Printed Page:-	Subject Code:- ACSBS0404
	Roll. No:
NOIDA INSTITUTE OF ENGINEERING A	AND TECHNOLOGY, GREATER NOIDA
(An Autonomous Institute Af	filiated to AKTU, Lucknow)
B.Te	ech
SEM: IV - CARRY OVER THEORY E	XAMINATION - SEPTEMBER 2022
Subject: Database M	anagement Systems
Time: 3 Hours	Max. Marks: 100
General Instructions:	
1. The question paper comprises three sections, A, B, an	nd C. You are expected to answer them as directed.
2. Section A - Question No- 1 is 1 marker & Question N	Io- 2 carries 2 mark each.
3. Section B - Question No-3 is based on external choice	e carrying 6 marks each.
4. Section C - Questions No. 4-8 are within unit choice of	questions carrying 10 marks each.
5. No sheet should be left blank. Any written material at	fter a blank sheet will not be evaluated/checked.
SECTION	A 20
1. Attempt all parts:-	
1 Which of the following is the full form of DI	DL? (CO1) 1
(a) Data Definition Language	
(b) Dynamic Data Language	
(c) Data Derivation Language	
(d) Detailed Data Language	
1 For performing tasks like adding, deleting a	nd updating of tuples in a relation, which of the 1
following is used? (CO1)	
(a) Data definition language	
(b) Data control language	
(c) Data manipulation language	
(d) Transaction control language	
1 A relation is in 1NF if it doesn't contain any	? (CO2)
(a) Determinants	
(b) Repeating groups	
(c) Null values in primary key fields	

	(d) Functional dependencies	
1	Which of the following is based on multi valued dependency? (CO2)	1
	(a) First	
	(b) Second	
	(c) Third	
	(d) Fourth	
1-e.	Which SQL keyword is used to retrieve a maximum value? (CO3)	1
	(a) MOST	
	(b) TOP	
	(c) MAX	
	(d) UPPER	
1-f.	Which of the following is not a DDL command? (CO3)	1
	(a) UPDATE	
	(b) TRUNCATE	
	(c) ALTER	
	(d) None	
1	What are ACID properties of transaction? (CO4)	1
	(a) Atomicity, Consistency, Isolation, Database	
	(b) Atomicity, Consistency, Isolation, Durability	
	(c) Atomicity, Consistency, Inconsistent, Durability	
	(d) Automatically, Concurrency, Isolation, Durability	
1	Which of the following is not the method of deadlock handling? (CO4)	1
	(a) Deadlock prevention	
	(b) Deadlock detection	
	(c) Deadlock recovery	
	(d) Deadlock distribution	
1-i.	Which type of command is GRANT? (CO5)	1
	(a) Transaction Control Language (TCL) command	
	(b) Data Query Language (DQL) command	
	(c) Data Control language (DCL) command	
	(d) None of these	

1-j.	How many tier data warehouse architecture? (CO5)	1
	(a) Two	
	(b) One	
	(c) Four	
	(d) Three	
2. Atte	mpt all parts:-	
2.a.	What are the disadvantages of file processing system? (CO1)	2
2.b.	Describe functional dependencies. (CO2)	2
2.c.	Consider the following relation: EMP (ENO, NAME, DATE_OF_BIRTH, SEX, DATE_OF_JOINING, BASIC_PAY, DEPT) Develop an SQL query that will find and display the average BASIC_PAY in each DEPT. (CO3)	2
2.d.	What is ROLLBACK and COMMIT in DBMS? (CO4)	2
2.e.	What do you understand by the term IDS? (CO5)	2
	SECTION B 30	
3. Ansv	wer any <u>five</u> of the following:-	
3-a.	Give example of Simple, Composite, Single –valued and Multi-valued attributes of an entity. (CO1)	6
3-b.	Construct an E-R diagram for a hospital with a set of patients and a set of medical doctors. Associated with each patient, a log of the various tests and examinations conducted. Also Reduce ER Diagram of Hospital to Relational Tabular Form? (CO1)	6
3-c.	What is Normalization and denormalization. Why do we normalize database? (CO2)	6
3-d.	Define partial functional dependency. Consider the following two sets of functional dependencies $F= \{A \rightarrow C, AC \rightarrow D, E \rightarrow AD, E \rightarrow H\}$ and $G= \{A \rightarrow CD, E \rightarrow AH\}$. Check whether or not they are equivalent. (CO2)	6
3.e.	Differentiate between Truncate and Drop command in SQL. How do you add a column to a table using SQL statement(s)? (CO3)	6
3.f.	What is Two phase Locking (2PL)? Define shrinking phase and growing phase. (CO4)	6
3.g.	What is the difference between Authentication and Authorization? (CO5)	6
	SECTION C 50	
4. Ansv	wer any <u>one</u> of the following:-	
4-a.	What is ER Diagram? Explain different Components of an ER Diagram with there Notation.	10

	Also make an ER Diagram for Employee Project Management System. (CO1)	
4-b.	Explain the difference between 1-tier, 2-tier and 3-tier architecture in a DBMS with figure? (CO1)	10
5. Answe	er any one of the following:-	
5-a.	Explain 5NF and DKNF. Explain three conditions for Loss less decomposition with example? (CO2)	10
5-b.	What are the puropose of DDL and DML language? What are the differences between SQL, MySQL, and SQL Server? (CO2)	10
6. Answe	er any one of the following:-	
6-a.	What are SQL operators ? Explain different SQL operators with example. (CO3)	10
6-b.	What do you mean by B-Tree, give its properties. Expalin deletion and Insertion operation in B-Tree with example? (CO3)	10
7. Answe	er any one of the following:-	
7-a.	Explain the method of testing the serializability. Consider the schedule S1 and S2 given below S1: R1(A),R2(B),W1(A),W2(B) S2: R2(B),R1(A),W2(B), W1(A) Check whether the given schedules are conflict equivalent or not? (CO4)	10
7-b.	Writee short note on:- a. Deadlock b. Strict two phase locking c. Rigorous two phase locking d. Starvation (CO4)	10
8. Answe	er any one of the following:-	
8-a.	Write characteristics, goals and data view of Logical database. Also gives its advantages and disadvantages? (CO5)	10
8-b.	Explain SQL injection in detail. Give difference between Relational Database Management System (RDBMS) and Object Oriented database Management System (OODBMS). (CO5)	10