

**DATABASE MANAGEMENT SYSTEM (25CY305)****UNIT-III**

S. No	Questions	BT	CO	PO
Part –A(Short Answer Questions)				
1	Define the Relational Model in DBMS?	L1	CO3	PO5
2	What is meant by the basic structure of a relational database?	L2	CO3	PO1
3	Define database schema and distinguish it from database instance?	L2	CO3	PO5
4	List the fundamental operations of Relational Algebra?	L1	CO3	PO5
5	What is Relational Calculus? Mention its types?	L1	CO3	PO1
6	Explain the concept of file organization in databases?	L2	CO3	PO2
7	List the different types of file organizations used in DBMS?	L1	CO3	PO1
8	What is an index? State its purpose in a database system?	L2	CO3	PO4
9	Differentiate between tree-structured indexing and hash-based indexing?	L4	CO3	PO3
10	Explain the role of B+-tree indexes in database systems?	L2	CO3	PO1
Part– B(Long Answer Questions)				
11	a) Explain the Relational Model and discuss its basic structure with suitable examples?	L2	CO3	PO1
	b) Compare and contrast database schema and database instance with examples?	L4	CO2	PO5
12	a) Describe the various operations of Relational Algebra with suitable examples?	L2	CO3	PO2
	b) Solve database queries using Relational Algebra expressions for a given relation schema?	L3	CO3	PO1
13	a) Explain Relational Calculus and distinguish between Tuple Relational Calculus (TRC) and Domain Relational Calculus (DRC)?	L4	CO3	PO1
	b) Discuss different types of file organizations and analyze their advantages and disadvantages.	L4	CO3	PO5
14	a) Explain the concept of indexing in DBMS and discuss the need for indexes in query processing.	L2	CO3	PO2
	b) Compare various types of indexes such as primary, secondary, clustered, and non-clustered indexes with examples	L4	CO3	PO1
15	a) Explain tree-structured indexing using B-tree and B+-tree with neat diagrams?	L2	CO3	PO1
	b) Compare tree-based indexing and hash-based indexing, highlighting their advantages, disadvantages, and applications?	L4	CO3	PO1