BRIDGE COURSES FOR
MASTER OF
COMPUTER APPLICATIONS
(MCA_NEW)

ASSIGNMENTS

(January - 2025)

MCS-201 and MCS-208

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 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 Programme Guide.

4. 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   :   MCS-208

Course Code	:	MCS-208
Course Title	:	Data Structures and Algorithms
Assignment Number	:	PGDCA_NEW(II)/208/Assign/2025
Maximum Marks	:	100
Weightage	:	25%
Last Dates for Submission	:	30ᵗʰApril 2025 (for January Session)

There are four questions in this assignment, which carry 80 marks. Each question carries 20 marks. Rest 20 marks are for viva voce. All algorithms should be written nearer to C programming language. You may use illustrations and diagrams to enhance the explanation, if necessary. Please go through the guidelines regarding assignments given in the Programme Guide for the format of presentation.

Q1: What is a Doubly Linked Circular List? What are its advantages and disadvantages? Give a scenario where its application is appropriate. Justify your answer. **(20 Marks)**

Q2: What is a Tree? How does it differ from a Binary Tree? Is it possible to convert a Tree to a Binary Tree? If yes, then, explain the process with an example. **(20 Marks)**

Q3: What are Red Black Trees? How do they differ from Splay Trees? What are their applications? **(20 Marks)**

Q4: Write a short note on the recent developments in the area of finding shortest path between two nodes of a Graph. Make necessary assumptions. **(20 Marks)**