CHARUSAT
CSPIT, FTE
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Subject Name: Java Programming
Subject Code: EC373

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PART – I (Introduction of JAVA)	
1.	Write a program to display two messages in separate lines.
2.	Write a program to display a string with an embedded quote. For example: Shastri said:" Sachin has played a game of his Life."
3.	Write a program for calculating Fibonacci series.
4.	Write a program to add 2 nos.(without command line argument)
PART-II (Command line argument and loops concept)	
5.	Write a program to print second element of command line argument.
6.	Write a program to find out that the given no number is odd or even (pass argument in command line argument).
7.	Write a program in java to find the factorial of a given number (While loop).
8.	Write a program in java to find the largest among three numbers (if else statement).
9.	Write a program in java to swap two numbers without using auxiliary memory location (Using Bitwise XOR operation).
10.	Generate the following output, using the control statements learnt in the class: 1111 111 11 1
11.	Try a program to display in which season the month of April lies. Use the 'switch' statement. Hint: We have four seasons: Summer, Winter, Autumn and Spring. Months: 12, 1, 2 come in Winter. Months: 3, 4, 5 come in Spring. Months: 6, 7, 8 come in Summer. Months: 9, 10, 11 come in Autumn.
PART-III (Operators & typecasting)	
12.	Write a program to demonstrate the concept of the operators. (Arithmetic, logical, bitwise, ternary, relational)
13.	Demo of all type casting like integer to string, string to integer etc.
PART-IV (Array)	
14.	Demonstrate how to create and initialize different types of arrays like 1D, 2D and multidimensional.
15.	Write a program for sorting of integer numbers.
16.	Write a program that creates 2-D array with float values the first element should be an array containing -50.5, the second element should be an array containing 500.1 & 70.70, and the third element should be an array containing 100.9, 0.5 & 20.20. Declare, allocate & initialize the array. Also Display its length & elements.
17.	Write a program to multiply two matrices.(3 X 3)
18.	Write a program to demonstrate StringBuffer and StringTokenizer class with different methods.

	PART-V (Class)
19.	Write an application that declares a class named person. It should have instance variables to record name, age & salary. This should be of type's string, integer & float. Use the new operator to create a person object. Set & display its instance variable.
20.	Implement the prog.1 using constructor.
21.	Write an application that define a circle class with 2 constructors the first form excepts a double value that represents the radius of a circle, this constructor assumes that circle is centered at the origin. The second form accepts 3 double values, the first 2 arguments define the coordinates of the center & third argument define the radius. Also declare one member function which calculates an area of a circle.
22.	Create a stack class. Define two methods push and pop that insert elements in the stack and remove the elements from the stack respectively.
23.	Create a program that shows pass by value and pass by reference concept in class.
24.	Create a program that shows use of static, this keyword.
	PART-VI (Inheritance)
25.	Create a base class called shape. Use this class to store two double type 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.
26.	Override the method 'area()', in the class 'Figure' for the following geometric shapes triangle and square.
27.	Use the concept of abstract classes, where the method area() is declared as abstract in the class 'Figure'.
28.	Create a program with an abstract class named 'Test'. Which contains two methods named 'callme()' and 'callmetoo()'. Declare the method 'callme' as abstract and let the methods 'callmetoo()' have a body that is a simple message. Derive a subclass 'Test2' from the abstract class 'Test' which implements the methods 'callme()'. Let the object of the subclass 'Test2' calls the two methods. Analyse which version of the method 'callme()' is executed.
29.	Write a java program which explains the concept of super keyword.
30.	Write a program to do the find out the average of 4 different variables which has been declared and initialized in separate class. Using multilevel inheritance.
	PART-VII (Package & Interface)
31.	Write a program that illustrates interface inheritance. Interface K1 declares method mK and a variable integer variable that is initialized to 1. Interface K2 extend K1 & declares mK. Interface K3 extends K2 & declares mK. The return type of mK is void in all interfaces. Class U implements K3. Its version of mK displays value of integer variable. Instantiate U & invoke its method.
32.	Write a program to find out the area of square and circle using interface. Where you have to take two classes for circle and rectangle and one interface.
33.	Write a java program which shows importing of classes from other user define packages.
34.	Write a program that demonstrates use of packages & import statements. (Simple addition program)
	PART-VIII (Exception Handling)
35.	WAP to show the try - catch block to catch the different types of exception.
36.	WAP to generate user defined exception using "throw" and "throws" keyword.
37.	Write a program that raises two exceptions. Specify two 'catch' clauses for the two exceptions. Each 'catch' block handles a different type of exception. For example the exception could be 'ArithmeticException' and 'ArrayIndexOutOfBoundsException'. Display a message in the 'finally' block.
	PART-X (Multithreading)
38.	Write a program to create thread which display "Hello World" message. A. by extending Thread class B. by using Runnable interface.
39.	Write a program to perform addition of 1to 100 numbers using 4 threads.

40.	Write a program to increment the value of one variable by one and display it after one second using thread using sleep() method.
41.	Write a program to create three threads ‘FIRST’, ‘SECOND’, ‘THIRD’. Set the priority of the ‘FIRST’ thread to 3, the ‘SECOND’ thread to 5(default) and the ‘THIRD’ thread to 7.
42.	WAP to show the use of Synchronized keyword/ synchronized methods.