

Total No. of Questions: 6

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Enrollment No.....



Faculty of Engineering
End Sem (Odd) Examination Dec-2022
CA5CO36 Advanced DBMS

Programme: MCA/ BCA- Branch/Specialisation: Computer
MCA (Integrated) Application

Duration: 3 Hrs.

Maximum Marks: 60

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

- Q.1 i. Which of the following is not a level of data abstraction? **1**
(a) Physical level (b) Critical level
(c) Logical level (d) View level
- ii. In an entity-relationship diagram “diamonds” represents- **1**
(a) Attributes (b) Multi-valued attributes
(c) Weak entity set (d) Relationship sets
- iii. Which of the following is based on multi valued dependency? **1**
(a) First normal form (b) Second normal form
(c) Third normal form (d) Fourth normal form
- iv. Which of the following is a type of functional dependency? **1**
(a) Trivial functional dependency
(b) Non-trivial functional dependency
(c) Both (a) and (b)
(d) None of these
- v. The process of finding a good strategy for processing a query is **1**
called-
(a) Query optimization (b) Query processing
(c) Query management (d) Query cost
- vi. If the results of one operation are passed on to the other, it is **1**
called as-
(a) Chain (b) Pipeline
(c) Materialized (d) Tree

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- vii. Which of the following is not one of the stages in the evolution of distributed DBMS? **1**
 (a) Unit of work (b) Remote unit of work
 (c) Distributed unit of work (d) Distributed request
- viii. Some of the columns of a relation are at different sites is which of the following? **1**
 (a) Data replication (b) Horizontal partitioning
 (c) Vertical partitioning (d) Both (b) and (c)
- ix. Which of the following are the examples of ORDBMS? **1**
 (a) PostgreSQL (b) Oracle database
 (c) Informix (d) All of these
- x. ORDBMS is the data model in which data is stored in form of- **1**
 (a) Entity (b) Class (c) Tree (d) Objects
- Q.2 i. Explain foreign key and its importance. **2**
 ii. Tell the major responsibilities of a data base administrator. **3**
 iii. Illustrate the various components of DBMS? Discuss the overall system architecture of DBMS with a neat diagram. **5**
- OR iv. List the summary of the notations for ER diagrams. Include symbols used in ER diagram and their meaning. **5**
- Q.3 i. Summarize the primary goal of normalization. **2**
 ii. Describe normal form. Explain about various normal forms with examples. **8**
- OR iii. What is functional dependency? Explain types and properties of FD's. **8**
- Q.4 i. Describe three techniques commonly used when developing algorithms for relational operators. **3**
 ii. Define query optimization. State the need of query optimization. **7**
- OR iii. What do you understand by pipeline evaluation? Describe the advantages of pipelining. **7**
- Q.5 i. Draw and explain the architecture of parallel database. **4**
 ii. Write a detailed note on distributed databases. Explain various **6**

types of distributed databases.

- OR iii. Discuss horizontal and vertical fragmentation techniques for distributed database design, with the help of examples. **6**
- Q.6 Attempt any two:
- i. Explain object relational DBMS. Discuss the architecture of object relational databases. **5**
- ii. What do you understand by RDBMS? Compare RDBMS with OODBMS and ORDBMS. **5**
- iii. Demonstrate in detail about mobile databases. Discuss the characteristics of mobile databases. Give an application of mobile databases. **5**

Marking Scheme CA5CO36 - Advanced DBMS

Q.1	i)	Which of the following is not a level of data abstraction? (B) Critical Level	1		ii.	3 Marks: Describe normal form. 3 Marks: various normal forms 2 Marks: examples.	8
	ii)	In an Entity-Relationship Diagram “Diamonds” represents (D) Relationship sets	1	OR	iii.	3 Marks: Functional Dependency 3 Marks: Types 2 Marks: properties of FD’s.	8
	iii)	Which of the following is based on Multi Valued Dependency? (D) Fourth Normal form	1				
	iv)	Which of the following is a type of functional dependency? (C) Both A and B	1	Q.4	i.	3 Marks: three techniques commonly used when developing algorithms for relational operators.	3
	v)	The process of finding a good strategy for processing a query is called (B) Query processing	1		ii.	3 Marks: Define Query optimization. 4 Marks: Need of Query Optimization.	7
	vi)	If the results of one operation are passed on to the other, it is called as (B) Pipeline	1	OR	iii.	3 Marks: Pipeline Evaluation 4 Marks: Advantages of pipelining.	7
	vii)	Which of the following is not one of the stages in the evolution of distributed DBMS? (A) Unit of work	1	Q.5	i.	2 Marks: architecture of Parallel database 2 Marks: Explanation.	4
	viii)	Some of the columns of a relation are at different sites is which of the following? (C) Vertical Partitioning	1		ii.	3 Marks: Distributed databases. 3 Marks: types of distributed databases.	6
	ix)	Which of the following are the examples of ORDBMS? (D) All of the Above	1	OR	iii.	2 Marks: Discuss horizontal fragmentation techniques 2 Marks: vertical fragmentation techniques 2 Marks: examples.	6
	x)	ORDBMS is the data model in which data is stored in form of: (D) Objects	1	Q.6		Attempt any two:	
Q.2	i.	1 Mark: Explain Foreign key 1 Mark: Explain importance.	2		i.	3 Marks: Object Relational DBMS 2 Marks: the architecture of object relational databases.	5
	ii.	3 Marks: Minimum Three responsibilities of a DBA.	3		ii.	2 Marks: Define RDBMS 3 Marks: Compare RDBMS with OODBMS and ORDBMS.	5
	iii.	2 Marks: components of DBMS 2 Marks: overall system architecture of DBMS 1 Marks: Diagram.	5		iii.	2 Marks: Mobile databases. 2 Marks: Characteristics of Mobile databases 1 Marks: Application of Mobile databases.	5
OR	iv.	3 Marks: Notations for ER diagrams. 2 Marks: their meaning.	5				
Q.3	i.	2 Marks: goal of normalization.	2				
