

Savitribai Phule Pune University
T.Y.B.Sc. Computer Science Practical Examination
SEMESTER – V
Course Code CS – 359
Practical Course based on CS 355(Core Java)

Duration: 3 Hours

Maximum Marks: 35

Q1) Write a Program to print all Prime numbers in an array of 'n' elements.
(use command line arguments)

[10 marks]

Q2) Define an abstract class Staff with protected members id and name. Define a parameterized constructor. Define one subclass OfficeStaff with member department. Create n objects of OfficeStaff and display all details.

[20 marks]

Q3) Viva

[05 marks]

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Q1) Write a program to read the First Name and Last Name of a person, his weight and height using command line arguments. Calculate the BMI Index which is defined as the individual's body mass divided by the square of their height.
(Hint : $BMI = Wts. \text{ In kgs} / (ht)^2$)

[10 marks]

Q2) Define a class CricketPlayer (name,no_of_innings,no_of_times_notout, totatruns, bat_avg). Create an array of n player objects .Calculate the batting average for each player using static method avg(). Define a static sort method which sorts the array on the basis of average. Display the player details in sorted order.

[20 marks]

Q3) Viva

[05 marks]

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Q1) Write a program to accept 'n' name of cities from the user and sort them in ascending order.

[10 marks]

Q2) 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]

Q3) Viva

[05 marks]

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Q1) Write a program to print an array after changing the rows and columns of a given two-dimensional array.

[10 marks]

Q2) Write a program to design a screen using Awt that will take a user name and password. If the user name and password are not same, raise an Exception with appropriate message. User can have 3 login chances only. Use clear button to clear the TextFields.

[20 marks]

Q3) Viva

[05 marks]

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Q1) Write a program for multilevel inheritance such that Country is inherited from Continent.
State is inherited from Country. Display the place, State, Country and Continent.

[10 marks]

Q2) Write a menu driven program to perform the following operations on multidimensional array
ie matrices :

- Addition
- Multiplication
- Exit

[20 marks]

Q3) Viva

[05 marks]

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Q1) Write a program to display the Employee(Empid, Empname, Empdesignation, Empsal) information using toString().

[10 marks]

Q2) Create an abstract class “order” having members id, description. Create two subclasses “PurchaseOrder” and “Sales Order” having members customer name and Vendor name respectively. Define methods accept and display in all cases. Create 3 objects each of Purchase Order and Sales Order and accept and display details.

[20 marks]

Q3) Viva

[05 marks]

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Q1) Design a class for Bank. Bank Class should support following operations;

- a. Deposit a certain amount into an account
- b. Withdraw a certain amount from an account
- c. Return a Balance value specifying the amount with details

[10 marks]

Q2) Write a program to accept a text file from user and display the contents of a file in reverse order and change its case.

[20 marks]

Q3) Viva

[05 marks]

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Q1) Create a class Sphere, to calculate the volume and surface area of sphere.

(Hint : Surface area= $4 \times 3.14(r \times r)$, Volume= $(4/3)3.14(r \times r \times r)$)

[10 marks]

Q2) Design a screen to handle the Mouse Events such as MOUSE_MOVED
and MOUSE_CLICKED and display the position of the Mouse_Click in a TextField.

[20 marks]

Q3) Viva

[05 marks]

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Q1) Define a “Clock” class that does the following ;

- a. Accept Hours, Minutes and Seconds
- b. Check the validity of numbers
- c. Set the time to AM/PM mode

Use the necessary constructors and methods to do the above task

[10 marks]

Q2) Write a program to using marker interface create a class Product (product_id, product_name, product_cost, product_quantity) default and parameterized constructor. Create objects of class product and display the contents of each object and Also display the object count.

[20 marks]

Q3) Viva

[05 marks]

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Q1) Write a program to find the cube of given number using functional interface.

[10 marks]

Q2) Write a program to create a package name student. Define class StudentInfo with method to display information about student such as rollno, class, and percentage. Create another class StudentPer with method to find percentage of the student. Accept student details like rollno, name, class and marks of 6 subject from user.

[20 marks]

Q3) Viva

[05 marks]

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Q1) Define an interface “Operation” which has method volume(). Define a constant PI having a value 3.142 Create a class cylinder which implements this interface (members – radius,height). Create one object and calculate the volume.

[10 marks]

Q2) Write a program to accept the username and password from user if username and password are not same then raise "Invalid Password" with appropriate msg.

