BACHELOR OF COMPUTER APPLICATIONS (BCA_NEW/BCAOL)

ASSIGNMENTS OF BCA_NEW/BCAOL PROGRAMME SEMESTER-V

(July 2026 & January 2027 Session)

BCS-151, BCS-042, BCSL-159, BCOS-184, MSEI-023, BECS-184

SCHOOLOFCOMPUTERANDINFORMATIONSCIENCES
INDIRA GANDHI NATIONAL OPEN UNIVERSITY
MAIDAN GARHI, NEW DELHI – 110 068

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Important Notes

1. BCA_NEW Student need to submit the assignments to the Coordinator of your Study Centre on or before the due date.
2. BCAOL Student need to submit the assignments on LMS Portal on or before the due date.
3. Assignment submission before due dates is compulsory to become eligible for appearing in corresponding Term End Examinations. For further details, please refer to Programme Guide.
4. 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 Programme Guide.
5. The viva voce is compulsory for the assignments. For any course, if a student submitted the assignment and not attended the viva-voce, then the assignment is treated as not successfully completed and would be marked as ZERO.

Course Code	**:**	**BCSL-159**
Course Title	**:**	**Introduction to Algorithm Design Lab**
Assignment Number	**:**	**BCA_NEW/BCAOL(V)L-159/Assign/2026-27**
Maximum Marks	**:**	**100**
Last Date of Submission	**:**	**31st October, 2026 (For July 2026 Session)**
	:	**30th April, 2027 (For January 2027 Session)**

There are 8 questions of 10 marks each in this assignment, carrying a total of 80 marks. The remaining 20 marks are for viva voce. Please go through the guidelines regarding assignments given in the Programme Guide for the format of the presentation. Write all the programs in the C' language.

Q1: Write a C program to generate the Fibonacci sequence using recursion. **(10 Marks)**

Q2: Write a recursive C program to solve the Tower of Hanoi problem. Also, analyse its time complexity. **(10 Marks)**

Q3: Write a C program to evaluate a polynomial efficiently using Horner's method. **(10 Marks)**

Q4: Write a C program to multiply two n×n matrices using nested loops. **(10 Marks)**

Q5: Write a C program to solve the Fractional Knapsack problem and maximise the total profit using a greedy approach. **(10 Marks)**

Q6: Write a C program to construct a Huffman tree and generate the corresponding Huffman codes. **(10 Marks)**

Q7: Write a recursive C program to perform large integer multiplication using the Karatsuba multiplication algorithm. **(10 Marks)**

Q8: Write a C program to detect a cycle in an undirected graph. **(10 Marks)**