MASTER OF COMPUTER APPLICATIONS (MCA_NEW)

(July - 2025 & January - 2026)

MCS-218, MCS-219, MCS-220, MCS-221

MCSL-222, MCSL-223

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

CONTENTS

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 of MCA (2Yrs).

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 of MCA (2yrs).

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-219
Course Title	:	Object Oriented Analysis and Design
Assignment Number	:	MCA_NEW(II)/219/Assign/2025-26
Maximum Marks	:	100
Weightage	:	30%
Last date of Submission	:	31st October, 2025 (For July, 2025 Session)
		15th April, 2026 (For January, 2026 Session)

Note: This assignment has eight questions of 80 Marks. Answer all questions. Rest 20 marks are for viva voce. You may use illustrations and diagrams to enhance the explanations. Please go through the guidelines regarding assignments given in the Programme Guide for the formatof presentation.

Q1: What is OOAD? Explain basic constructs of object orientation. **(10 Marks)**

Q2: Draw class diagram for Online Banking System. Make necessary assumptions. **(10 Marks)**

Q3: What is object modeling, dynamic modeling and functional modeling? Briefly explain the diagrams used in these modeling. **(10 Marks)**

Q4: Draw state diagrams for: **(10 Marks)**

  (i)   Online Banking System

  (ii) Online Examination System

Q5: What is an abstract class? Explain concepts of aggregation, generalization and specialization with the help of suitable example. **(10 Marks)**

Q6: Explain design optimization? Also, explain need of design documentation. What are features of a good design document? **(10 Marks)**

Q7: Map the object classes created in Question 2 above into database tables. **(10 Marks)**
Note: Make necessary assumptions.

Q8: Write short notes on the following: **(10 Marks)**

  (i)   Associations and its Implementation

  (ii) Implementation of Controls