

R.N.G.PATEL INSTITUTE OF TECHNOLOGY-RNGPIT
(An Autonomous College U/s UGC Act 1956)

IMBA. SEMESTER-II, SEMESTER END EXAMINATION – SUMMER 2025

Subject Code: 1BB0205**Date: 15-05-2025****Subject Name: DATABASE MANAGEMENT SYSTEM****Time: 11:00 AM to 01:30 PM****Total Marks: 70****Instructions**

1. It is **compulsory** for students to write **Enrolment No. /Seat No.** on the question paper.
2. Write answers of **Section A** and **Section B** in **separate answer books**.
3. Attempt all questions from both **Section A** and **Section B**.
4. Each section carries **35 marks**, with a total of **70 marks** for the examination.
5. The figures to the right of each question indicate full marks, make suitable assumptions with justification.
6. BL - Bloom's Taxonomy Levels (R-Remember, U-Understanding, A –Application, N –Analyze, E – Evaluate, C -Create), CO - Course Outcomes.

SECTION A

	Marks	BL	CO
Q.1 Multiple-Choice Questions	[05]		
(a) In an ER diagram, an entity is represented by:	1	R	2
(i) Ellipse			
(ii) Diamond			
(iii) Rectangle			
(iv) Line			
(b) A primary key is used to:	1	U	2
(i) Create tables			
(ii) Uniquely identify a record			
(iii) Sort records alphabetically			
(iv) Convert ER to table			
(c) In an ER diagram, an attribute is represented by which shape?	1	R	2
(i) Rectangle			
(ii) Oval			
(iii) Diamond			
(iv) Triangle			
(d) What is a database schema?	1	U	1
(i) Actual stored data in the table			
(ii) A logical design of the database structure			
(iii) Data mining process			
(iv) A file system layout			

(e) What is the current state of data stored in a database called?	1	R	1
(i) Schema			
(ii) Table			
(iii) Instance			
(iv) View			

Q.2 Attempt Any Two	[10]		
(a) Explain Types of Database in DBMS.	5	U	1
(b) What are the applications of databases in business?	5	U	1
(c) Draw ER diagram of Online Shopping Store from Below Entities & Attributes.	5	C	2

Customer (CustomerID, Name, Email, Phone, Address, Password)**Product** (ProductID, Name, Description, Price, Stock, CategoryID)**Category** (CategoryID, Name, Description)**Order** (OrderID, CustomerID, OrderDate, TotalAmount, Status)**OrderDetails** (OrderDetailID, OrderID, ProductID, Quantity, Subtotal)**Payment** (PaymentID, OrderID, PaymentMethod, PaymentDate, Amount, Status)

(*Add Foreign Key, Primary Key & Relationship in This Diagram.)

Q.3 Attempt Any Two	[10]		
(a) Define Data, Information, and Knowledge in the context of DBMS. Provide examples to illustrate their differences.	5	U	1
(b) What is ER Diagram, Why Use ER diagram in DBMS. Write down Components of ER Diagram.	5	U	2
(c) Draw ER diagram of Online Book Store with Entities and Attributes and Relationship.	5	C	2

Q.4 Attempt Any Two	[10]		
(a) Explain Database Concepts: DBMS, Schema, and Instances.	5	U	1
(b) Differentiate between a File System and a DBMS	5	A	1
(c) Draw ER diagram of School Database Management System. With Entities and Attributes. (At least 4 Entities, Primary Key must Required, Foreign Key & Relationship)	5	C	2

SECTION B

	Marks	BL	CO
Q.5 Multiple-Choice Questions	[05]		
(a) SQL stands for	1	1	3
(i) Structured Query Language (ii) Simple Query Language			
(iii) Sequential Query Language (iv) Systematic Query Language			
(b) Which of the following is a DDL command?	1	1	3
(i) INSERT (ii) CREATE			
(iii) SELECT (iv) UPDATE			
(c) In database security, authentication is related to:	1	1	4
(i) Data backup (ii) User Verification			
(iii) Query optimization (iv) Data encryption			
(d) What problem arises due to concurrent transactions?	1	1	4
(i) Data replication (ii) Deadlock			
(iii) Data backup (iv) Query execution			
(e) A successful backup strategy primarily aims at:	1	1	4
(i) Faster queries (ii) Secure user authentication			
(iii) Data recovery (iv) Query optimization			
Q.6 Attempt Any Two	[10]		
(a) Explain the types of SQL commands with examples.	5	2	3
(b) Differentiate between INNER JOIN and OUTER JOIN with suitable examples.	5	3	3
(c) Write an SQL query to create a table “Student” with fields Roll_No, Name, Age, and Marks. Alter the table to add the field “Grade.”	5	2	3
Q.7 Attempt Any Two	[10]		
(a) Discuss Authentication and Authorization mechanisms in database security with examples.	5	2	4
(b) Explain ACID properties with suitable illustrations.	5	2	4
(c) What is concurrency control? How do deadlocks occur and how are they managed?	5	3	4

Q.8 Attempt Any Two	[10]		
(a) Write short notes on the importance of Backup and Recovery techniques.	5	2	4
(b) Explain the different types of JOINS in SQL with examples.	5	2	3
(c) What are aggregate functions? Explain COUNT(), SUM(), AVG() with examples.	5	3	2
