Code No. 132/S

FACULTY OF ENGINEERING

B.E. 3/4 (CSE) I - Semester (Suppl.) Examination, May / June 2018

Subject : Database Management Systems

Time : 3 Hours **Max. Marks: 75**

Note: Answer all questions from Part-A & any five questions from Part-B.

PART – A (25 Marks)

1 Write about data abstraction. (2)
2 Differentiate between weak entity and strong entity. (3)
3 Define a) candidate key b) Super Key. (2)
4 Write about rename and division operators in relational algebra. (2)
5 Differentiate between Replace and Translate with example. (3)
6 Write about advantages of normalization. (3)
7 Draw and explain state diagram of transaction. (3)
8 What is functional dependency? (2)
9 Define recoverability. (2)
10 Write about buffer management. (3)

PART – B (50 Marks)

11 a) Explain briefly about database architecture. (5)
b) Write briefly about E-R diagram with suitable examples. (5)

12 Discuss the fundamental and extended relational algebra operations with examples. (10)

13 Consider the employee database given below where primary keys are underlined and give (10)
SQL expressions for each of the following queries:
Employee (emp-name, street, city)
Works (emp-name, company-name, salary)
Company (Company-name, city)
Manages (emp-name, manager-name)
(a) Find the names and cities of residence of all employees who work for first Bank Corporation.
(b) Find the names, street addresses and cities of residence of all employees who work for first Bank Corporation and earn more than $10000.
(c) Find all employees in the database who don't work for first Bank Corporation.
(d) Find all employees in the database who earn more than each employee of small bank corporation.
(e) Find all companies located in every city in which small bank corporation is located.

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14 (a) Insert the following keys in a B+ - tree for order n given below (5)
(i) n=4 (ii) n=6
2,3,5,7,9,11,17,19,23,29,31
(b) Explain briefly about view serializability (5)

15 a) How deadlocks are handled. Explain in detail. (5)
b) Write about multiple granularity and validation based protocol in detail. (5)

16 a) Explain briefly about aggregate function with example query. (5)
b) Explain different types of Joins with examples. (5)

17 Write short notes on
a) Storage structures. (5)
b) Log based recovery. (5)

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Code No. 138 / S

FACULTY OF INFORMATICS

B.E. 3/4 (IT) I-Semester (Supplementary) Examination, May 2018

Subject : Database Management Systems

Time : 3 hours **Max. Marks : 75**

Note: Answer all questions from Part-A & any FIVE questions from Part-B.

PART – A (25 Marks)

1	Define Data Base Management System.	2
2	How to represent strong entity set with simple attributes? Give example.	3
3	What is the difference between relation cardinality and relation degree?	2
4	Explain basic structure of SQL query.	3
5	Define cascading revocation.	2
6	Define and explain first NF with example.	3
7	Differentiate between indexing and hashing.	2
8	List and explain ACID properties.	3
9	Explain various categories of failure in DBMS.	2
10	Define and explain 2PL protocol.	3

PART – B (50 Marks)

11 Explain various components in architecture of database with the help of a diagram. 10

12 Explain various basic relational algebra operations with examples. 10

13 Define and explain types of integrity constraints in SQL with examples. 10

14 Explain procedure to insert following key values into B^+ - Tree with appropriate representation. 10

5 15 25 35 45 55 65 75 85 95 99

With number of pointers in each node is 4.

15 How to test for conflict Serializability? Explain with example. 10

16 Explain about a) Difference between 3NF and BCNF 5
b) Bit map indices 5

17 Write short notes on :
a) Weak entity set 3
b) Thomas write rule 2
c) Cascadeless schedule 3
d) Assertion 2

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