



MARWADI UNIVERSITY

Faculty of Technology

Computer Engineering /Information Technology

B.Tech

SEM: 3rd

SUMMER-2019

Subject: - (Database Management System) (01CE0302)

Date:-10/04/2019

Total Marks:-100

Time: - 03:00 hours

Instructions:

1. All Questions are Compulsory.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

Question: 1.

- (a) Objective MCQ [10]
- 1) Which of the following is not a property of transactions?
 - (A) Atomicity
 - (B) Concurrency
 - (C) Isolation
 - (D) Durability
 - 2) Checkpoints are a part of
 - (A) Recovery measures
 - (B) Security measures
 - (C) Concurrency measures
 - (D) Authorization measures
 - 3) In an E-R diagram double lines indicate
 - (A) Total participation
 - (B) Multiple participation
 - (C) Cardinality N
 - (D) None of the above
 - 4) Fifth Normal form is concerned with
 - (A) Functional dependency
 - (B) Multivalued dependency
 - (C) Join dependency
 - (D) Domain-key
 - 5) A transaction is in _____ state after the final statement has been executed.
 - (A) partially committed
 - (B) active
 - (C) committed
 - (D) none of the above
 - 6) The data Model which describes how the data actually stored is
 - (A) Internal model
 - (B) External model
 - (C) Logical model
 - (D) None of the above
 - 7) DML stands for
 - (A)-Data Manipulation Language
 - (B) Derived manual Language
 - (C) Data management Language
 - (D) None of these

8) Which of the following are the properties of entities:

- (A) Groups
- (B) Table
- (C) Attributes
- (D) none of the mentioned

9) Which one is the lowest level data model?

- (A) Physical data model
- (B) Logical data model
- (C) External data model
- (D) none of the above

10) DDL stands for

- (A)-Data definition Language
- (B) Derived data Language
- (C) Data design Language
- (D) None of these

(b) Define the following

[10]

- (1) Attribute
- (2) DDL
- (3) Primary key
- (4) Candidate Key
- (5) DBMS
- (6) DBA
- (7) SQL
- (8) delete in sql
- (9) select in sql
- (10) distinct in sql

Question: 2.

(a) Draw E-R diagram for bank management system.

[08]

(b) Draw and explain three level architecture of DBMS.

[08]

OR

(b) Compare various user type of DBMS .Explain each type in detail.

[08]

Question: 3.

(a) List all the Relational algebra operators. Explain the working of any three with example

[08]

(b) Explain ACID properties in detail

[04]

(c) Explain advantages of DBMS in detail

[04]

OR

(a) Explain conflict serializability with example

[08]

(b) Compare any four aggregate functions with example.

[04]

(c) Explain transaction various states in brief

[04]

Question: 4.

- (a) Draw an E-R diagram for University Management System. Assume relevant entities and attributes for the given system. [08]
- (b) Define cursor. classify various types of cursors in PL/SQL [04]
- (c) What is dead lock? Illustrate the same with wait-for graph [04]

OR

- (a) List and explain applications of DBMS. [08]
- (b) Explain generalization and specialization in E-R diagram. [04]
- (c) Compare various types of attributes with example [04]

Question: 5.

- (a) What is normalization? Explain all normal forms with example [08]
- (b) What is Data Independence? Explain with example [04]
- (c) Write a note on mapping cardinality in E-R Diagram. [04]

OR

- (a) State the differences between PL/SQL and SQL. Write structure of PL/SQL [08]
- (b) Explain the working of Select Operation and Project Operation with an example [04]
- (c) Compare GRANT and REVOKE commands. [04]

Question: 6.

- (a) Explain two phase locking protocol in detail. [08]
- (b) Given relation R with attributes A,B, C,D,E,F and set of FDs as
 $A \twoheadrightarrow BC$, $E \twoheadrightarrow CF$, $B \twoheadrightarrow E$ and $CD \twoheadrightarrow EF$.
 1) Find out closure $\{A,B\}^+$ of the set of attributes.
 2) Find out closure $\{A\}^+$ of the set of attributes. [04]
- (c) Explain Mandatory Access Control v/s Discretionary Access Control [04]

OR

- (a) Write the following SQL query for the following EMPLOYEE relation

EMPLOYEE (emp_id name, department_name, salary, address, department_no)

1. Change the name to Ramesh whose emp_id is 11108
2. Display only those employees whose salary is greater than 25000
3. Display the name and address of employees
4. Show the list of employees according to salary (descending order)

[08]

- (b) . Explain various types of locks on Transaction

[04]

- (c) What is multi valued dependency?

[04]

---Best of Luck---

Que. Paper weight-age as per Bloom's Taxonomy

No.	Que. Level	% of weight-age	
		% of weight –age	Que. No.
1	Remember/Knowledge	20.9	Q1-a,Q1-b,Q3-a,Q4-b,Q5-c
2	Understand	30.23	Q3-b,Q3-c,Q3-a or,Q3-b or,Q3-c or ,Q4-b or,Q5-a,Q5-b,Q5-b or,Q6-a
3	Apply	20.9	Q2-a,Q2-b,Q4-a,Q4-c,Q4-c or,Q6-c or
4	Analyze	16.27	Q2-b or,Q5-a or,Q5-c or,Q6-c ,Q6-b or,
5	Evaluate	11.62	Q4-a or,Q6-b,Q6-a or
6	Higher order Thinking	0	

GRAPH: