Darshan Institute of Computer Application
MCA | Sem-1 | Winter-2023

Course Code	: 2305CS102	**Date**	:	11-12-2023
Course Name	: Object Oriented Programming using Java	**Duration**	:	150 Minutes
		Total Marks	:	70

Instructions:
1. Attempt all the questions.
2. Figures to the right indicates maximum marks.
3. Make suitable assumptions wherever necessary.

Q.1	**(A)**	Explain Operators Precedence and Associativity in java with example.	**4**
	(B)	Illustrate a java program to do sum of command line argument passed as two float numbers.	**3**

<div align="center">OR</div>

What is extension of bytecode? Compare JVM, JRE and JDK.

	(C)	Implement a Java Program to find largest element in a user defined 1D array.	**7**

<div align="center">OR</div>

Implement a Java program to accept a line and print how many consonants and vowels are there in line.

Q.2	**(A)**	Explain Constructor overloading with appropriate example in Java.	**4**
	(B)	Define Encapsulation with real world example.	**3**

<div align="center">OR</div>

State why we declare main method as 'static'? Write a program to declare user-defined static method and call it with class reference.

	(C)	Implement an anonymous inner class in java with example program.	**7**

<div align="center">OR</div>

Implement a copy constructor with example program.

Q.3	**(A)**	Compare Method Overloading and Method Overriding with appropriate example.	**4**
	(B)	Explain three uses of final keyword with appropriate example.	**3**

<div align="center">OR</div>

What is Abstract class? Explain Abstract class with appropriate example.

	(C)	Explain Dynamic Method dispatch with appropriate example.	**7**

<div align="center">OR</div>

Implement a program to implement stack interface with push() and pop() methods. Class MyStack will implement stack interface and will implement both its method. Here main class will create two different stack of size 5 and 10 elements respectively.

Q.4 **(A)** Explain thread synchronization with appropriate example. **4**

(B) Compare checked and unchecked exception and give example of both. **3**

OR

Explain the use of Package. Write a program to create a custom package and import it into a class.

(C) Explain life cycle of thread. Implement a program to create Multithreading using Runnable interface. **7**

OR

Implement a class named Bank_Account and constructor to intailize balance, with data memebers accountNo and accountBalance, also create methods displayBalance(), deposit() and withdraw().Maintain minimum balance of 1000/-Rs. and throw an Exception if balance becomes less than 1000/-Rs.

Q.5 **(A)** Explain File Input Stream and File Output Stream in java with examples. **4**

(B) What is collection in java? Describe about collection class in java. **3**

OR

List out methods of Iterator and explain it.

(C) Implement a program illustrating following framework. a)Array List b)Vector **7**

OR

Implement a program to replace all "word1" by "word2" from a file1, and output is written to file2 file and display the no. of replacement.

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