abc.txt” file. Display the contents of file in uppercase as output.

[20 Marks]

**OR**

Q.2) Create a java application to store city names and their STD codes using an appropriate collection.

- i. Add a new city and its code (No duplicates)
- ii. Remove a city from the collection
- iii. Search for a cityname and display the code

[20 Marks]

Q.3) Viva

[5 Marks]

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Q.1) Write a Java program to print the factors of a given number. (Use Scanner class). [10 Marks]

Q.2) Write a java program to accept Doctor Name from the user and check whether it is valid or not. (It should not contain digits and special symbol) If it is not valid then throw user defined Exception – Name is Invalid – otherwise display it [20 Marks]

**OR**

Q.2) Write a package game which will have 2 classes Indoor & Outdoor. Use a function display () to generate the list of players for the specific game. Use default & parameterized constructor.

[20 Marks]

Q.3) Viva

[5 Marks]

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Q.1) Write a class Driver with attributes license\_no, name, address and age. Initialize values through the parameterized constructor. If age of Driver is less than 18 then user-defined exception should be generated —Age is below 18 years— [10 Marks]

Q.2) Construct a linked List containing names of colours: red, blue, yellow and orange. Then extend the program to do the following:

- i. Display the contents of the List using an Iterator
- ii. Display the contents of the List in reverse order using a List Iterator
- iii. Create another list containing pink and green. Insert the elements of this list between blue and yellow [20 Marks]

**OR**

Q.2) Define a class MyNumber having one private integer data member. Write a default constructor initialize it to 0 and another constructor to initialize it to a value. Write methods isNegative, isPositive, isOdd, isEven. Use command line argument to pass a value to the object and perform the above operations. [20 Marks]

Q.3) Viva [5 Marks]

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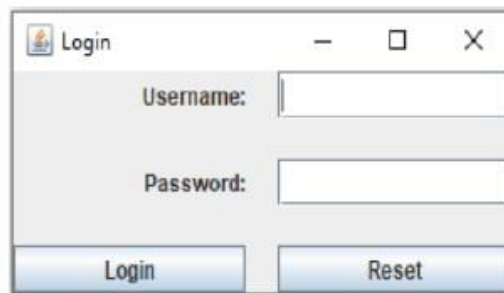
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Q.1) Create a Hash table containing Employee name and Salary. Display the details of the hash table. [10 Marks]

Q.2) Write a java program to accept details of n customers (c\_id, cname, address, mobile\_no) from user and store it in a file (Use DataOutputStream class). Display the details of customers by reading it from file. (Use DataInputStream class). [20 Marks]

**OR**

Q.2) Write a java program to design a following GUI. Use appropriate Layout and Components.



[20 Marks]

Q.3) Viva

[5 Marks]

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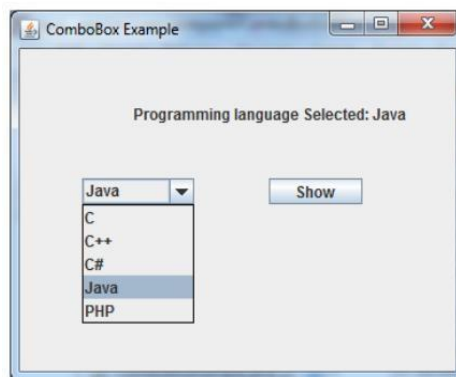
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Q.1) Write a Java program to print the sum of elements of the array. Also display array elements in ascending order. [10 Marks]

Q.2) Write a package game which will have 2 classes Indoor & Outdoor. Use a function display () to generate the list of players for the specific game. Use default & parameterized constructor [20 Marks]

**OR**

Q.2) Write a java program to design a following GUI. Use appropriate Layout and Components.



[20 Marks]

Q.3) Viva

[5 Marks]

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Q.1) Define a class student having rollno, name and percentage. Define Default and parameterized constructor. Accept the 5 student details and display it. (Use this keyword).

[10 Marks]

Q.2) Write a class Student with attributes roll no, name, age and course. Initialize values through parameterized constructor. If age of student is not in between 15 and 21 then generate user-defined exception —Age Not Within The Range. If name contains numbers or special symbols raise exception —Name not valid

[20 Marks]

**OR**

Q.2) Write a program to read the contents of “abc.txt” file. Display the contents of file in uppercase as output.

[20 Marks]

Q.3) Viva

[5 Marks]

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Q.1) Write a java program that displays the number of characters, lines and words of a file.

[10 Marks]

Q.2) Create an abstract class Shape with methods area & volume. Derive a class Cylinder (radius, height). Calculate area and volume

[20 Marks]

**OR**

Q.2) Create a package “utility”. Define a class Capital String under “utility” package which will contain a method to return String with first letter capital. Create a Person class (members – name, city) outside the package. Display the person’s name with first letter as capital by making use of Capital String.

[20 Marks]

Q.3) Viva

[5 Marks]



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Q.1) Create a Hash table containing Employee name and Salary. Display the details of the hash table. [10 Marks]

Q.2) Define an abstract class Shape with abstract methods area () and volume (). Derive Abstract class Shape into two classes Cone and Cylinder. Write a java Program To calculate area and volume of Cone and Cylinder.(Use Super Keyword). [20 Marks]

**OR**

Q.2) Define an interface “Operation” which has methods area (), volume (). Define a constant PI having a value 3.142. Create a class circle (member – radius), cylinder (members – radius, height) which implements this interface. Calculate and display the area and volume.

[20 Marks]

Q.3) Viva

[5 Marks]