



ADAMAS UNIVERSITY

END SEMESTER EXAMINATION

(Academic Session: 2020 – 21)

Name of the Program:	MCA	Semester:	II
		(I/III/ V/ VII/IX)	
Paper Title:	Database Management Systems	Paper Code:	CSE21911
Maximum Marks:	50	Time Duration:	3 Hrs
Total No. of Questions:	17	Total No of Pages:	2
(Any other information for the student may be mentioned here)	<ol style="list-style-type: none"> At top sheet, clearly mention Name, Univ. Roll No., Enrolment No., Paper Name & Code, Date of Exam. All parts of a Question should be answered consecutively. Each Answer should start from a fresh page. Assumptions made if any, should be stated clearly at the beginning of your answer. 		

Group A

Answer All the Questions (5 x 1 = 5)

1	What is Domain of an Attribute?	Remember	CO2
2	Explain equi Join with example?	Remember	CO2
3	What is deadlock? Explain with explain?	Remember	CO4
4	Explain many to many cardinality properties with example?	Remember	CO5
5	What is DML compiler? Explain with example?	Remember	CO1

Group B

Answer All the Questions (5 x 2 = 10)

6 a)	What is Sparse Index?	Understand	CO1
6 b)	Explain Outer join and Its types?	Understand	CO1
7 a)	Explain Data Dictionary?	Remember	CO2
7 b)	What are the different Database abstraction layers?	Remember	CO2
8 a)	Explain Lossless and Dependency Preserving Decomposition of a Data base?	Remember	CO3

(OR)

8 b)	Explain 3 rd Normal form using a suitable example?	Remember	CO3
9 a)	What is Triggers and Demons?	Remember	CO4

(OR)

9 b)	Explain Armstrong Axioms?	Understand	CO4
10 a)	What is the highest NF of each of the following relations-Please justify your answer? i) R1 (W, X, Y, Z) with FDs are $W \rightarrow ZY$, $WX \rightarrow Z$ ii) R2 (W, X, Y, Z,P) with FDs are $P \rightarrow WX$, $PY \rightarrow Z$	Remember	CO5

(OR)

10 b)	What is the highest NF of each of the following relations-Please justify your answer?? i) R1 (A, B, D) with FDs are $A \rightarrow BD$, $B \rightarrow D$ ii) R2 (A, B, C, D) with FDs are $A \rightarrow BC$, $D \rightarrow C$	Remember	CO5
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Group C

Answer All the Questions (7 x 5 = 35)			
11 a)	Design an ER Diagram with proper cardinality for University Management Systems?	Understand	CO4
(OR)			
11 b)	Design an ER Diagram with proper cardinality for Railway Reservation Systems?	Understand	CO4
12 a)	Book(acc no, yr_pub, title) User(card no, bname, baddress) Borrow(acc no, doi, card_no) where acc_no is accession number, yr_pub is year of publication, bname is borrower name, baddress is borrower address, doi is date of issue. Perform the following queries on the table.(In Relational Algebra) (i) Find the accession number whose year of publication is 2000. (ii) Display the title of the book which has been borrowed by "Vijoy". (iii) Find the borrower name who lives in same city as "Vijoy". (iv) Find the borrower name and address who should issue book on 14-05-2010. (v) Find the acc_no of Book whose year of publication is 2000 and title is "Compiler Design".	Remember	CO2
(OR)			
12 b)	Employee(EMPID int, EMP_age int, City varchar(10),Salary int) 1. Find the Employees whose name starts with "A". 2. Find the employee with salary between 30000 to 40000. 3. Find the no of employees working from "Kolkata" location. 4. Find the city wise total salary expenditure for the employees. 5. Find the highest amount of salary for the employees.	Remember	CO2
13 a)	Explain view serializability with proper example?	Remember	CO3
(OR)			
13 b)	Explain State diagram of a Transaction?	Remember	CO3
14 a)	Explain ACID property?	Remember	CO4
(OR)			
14 b)	Explain two phase locking protocol?	Remember	
15 a)	Explain Deadlock recovery techniques?	Apply	CO4
(OR)			
15 b)	Explain Deferred Database Modification?	Apply	CO4
16 a)	Explain Time stamp based protocol?	Remember	CO5
(OR)			
16 b)	Explain Fundamental Relational Algebra Operators?	Remember	CO5
17 a)	What is Shadow Copy and Shadow paging?	Apply	CO5
(OR)			
17 b)	Explain Hashing?	Apply	CO5