

Enrollment No.....



Faculty of Engineering
End Sem (Odd) Examination Dec-2017
CS2CO02 Data Base Management System

Programme: Diploma

Branch/Specialisation: CS

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. The term _____ is used to refer to a row. 1
(a) Attribute (b) Tuple (c) Field (d) Instance
 - ii. Database _____, which is the logical design of the database, 1
and the database _____, which is a snapshot of the data in the
database at a given instant in time.
(a) Instance, Schema (b) Relation, Schema
(c) Relation, Domain (d) Schema, Instance
 - iii. An _____ is a set of entities of the same type that share the 1
same properties, or attributes.
(a) Entity set (b) Attribute set
(c) Relation set (d) Entity model
 - iv. Which one of the following uniquely identifies the elements in the 1
relation?
(a) Secondary Key (b) Primary key
(c) Foreign key (d) Composite key
 - v. Which one of the following is used to define the structure of the 1
relation, deleting relations and relating schemas?
(a) DML (Data Manipulation Language)
(b) DDL (Data Definition Language)
(c) Query
(d) Relational Schema
 - vi. Insert into instructor values (10211, 'Smith', 'Biology', 66000); 1
What type of statement is this?
(a) Query (b) DML (c) Relational (d) DDL

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- vii. A transaction may not always complete its execution successfully. **1**
Such a transaction is termed.
(a) Aborted (b) Terminated (c) Closed (d) All of these
- viii. If an transaction is performed in a database and not committed, **1**
the changes are taken to the previous state of transaction by
(a) Flashback (b) Rollback
(c) Both (a) and (b) (d) Cannot be done
- ix. In ordered indices the file containing the records is sequentially **1**
ordered, a _____ is an index whose search key also
defines the sequential order of the file.
(a) Clustered index (b) Structured index
(c) Unstructured index (d) Non clustered index
- x. Which is the major stage of query processing? **1**
(a) Query Execution (b) Query Optimization
(c) Both (a) and (b) (d) None of these

- Q.2 i. What is DBMS? What are the applications of DBMS? **2**
ii. Why we need DBMS? **3**
iii. Describe overall architecture of database system with diagram. **5**
- OR iv. What is data model? Explain different data models? **5**
- Q.3 i. What are integrity constraints? **2**
ii. What is relational algebra? Explain select, project, join and
division operation with the help of example? **8**
- OR iii. What is normalization? Explain 1NF, 2NF, 3NF with help of
example? **8**
- Q.4 i. Write the SQL query to create primary key and foreign key on
department and employee table? **4**
ii. Explain the DDL, DML and DCL with the help of SQL. **6**
- OR iii. Why the databases use the concept of view? Explain the different
type view along with their advantages and disadvantages? **6**
- Q.5 i. What do you mean by transaction? Also write the properties of
transaction. **4**

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- ii. Which type of problem we face during concurrent access of the **6**
data? Suggest the appropriate solution for the concurrent access
anomalies?
- OR iii. Explain the two phase locking protocol? **6**
- Q.6 Attempt any two:
- i. What is query processing? Explain with the help of diagram. **5**
ii. What is indexing and what is its need in database system? **5**
iii. Write short note on data mining and warehousing? **5**

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Marking Scheme

Q.1	i. The term _____ is used to refer to a row. (b) Tuple	1			
	ii. Database _____, which is the logical design of the database, and the database _____, which is a snapshot of the data in the database at a given instant in time. (d) Schema, Instance	1			
	iii. An _____ is a set of entities of the same type that share the same properties, or attributes. (a) Entity set	1			
	iv. Which one of the following uniquely identifies the elements in the relation? (b) Primary key	1			
	v. Which one of the following is used to define the structure of the relation, deleting relations and relating schemas? (b) DDL (Data Definition Language)	1			
	vi. Insert into instructor values (10211, 'Smith', 'Biology', 66000); What type of statement is this? (b) DML	1			
	vii. A transaction may not always complete its execution successfully. Such a transaction is termed. (a) Aborted	1			
	viii. If an transaction is performed in a database and not committed, the changes are taken to the previous state of transaction by (b) Rollback	1			
	ix. In ordered indices the file containing the records is sequentially ordered, a _____ is an index whose search key also defines the sequential order of the file. (a) Clustered index	1			
	x. Which is the major stage of query processing? (c) Both (a) and (b)	1			
Q.2	i. DBMS meaning – 1 mark Applications of DBMS – 1 mark	2			
	ii. Need DBMS – 3 marks	3			
				iii. Diagram – 1.5 marks Description – 3.5 marks	5
			OR	iv. Data model – 1.5 marks Different data models – 3.5 marks	5
				Q.3 i. Integrity constraints – 2 marks ii. Relational algebra – 1.5 marks Operation with example – 6.5 marks	2 8
			OR	iii. Normalization – 2 marks 1NF, 2NF, 3NF with example – 2 marks each (2 marks * 3 = 6 marks)	8
				Q.4 i. Primary key - 2 marks Foreign key – 2 marks ii. Explanation DDL, DML and DCL with SQL – 2 marks each (2 marks * 3 = 6 marks)	4 6
			OR	iii. Why use the concept of view – 2 marks Type view with their advantages and disadvantages – 4 marks	6
				Q.5 i. Transaction – 1 mark Properties of transaction. – 3 marks ii. Type of problem – 2 marks Solution – 4 marks	4 6
			OR	iii. Two phase locking protocol	6
				Q.6 Attempt any two: i. Diagram – 1.5 marks Description – 3.5 marks ii. Indexing - 3 marks Need in database system – 2 marks iii. Data mining - 2.5 marks Data warehousing – 2.5 marks	5 5 5
