

JAMIA HAMDARD
Department of Computer Science & Engineering
School of Engineering Sciences & Technology
New Delhi – 110062

Examination: Even Semester Examination 2023

Sub: Programming in Java

Sub. Code: BTCSE MOOCS 2

Max. Time: 3 hours

Max. Marks: 75

Note: Follow proper numbering for answering the questions.

CO1 - Overview of Object-Oriented Programming and Java, Java Programming Elements and Input-Output Handling in Java.

CO2 – Encapsulation, inheritance and Exception Handling.

CO3 - Multithreaded Programming, Java Applets and Servlets and Java Swing and Abstract Windowing Toolkit (AWT).

CO4 - Networking with Java, Java Object Database Connectivity (ODBC) and Interface and Packages for Software Development.

BL – Bloom's Taxonomy Levels (1 – Remembering, 2 – Understanding, 3 – Applying, 4 – Analyzing, 5 – Evaluating, 6 – Creating)

SECTION – A

Attempt all questions.

7 x 5 = 35 Marks

SL. NO	Questions	Marks	CO	BL
1.	Discuss how Java is an object oriented programming language.	5	CO1	L1
2.	Explain constructor overloading with code example.	5	CO1	L2
3.	Create a class "Student" that has name, enrollment number and address as three fields. Follow encapsulation and data-hiding.	5	CO2	L6
4.	What is inheritance in java? Assume a class "Animal" with methods eat() and waveTail(). Explain inheritance by giving the code of the "Animal" class and of the "Dog" as its derived class.	5	CO2	L1 L3
5.	Describe Java Applet life cycle with a suitable diagram	5	CO3	L2
6.	Discuss the various components of AWT.	5	CO3	L2
7.	Write a short note on Java Object Database connectivity.	5	CO4	L2

SECTION – B

Attempt any four out of six questions.

4 x 10 = 40 Marks

SL. NO	Questions	Marks	CO	BL
1.	Explain how platform-independence in java is achieved. Explain with the help of proper diagram.	10	CO1	L2
2.	What is an abstract class? Explain multilevel inheritance with the help of abstract class in your program.	10	CO2	L2

3.	A. What is an exception? Explain how an exception can be handled in Java? B. Define an exception called "NotEqualException" that is thrown when a float value is not equal to 3.14. Write a Java program that uses the above user-defined exception.	10	CO2	L2 L6
4.	Explain the two ways to create a thread in java with code examples. Also, discuss the life cycle of a thread with suitable diagram.	10	CO3	L2
5.	Differentiate the following: i. Java Applet vs Java Servlet ii. Java Swing vs AWT	10	CO3	L2
6.	Design an interface called Shape with methods draw() and getArea(). Further design two classes called Circle and Rectangle that implements Shape to compute area of respective shapes. Use appropriate getter and setter methods. Write a Java program for the same	10	CO4	L3 L5
