

BACHELOR OF COMPUTER APPLICATIONS (BCA)

(Revised Syllabus)

BCA(Revised Syllabus)/ASSIGN/SEMESTER-IV

ASSIGNMENTS

(July – 2026 & January - 2027)

**(BCS-040, MCS-024, BCS-041, BCS-042,
MCSL-016, BCSL-043, BCSL-044, BCSL-045)**



**SCHOOL OF COMPUTER AND INFORMATION SCIENCES
INDIRA GANDHI NATIONAL OPEN UNIVERSITY
MAIDAN GARHI, NEW DELHI – 110 068**

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Important Notes

1. Submit your assignments to the Coordinator of your Study Centre on or before the due date.
2. Assignment submission before due dates is compulsory to become eligible for appearing in corresponding Term End Examinations. For further details, please refer to BCA Programme Guide.
3. To become eligible for appearing the Term End Practical Examination for the lab courses, it is essential to fulfill the minimum attendance requirements as well as submission of assignments (on or before the due date). For further details, please refer to the BCA Programme Guide.

Course Code	:	BCSL-043
Title	:	Java Programming Lab
Assignment Number	:	BCA(IV)/L-043/Assignment/2026-27
Maximum Marks	:	50
Last date of Submission	:	31st October, 2026 (for July 2026 Session)
	:	30th April, 2027 (for January 2027 Session)

This assignment has two questions. Answer all the questions. These questions carry 40 marks. Rest 10 marks are for viva voce. You are advised to give proper comments and do proper alignments while writing program. Please go through the guidelines regarding the assignments given in the programme guide for the format of presentation.

Q1:

- (a)** Write a Java program to perform multiplication of two matrices. Define appropriate classes, constructors, and methods to perform matrix multiplication operations. Include necessary validations to check if matrix multiplication is possible. **(10 Marks)**
- (b)** Write a Java program that takes the account balance and withdrawal amount for a bank customer as input and processes the transaction. Define proper class, methods and constructor in your program. Implement custom exception handling for the following scenarios: **(10 Marks)**
 - i. The withdrawal amount is negative or zero.
 - ii. The withdrawal amount exceeds the current balance (Insufficient Funds).
 - iii. The remaining balance after withdrawal falls below the mandatory minimum balance requirement of Rs. 1,0000/-.

Q2:

- (a)** Write a Java program that accepts text input from the user via the console and writes it to a file. Then, read the contents back from the file, count the total number of words present, and display the result on the screen. Implement proper exception handling for all File I/O operations. **(10 Marks)**
- (b)** Create a Java Applet using appropriate GUI components that accepts an integer from the user and calculates its square upon clicking a button. Use appropriate UI components such as labels, text fields, buttons and proper layout managers, and input validation to handle non-numeric or out-of-range inputs. **(10 Marks)**