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CS-06

BACHELOR OF COMPUTER APPLICATIONS (BCA) (Pre-Revised)

Term-End Examination

00753 **December, 2018**

CS-06 : DATABASE MANAGEMENT SYSTEMS

Time : 3 hours *Maximum Marks : 75*

Note : *Question number **1** is **compulsory**. Attempt any **three** questions from the rest.*

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1. (a) Consider the following relations (where Primary Keys are underlined) :

PROJECT (Project_code, P_name, P_leader)

EMPLOYEE (Emp_code, Emp_name, Emp_salary, Emp_Dept))

ASSIGNED_TO (Project_code, Emp_code)

Write SQL Queries for the following : $4 \times 2\frac{1}{2} = 10$

(i) List the Names of employees who are assigned to Project_code "A4532".

(ii) Increase the salary of employees by ₹ 5000/-, who are working on Project_code "B2316".

(iii) Insert a new Project named "HTS", Project_code "C1479" under Project leader "Rupesh Singh".

(iv) Write all the employee names along with project names assigned to them.

(b) What is Client/Server based Database ? Discuss the components of Client/Server computing. 5

(c) Explain the use of any three aggregate functions of SQL with an example for each. 6

(d) What are views and how are they defined in databases ? Give the advantages and disadvantages of views. 5

(e) What are integrity constraints ? Explain any two types of integrity constraints which can be imposed on relational databases. 4

2. (a) Explain at least five important characteristics of OORDBMS. 5

(b) What is NULL ? Give an example to illustrate testing for NULL in SQL. 2

(c) Consider the following 3 tables :

PAINTER

PTR_NUM
PTR_LASTNAME
PTR_FIRSTNAME
PTR_INITIAL
PTR_AREACODE
PTR_PHONE

GALLERY

GAL_NUM
GAL_OWNER
GAL_AREACODE
GAL_PHONE
GAL_RATE

PAINTING

PNTG_NUM
PNTG_TITLE
PNTG_PRICE
PTR_NUM
GAL_NUM

Write relational algebraic expressions/queries for the following operations : 4×2=8

(i) Find all painters who have painted in GAL_NUM = 4.

(ii) Find all paintings of Gallery whose rate is > 1000.

(iii) Find the Gallery in which the painter 'Ramesh' has displayed his paintings.

(iv) Find the number of paintings displayed in the Gallery owned by 'Shyam'.

3. (a) What is meant by data abstraction ? Explain the differences between physical level, conceptual level and view level of data abstraction. 6

(b) Describe DROP TABLE command of SQL with both the options of CASCADE and RESTRICT. 4

(c) Explain the recovery process after system failure checkpoint. 5

4. (a) List the differences between Equijoin and Natural join operations. Give example of each join operation to illustrate your answer. 7

(b) Explain the semantic net representation in a knowledge-based system with the help of an example. 5

(c) Describe the structure of Distributed DBMS. 3

5. (a) Define and differentiate between Ordered Indexing and Hashing. *6*

(b) Explain the following with respect to SQL. Also give an example of each. *3×3=9*

(i) GROUP BY Clause

(ii) ORDER BY Clause

(iii) LIKE Predicate