Roll No. | | | | | | | | | | |

104

COER University

END SEMESTER EXAMINATION, EVEN SEM 2022-23

Time : 3 hours
Program Name : B.Tech.(Honors)-CSE, CSE(AI&ML), CSE(Cyber Security)
Course Name : Database Management Systems

Total Marks : 100
Semester : IV
Course Code : SOC208

Note: All questions are compulsory. No student is allowed to leave the examination hall before the completion of the time.

Q. No 1	Attempt Any Four Parts. Each Question Carries 5 Marks.	CO	BL
(a)	Define DBMS? Describe its applications and importance in current market?	CO 1	1
(b)	What is database system architecture? Describe the different levels of database architecture?	CO 1	4
(c)	Define entity relationship model? Draw an E-R diagram of library system?	CO 1	2
(d)	What are constraints in DBMS? Explain different types of constraints with suitable examples?	CO 1	1
(e)	Define generalization? Can we relate specialization and generalization? Justify your answer?	CO 1	1

Q. No 2	Attempt Any Four Parts. Each Question Carries 5 Marks.	CO	BL
(a)	What are DML statements used for? Describe each of them with proper syntax?	CO 2	1
(b)	Write short notes on any two: i) Foreign Key ii) Relation state iii) Database schema	CO 2	1
(c)	Create a table EMP having empid as primary key, deptno not null and pancard unique key at table level.	CO 2	5
(d)	Differentiate between cursors and procedures with proper syntax and examples?	CO 2	4
(e)	What are triggers? Briefly explain their working?	CO 2	2

Q. No 3	Attempt Any Four Parts. Each Question Carries 5 Marks.	CO	BL
(a)	Define Normalization and what is its importance in a database?	CO 3	1
(b)	Define functional dependencies along with its types and suitable examples?	CO 3	1
(c)	Describe 4NF? Illustrate with the help of a table to achieve 4NF?	CO 3	1
(d)	Explain the concept of Timestamp Protocol? Find wether there is a rollback in the fig. below :	CO 3	4
(e)	What are Armstrong Axioms? Describe them in detail?	CO 3	1

Time of Transaction	T1 (Timestamp = 100)	T2 (Timestamp = 200)	T3 (Timestamp = 300)
Time 1	R (A)		
Time 2		R (B)	
Time 3	W (C)		
Time 4			R (B)
Time 5	R (C)		
Time 6		W (B)	
Time 7			W (A)

Q. No 4	Attempt Any Two Parts. Each Question Carries 10 Marks.	CO	BL
(a)	What does ACID in database stands for? Explain with examples?	CO 4	1
(b)	Define Locking? How many types of locks are their in a database? Give suitable examples for each lock?	CO 4	1
(c)	Define concurrency control and methods to avoid concurrency in a database with solved examples?	CO 4	2

Q. No 5	Attempt Any Two Parts. Each Question Carries 10 Marks.	CO	BL
(a)	Define Indexing and why it is used in database?	CO 5	1
(b)	How does hashing work? Explain its advantages and disadvantages?	CO 5	1
(c)	Explain the structure and organization of a B+ tree index in a database system. Discuss the key components of a B+ tree?	CO 5	1

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