

2023

COMPUTER SCIENCE — HONOURS — PRACTICAL

Paper : CC-12P

(OOPS Lab Using Java)

Full Marks : 30

Marks Distribution

Source Code	: 15
Output	: 05
Sessional	: 04
Viva voce	: 06

SET-1

Answer *any one* question.

1. Write a Java program to create a class 'Matrix' containing constructor that initializes the number of rows and number of columns of a new Matrix object. Write a member function Sum() that prints the sum of the elements of the matrix column wise.
2. Write a Java program to create a class point to represent a point in X-Y plane and add the method to perform the following tasks :
  - (a) Set the coordinate of a point using a constructor.
  - (b) Print the coordinate of a point.
  - (c) Print the quadrant number in which the point lies.
3. Design an interface called shape with methods draw() and getArea(). Further, design two classes Circle and Rectangle that implements shape to compute area of respective shapes. Write a Java program for the same.

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4. Write a program in Java to create your own exception as Negative Exception whenever negative values are put in an array.
  
  5. Develop a Java program for reading and displaying the content of a text file. Implement exception handling to address potential issues, such as file not found (FileNotFoundException) and IO errors.
  
  6. Develop a Java program for converting temperatures between Celsius and Fahrenheit. Implement exception handling to address potential issues, such as invalid temperature input (NumberFormatException) and invalid conversion choices (IllegalArgumentException).
  
  7. Create a Java program for user authentication. Users input a username and password, and the program validates the credentials. Implement exception handling to address potential issues, such as incorrect username or password (Authentication Exception) and null input (NullPointerException).
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