

DATABASE MANAGEMENT SYSTEM (25CS305)

Unit Wise Question Bank

UNIT-IV

S.No	Questions	BT	CO	PO
Part –A(Short Answer Questions)				
1	Define schema refinement in DBMS?	L1	CO4	PO1
2	What is decomposition? Why is it required in database design??	L2	CO4	PO1
3	State the properties of a good decomposition?	L1	CO4	PO2
4	Define Functional Dependency (FD) with an example?	L1	CO4	PO3
5	What is meant by trivial functional dependency?	L2	CO4	PO1
6	State Armstrong's axioms used for reasoning about functional dependencies?	L1	CO4	PO2
7	Define First Normal Form (1NF) with an example.?	L2	CO4	PO2
8	Differentiate between 2NF and 3NF?	L4	CO4	PO1
9	What is Boyce-Codd Normal Form (BCNF)?	L2	CO4	PO1
10	Define Fourth Normal Form (4NF) and Fifth Normal Form (5NF)?	L1	CO4	PO1
Part– B(Long Answer Questions)				
11	a) Explain the concept of schema refinement and discuss its importance in relational database design.	L2	CO4	PO1
	b) Discuss the properties of decomposition, namely lossless join decomposition and dependency preservation, with suitable examples?	L4	CO4	PO1
12	a) Explain functional dependencies and illustrate different types of functional dependencies with examples?	L2	CO4	PO1
	b) Describe Armstrong's axioms and explain how they are used for reasoning about functional dependencies?	L3	CO4	PO4
13	a) Given a set of functional dependencies, determine the closure of attributes and identify candidate keys?	L3	CO4	PO2
	b) Explain the process of normalization and discuss the significance of normalization in database design?	L2	CO4	PO3
14	a) Analyze a relation and convert it into First Normal Form (1NF), Second Normal Form (2NF), and Third Normal Form (3NF)?	L4	CO4	PO5
	b) Compare and contrast Third Normal Form (3NF) and Boyce-Codd Normal Form (BCNF) with suitable examples?	L4	CO4	PO1
15	a) Explain Fourth Normal Form (4NF) and Fifth Normal Form (5NF) with examples and discuss their role in eliminating redundancy?	L2	CO4	PO6
	b) Design a normalized database schema for a given application by applying normalization techniques up to BCNF or higher normal forms?	L6	CO4	PO2