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Code No. : 14665 AS O

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS), HYDERABAD

Accredited by NAAC with A++ Grade

B.E. (I.T.) IV-Semester Advanced Suppl. Examinations, Aug./Sept.-2023

Database Management Systems

Time: 3 hours

Max. Marks: 60

Note: Answer all questions from **Part-A** and any **FIVE** from **Part-B**

Part-A (10 × 2 = 20 Marks)

Q. No.	Stem of the question	M	L	CO	PO
1.	List any two Database applications.	2	1	1	1
2.	Define weak entity set.	2	1	1	1
3.	What is a View? Write the syntax to create view in SQL.	2	1	2	1
4.	List different aggregate functions.	2	1	2	1
5.	Illustrate fully functional dependency with example?	2	2	3	1
6.	Define Dynamic SQL.	2	1	3	1
7.	State the properties of transaction.	2	1	4	1
8.	Define Serializability.	2	1	4	1
9.	Define the phases of two phase locking protocol.	2	1	5	1
10.	Explain wait-die scheme for deadlock prevention mechanism.	2	2	5	1
Part-B (5 × 8 = 40 Marks)					
11. a)	List out the drawbacks of file system over database system.	3	2	1	1
b)	Construct an ER Diagram for Library Management System.	5	3	1	2
12. a)	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)	5	3	2	2
	Write an expression in SQL for the following queries. 1. Find the names of suppliers who supply some red part. 2. Find the sids of suppliers who supply some red or green part				
b)	Explain the Relational Algebra Operations with an example.	3	2	2	1
13. a)	Justify with an example if a relation scheme is in BCNF Normal Form then it is also in 3NF.	5	3	3	2
b)	Illustrate fully functional dependency with example? For the following R and a set of functional dependencies F(A,B,C,D,E), F= {AC->E,B->D,E->A}, Show all candidate keys.	3	3	3	2

14. a)	List ACID properties and illustrate its significance along with an example.	4	2	4	1
b)	Illustrate the significance of Serializability with an example.	4	2	4	1
15. a)	Compare Deferred and Immediate modification techniques of the Log based recovery schemes.	5	3	5	2
b)	Explain Timestamp-based protocols with example.	3	2	5	1
16. a)	Explain the concept of Generalization and Specialization.	3	2	1	1
b)	Considering the following schema. Authors (author_id, first_name, last_name, country, birth_year) Books (title, author_id, publication_year) Nobel_Winners (author_id, award_year) Give an expression in the relational algebra to express each of the following queries: (i) List the Last names of Nobel prize winners from Japan (ii) List the pairs of author-ids from the same country such that one of them won the Nobel Prize and the other did not. (iii) List the pairs of authors-id , both of whom are born after 1920. Only list each pair once	5	3	2	2
17.	Answer any <i>two</i> of the following:				
a)	Explain Triggers with an example program.	4	3	3	2
b)	Compare Static hashing and Dynamic hashing.	4	2	4	1
c)	Explain Deadlock prevention techniques with example.	4	2	5	1

M : Marks; L: Bloom's Taxonomy Level; CO; Course Outcome; PO: Programme Outcome

i)	Blooms Taxonomy Level – 1	20%
ii)	Blooms Taxonomy Level – 2	40%
iii)	Blooms Taxonomy Level – 3 & 4	40%