[20 marks]

Q3) Viva

[05 marks]

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Q1) Write a program to create parent class College(cno, cname, caddr) and derived class Department(dno, dname) from College. Write a necessary methods to display College details.

[10 marks]

Q2) Write a java program that works as a simple calculator. Use a grid layout to arrange buttons for the digits and for the +, -, *, % operations. Add a text field to display the result.

Simple Calculator			
<input style="width: 100%;" type="text"/>			
1	2	3	+
4	5	6	-
7	8	9	*
0	.	=	/

[20 marks]

Q3) Viva

[05 marks]

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Q1) Write a program to accept a file name from command prompt, if the file exists then display number of words and lines in that file.

[10 marks]

Q2) Write a program to display the system date and time in various formats shown below:

Current date is : 31/08/2021

Current date is : 08-31-2021

Current date is : Tuesday August 31 2021

Current date and time is : Fri August 31 15:25:59 IST 2021

Current date and time is : 31/08/21 15:25:59 PM +0530

[20 marks]

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[05 marks]

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Q1) Write a 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 (Use static keyword).

[10 marks]

Q2) Write a Java program to create a Package “SY” which has a class SYMarks (members – ComputerTotal, MathsTotal, and ElectronicsTotal). Create another package TY which has a class TYMarks (members – Theory, Practicals). Create ‘n’ objects of Student class (having rollNumber, name, SYMarks and TYMarks). Add the marks of SY and TY computer subjects and calculate the Grade (‘A’ for ≥ 70 , ‘B’ for ≥ 60 ‘C’ for ≥ 50 , Pass Class for ≥ 40 else ‘FAIL’) and display the result of the student in proper format.

[20 marks]

Q3) Viva

[05 marks]

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Q1) Accept the names of two files and copy the contents of the first to the second. First file having Book name and Author name in file.

[10 marks]

Q2) Write a program to define a class Account having members custname, accno. Define default and parameterized constructor. Create a subclass called SavingAccount with member savingbal, minbal. Create a derived class AccountDetail that extends the class SavingAccount with members, depositamt and withdrawamt. Write a appropriate method to display customer details.

[20 marks]

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[05 marks]

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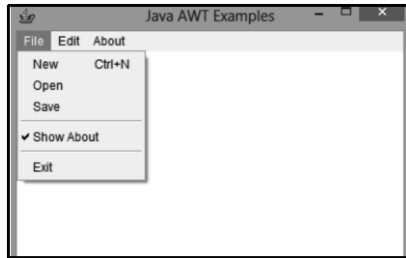
Duration: 3 Hours

Maximum Marks: 35

Q1) Write a program to find the Square of given number using function interface.

[10 marks]

Q2) Write a program to design a screen using Awt that,



[20 marks]

Q3) Viva

[05 marks]

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Maximum Marks: 35

Q1) Design a Super class Customer (name, phone-number). Derive a class Depositor(accno , balance) from Customer. Again, derive a class Borrower (loan-no, loan-amt) from Depositor. Write necessary member functions to read and display the details of 'n' customers.

[10 marks]

Q2) Write Java program to design three text boxes and two buttons using swing. Enter different strings in first and second textbox. On clicking the First command button, concatenation of two strings should be displayed in third text box and on clicking second command button, reverse of string should display in third text box

[20 marks]

Q3) Viva

[05 marks]

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Maximum Marks: 35

Q1) Write a program to implement Border Layout Manager.

[10 marks]

Q2) Define a class CricketPlayer (name,no_of_innings,no_of_times_notout, totatruns, bat_avg). Create an array of n player objects. Calculate the batting average for each player using static method avg(). Define a static sort method which sorts the array on the basis of average. Display the player details in sorted order.

[20 marks]

Q3) Viva

[05 marks]

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- Q1) Write a program to accept the two dimensional array from user and display sum of its diagonal elements. [10 marks]
- Q2) Write a program which shows the combo box which includes list of T.Y.B.Sc.(Comp. Sci) subjects. Display the selected subject in a text field. [20 marks]
- Q3) Viva [05 marks]

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Maximum Marks: 35

Q1) Write a Program to illustrate multilevel Inheritance such that country is inherited from continent. State is inherited from country. Display the place, state, country and continent.

[10 marks]

Q2) Write a package for Operation, which has two classes, Addition and Maximum. Addition has two methods add () and subtract (), which are used to add two integers and subtract two, float values respectively. Maximum has a method max () to display the maximum of two integers

[20 marks]

Q3) Viva

[05 marks]