BCA-302 145 Printed Pages : 4

Roll No. to be filled in your Answer Book

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

BCA (Third Semester) EXAMINATION, 20115

DBMS

Time: 3.00 Hrs] **[Max. Marks: 70**

Q1: Write a brief note on any four of the following: (4*5=20)

1. Generalization and Aggregation
2. ACID
3. Super key and foreign key
4. Integrity constraint and Domain constraint
5. Trigger and Cluster

Q2: Attempt any four (4*5=20)

1. List four significant differences between a file processing system and a DBMS
2. Explain the concept of physical data independence, and its importance in database system.
3. Describe the differences in meaning between the terms relation and relation schema. Discuss the relative merits of procedural and nonprocedural languages.

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4. Database systems that store each relation in a separate operating system file may use the operating systems authorization scheme, instead of defining a special scheme themselves. Discuss advantages and a disadvantages of such an approach.

5. Give a tuple-relation-calculus expression to find the maximum value in realtion r(A).

Q3: Attempt any four (4*5=20)

1. Design an E-R diagram for keeping track of the exploits of your favorite sports team. You should store the matches played, the score in each match, the players in each match, and individual player statistics for each match. Summary statistics should be modeled as derived attributes.

2. A weak entity set can always be made into a strong entity set by adding to its attribute the primary-key attributes of its identifying entity set. Explain what sort of redundancy will result if we do so.

3. Give an example of a relation schema R' and set F' of functional dependencies such that there are at least three distinct lossless decompositions of R' into BCNF.

4. Given relation schema r(A,B,C,D),does A->-> BC logically imply A->->B and A->->C? If yes, prove it , else give a counter example.

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5. Explain the difference between two-tier and three-tier architectures. Which is best suited for web applications and why?

Q3: Attempt any one (1*10=10)

branch(branch_name,branch_city,assets)

Customer (customer_name, customer_street, customer_city)

Loan(loan_number,branch_name,amount)

Borrower(customer_name,loan_number)

Account(account_number,branch_name,balance)

Depositor(customer_name,account_number)

(a) Consider the bank database.Give an expression in the relational algebra for each of the following queries:

(i) Find all loan number with a loan value greater than $10,000

(ii) Find the name of all depositors who have an account with a value greater than $6,000

(iii) Find the names of all depositors who have an account with a value greater than $6,000 at the "uptown" branch.

(b) Write the following inserts ,deletes or update SQL, using the university schema.

a. Increase the salary of each instructor in computer department by 10%.

b. Delete all courses that have never b offered(that is,do not occur in the sec relation)

c. Insert every student whose *tot_cred* attri is greater than 100 as an instructor in same department, with a salary of $10,

—x—