


Name:			
Enrolment No:			
<b>UPES</b> <b>End Semester Examination, May 2024</b>			
<b>Course: Database Management System</b> <b>Program: B.Tech Electronics &amp; Computer Engineering</b> <b>Course Code: CSEG 2046</b>		<b>Semester: IV</b> <b>Time : 03 hrs.</b> <b>Max. Marks: 100</b>	
<b>Instructions: Use diagrams to support the explanation where possible.</b>			
<b>SECTION A</b> <b>(5Qx4M=20Marks)</b>			
S. No.		Marks	CO
Q 1	Compare Conventional File Processing System and DBMS with suitable example.	4	CO1
Q 2	Compare delete, truncate and drop SQL commands with suitable examples.	4	CO3
Q 3	Describe different types of attributes used in an ER model. Show the notation of each.	4	CO1
Q 4	Define Primary and Foreign key with an example.	4	CO2
Q 5	Discuss Union and Intersection operations on two tables.	4	CO2
<b>SECTION B (Attempt any 4 questions)</b> <b>(4Qx10M= 40 Marks)</b>			
Q 6	Consider the following schema: Suppliers(Sid: integer, Sname: string, address: string) Parts(Pid: integer, Pname: string, color: string) Catalog(Sid: integer, Pid: integer, cost: real) Write the following queries in relational algebra and SQL i. Find the names of suppliers who supply some red part. ii. Find the Sids of suppliers who supply some red or green part.	10	CO3
Q 7	Consider the following relation- $R = \{A, B, C, D, E, F, G, H, I, J\}$ and the functional dependencies- $\{\{A, B\} \rightarrow \{C\}, \{B\} \rightarrow \{E, F\}, \{A, D\} \rightarrow \{G, H\}, G \rightarrow \{I\}, H \rightarrow \{J\}$ on R. (A) Identify the key for this relation. (B) Find the closure of E. (C) Identify the transitive dependency in this relation. (D) Find the closure of AB. (E) If we choose the key from sub question (A), discuss if any partial dependency will exist in this table.	10	CO4

Q 8	Illustrate the use of three-schema architecture in respect of physical and logical data independence.	10	CO1
Q 9	Transform following E-R diagram to relational schema 	10	CO2
Q 10	Explain different CODD's rules.	10	CO3
<b>SECTION-C (Attempt any 2 questions)</b> <b>(2Qx20M=40 Marks)</b>			
Q 11	Explain various stages of query processing in detail.	20	CO4
Q 12	Discuss Normalization and its various forms.	20	CO3
Q 13	a. Describe different types of anomalies with suitable example. b. Given a relation R ( A, B, C, D) and Functional Dependency set $FD = \{AB \rightarrow CD, B \rightarrow C\}$ , determine whether the given R is in 2NF?	20	CO4