

CERTIFICATE IN MOBILE APPLICATION DEVELOPMENT (CMAD)

Assignments

(January, 2025 & July, 2025 sessions)

BCS-091, BCS-092, BCS-093, BCS-094, BCSL-091

Assignments



**SCHOOL OF COMPUTER AND INFORMATION SCIENCES
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CONTENTS

Course Code	Assignment No.	Submission-Schedule		Page No.
		For January-June Session	For July-December Session	
BCS-091	CMAD/091/Assignment /2025	30 th April, 2025	30 th October, 2025	3
BCS-092	CMAD/092/Assignment /2025	30 th April, 2025	30 th October, 2025	4
BCS-093	CMAD/093/Assignment /2025	30 th April, 2025	30 th October, 2025	5
BCS-094	CMAD/094/Assignment /2025	30 th April, 2025	30 th October, 2025	6
BCSL-091	CMAD/L-091/Assignment /2025	30 th April, 2025	30 th October, 2025	7

Important Notes

1. Submit your assignments to the Coordinator of your Study Centre on or before the due date. Please refer to <http://www.ignou.ac.in> for latest updates
2. Assignment submission before due dates is compulsory to become eligible for appearing in corresponding Term End Examinations. For further details, please refer to CMAD 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 CMAD Programme Guide.

Course Code	:	BCS-092
Course Title	:	Introduction to Databases
Assignment Number	:	CMAD/092/Assignment /2025
Maximum Marks	:	25
Last Dates for Submission	:	30th April, 2025 (for January session) 30th October, 2025 (for July session)

This assignment has six questions, carrying a total of 25 marks. Answer all questions. You may use illustrations and diagrams to enhance your explanations. Please go through the guidelines regarding assignments given in the Programme Guide for the presentation format. The answer to each part of the question should be confined to about 300 words.

Question 1: (5 Marks)

Design an ER diagram for a departmental Store. This store sells many products. The store keeps multiple quantities of these products. Each product is uniquely identified by a Product ID. In addition, the store maintains the Product Name, Price, Quantity in stock, Date of production, and Date of expiry of each product. The store sells these products to registered customers of the store. The store maintains the Customer ID, Name, Postal Address with City and Pin code, and Phone number of every customer. All the orders made by different customers are recorded in an order table. An order may consist of many products.

Identify and list the entities, attributes, relationships, cardinality, and key constraints for the description of the store given above. Make and state suitable assumptions.

Question 2: (8 Marks)

Design the Relational Schema for the E-R diagram you drew for *Question 1*. The relations must be at least in 3NF. Perform the following tasks using these relations:

- Identify the domain of the attributes.
- Identify the Primary key of every relation.
- Identify the Foreign keys and referential integrity constraints in the relations.
- Create the tables with keys and constraints and enter about five sets of meaningful data in each relation.

Question 3: (10 Marks)

Answer the following queries using SQL for the database created in *Question 2*.

- List the names of all the customers whose names start with the alphabet "A".
- List the Product name of all the products whose price is over INR 5000.
- Find the list of products whose quantity in stock is less than 5.
- List all orders made by a customer whose ID is "C001".
- Find the total amount of order of Order ID "O00001".
- List the name of the customers who have Ordered at least once.
- Find the number of orders given by each customer.
- Find the total number of products in the store.
- List the product that has been ordered the most.
- Find the total number of customers of the store.

Note: Make suitable assumptions, if any.

Question 4: (2 Marks)

Explain the logical design phase of database development of an organisation.