

Name:	 UPES <small>UNIVERSITY OF TOMORROW</small>
Enrolment No:	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES	
End Semester Examination, May 2023	
Program: BBA-ABD	Semester: III
Subject/Course: DATA MANAGEMENT	Max. Marks: 100
Course Code: CSEG2019	Duration: 3 Hour

SECTION A			
10Qx2M=20Marks			

S. No.		Ma rks	CO
Q 1	Answers the following questions: -		CO1
1)	What is ER Diagram?	2	CO1
2)	What is the difference between DBMS & RDBMS?	2	CO1
3)	What is the meaning of Functional Dependency in DBMS?	2	CO1
4)	What role does a key attribute play in DBMS?	2	CO1
5)	What is meant by Data redundancy & Inconsistency in DBMS?	2	CO1
6)	What is Database Management System?	2	CO1
7)	In context of database design, what is Degree of a Relationship?	2	CO1
8)	How would you define SQL?	2	CO1
9)	What is the difference between Data & Information?	2	CO1
10)	What are the different types of SQL Constraints?	2	CO1

SECTION B			
4Qx5M= 20 Marks			

Q 2.	Answers the following questions: -		
1)	How would you define a Transaction in a database. Explain ACID properties with respect to Fund Transfer as an example in a Bank.	5	CO2
2)	Explain Derived Attribute, Composite Attribute & Multivalued Attribute with the help of an example.	5	CO2
3)	In the context of concurrent execution of transactions in RDBMS, how would you define a schedule and its significance?	5	CO2
4)	What is a Serializable Schedule? Explain the concept of Super key, Candidate Key & Primary Key with suitable example.	5	CO2

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SECTION-C
3Qx10M=30 Marks

Q 3.	Answers the following questions: -		
1)	What is Normalization? Explain 1NF, 2NF & 3NF with example. Why is BCNF considered to be better than 3NF? Explain to contemporary programming- Justify this by taking suitable example?	10	CO2
2)	What is Testing of Serializability? Find out whether the given Schedules are Conflict Serializable or not: - i) R1(X), W2(X), W1(X), W3(X) ii) R1(X), R3(X), W3(X), W1(X), W1(X), R2(X)	10	CO3
3)	Discuss the Join operation & its various types (Natural Join, Theta Join, Outer joins) with the help of suitable examples.	10	CO3

SECTION-D
2Qx15M= 30 Marks

Q 4.	Answers the following questions: -		CO4
1)	What is the concept of Concurrency Control in DBMS? Explain Locking Technique for Concurrency Control in detail.	15	CO4
2)	Given $R = (A, B, C, D, E)$ with the set of Functional Dependencies $F = \{A \rightarrow BCDE, BC \rightarrow ADE, D \rightarrow E, AB \rightarrow A\}$. Which highest normal form does R satisfies? Is R in 3NF? If not then decompose it in 3NF.	15	CO4