

Satyug Darshan Institute of Technology, Faridabad	
Programme: BCA	Year :2nd Semester:3rd
Subject Name : Database Management System	Subject Code:BCG-202-V
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Unit -1

Short Questions

S. No.	Questions	Bloom Taxonomy
1	Define database and DBMS.	K1
2	Differentiate between data and information.	K2
3	List the advantages of dbms approach over file based system approach	K1
4	Discuss DDL,DML And DCL	K2
5	Define data dictionary and metadata.	K1
6	Discuss the difference between schema and instance.	K4
7	Define data independence?	K1
8	Define subschema.	K1
9	List out any 2 responsibilities of DBA	K1
10	State the role of Database Designer	K1

Long Questions

1	Explain the purpose, advantages, and disadvantages of a DBMS.	K2
2	Discuss the components of DBMS with a neat diagram.	K2
3	Explain data independence and its types.	K2
4	Discuss the different types of database users.	K2
5	Discuss the three-schema architecture of DBMS with suitable diagram.	K2
6	Discuss the need data independence and describe its two types.	K2
7	Compare and contrast hierarchical, network, and relational data models with suitable diagrams.	K4
8	Compare Two-Tier and Three-Tier DBMS architectures.	K4
9	Discuss the main components of DBMS environment .How do they interact to manage and retrieve the data efficiently	K2

Unit -2

Short Questions

S. No.	Questions	Bloom Taxonomy
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1	State the properties of Relation.	K1
2	Define Cardinality.	K1
3	Define entity and attribute.	K1
4	Define Degree of a relation.	K1
5	key,Candidate key,alternate key, Foreign	K2
6	State what is a domain in relational model?	K1
7	Define relationship set.	K1
8	What is integrity constraint?	K4
9	Define weak entity and strong entity set.	K1
10	Define entity type and entity set.	K1
Long Questions		
1	Explain integrity constraints: entity integrity, referential integrity, domain constraint, and key constraint with examples.	K2
2	Design an ER diagram for a real-world application and convert it into relational tables using ER-to-relational mapping rules.	K4
3	Compare and contrast network data model with hierarchical data model using suitable diagram	K2
4	Explain the concept of keys and integrity constraints in relational database. Why are they important for maintaining data consistency.	K2
5	Discuss the concept of abstraction and integration in ER Model.	K2
Unit -3		
Short Questions		
S. No.	Questions	Bloom Taxonomy
1	Define relational algebra.	K1
2	State the difference between relational algebra and relational calculus	K1
3	List unary relational operations.	K1
4	Discuss the use of group by clause with suitable example.	K2
5	Discuss the division operation.	K2
Long Questions		
1	Explain various operations of relational algebra with suitable examples.	K2
2	Explain tuple and domain relational calculus with examples.	K2

3	Differentiate between relational algebra and relational calculus.	K4
4	Consider the following schema: Student(name, roll no(PK), class,department) Course (course-name, course-number(PK),credit-hrs,dept) Section(sec-id(PK), course-no,semester,year,instructor) Grade_report (rollnum ,section-id(PK),grade) Specify the following queries in relational algebra: i) Retrieve the names of all courses taught by 'prof XYZ' IN 1998 and 1999. ii) Retrive the names and departments of all grade 'A' student. iii) Retrieve the names and departments of all students who have either grade 'A' or are enrolled in a course with a number 101..	K2
5	Consider the following relational schema :Doctor(Dname,Reg_no) Patient(Pname,Disease) Assigned to(Pname,Dname) Give in for each of the following queries: a) Get the names of patients who are assigned to more than one doctor.b) Get the names of doctors who are treating patients with Polio.	K2
Unit -4		
Short Questions		
S. No.	Questions	Bloom Taxonomy
1	Define database security	K1
2	Define concurrency . What are the advantages and disadvantages of concurrency.	K1
3	Differentiate between Authentication and Authorization.	K4
4	Define functional dependency.	K1
5	State the properties of 2NF	K1
6	Define anomalies in relational database.	K1
7	Explain query optimization in dbms.	K2
8	Write an algorithm to find minimal cover for as set of FD's.	K2
9	Discuss why armstrong's inference rules are called sound and complete.	K2
10	Discuss the use of views in SQL	K2
Long Questions		

1	Explain the steps that are involved in processing a query with suitable diagram.	K2
2	Explain the need for normalization and discuss different normal forms (1NF to 5NF) with examples.	K2
3	Consider a relation R(A, B, C, D, E) with the following set of functional dependencies $A \rightarrow B, BC \rightarrow D, D \rightarrow E, E \rightarrow A$. Find all the candidate keys of relation R using the closure method.	K2
4	Define database recovery, Explain the concept of Immediate Update Recovery technique And Deffered Recovery technique.	K2
5	Discuss the architecture of distributed database.Explain the different data storage mechanism in Distributed Databases.	K2
6	Differentiate between distributed databaases and parallel databases.	K4