**POORNIMA UNIVERSITY, JAIPUR**

**END SEMESTER EXAMINATION, November 2022**

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|  | **2BC3101** | Roll No. | Total Printed Pages: 2 |
| **2BC3101** |  |
| BCA II Year III- Semester (Main/Back) End Semester Examination, November 2022  **(AI&DS / CS / Mobile / Gen / Cloud)** | |
| **BCACCA3101 : Relational Data Management System** | | | |

# Time: **3** Hours. Total Marks: **60**

Min. Passing Marks: **21**

Attempt **five** questions selecting one question from each Unit. There is internal choice from Unit I to Unit V. Marks of each question or its parts are indicated against each question / parts. Draw neat sketches wherever necessary to illustrate the answer. Assume missing data suitably (if any) and clearly indicate the same in the answer.

Use of following supporting material is permitted during examination for this subject.

# **1.--------------------------Nil--------------------** **2.------------------Nil-----------------------**

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|  |  | **UNIT-I (CO1)** | **Marks** | **Bloom Level** |
| **Q.1** | **(a)** | What is database? Explain the advantages of DBMS over file oriented system. | **(6)** | **Understand** |
|  |  |  |  |  |
|  | **(b)** | Explain various types of data models in DB System. | **(6)** | **Knowledge** |
|  |  |  |  |  |
|  |  | **OR** |  |  |
|  |  |  |  |  |
| **Q.2** | **(a)** | Design E-R diagram for a company database using suitable entity and relationship. | **(6)** | **Create** |
|  |  |  |  |  |
|  | **(b)** | Design E-R diagram for Library Management System. | **(6)** | **Create** |
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|  |  | **UNIT-II (CO2)** |  |  |
|  |  |  |  |  |
| **Q.3** | **(a)** | Discuss the various fundamental operations in relational algebra with suitable example. | **(6)** | **Understand** |
|  |  |  |  |  |
|  | **(b)** | What do you mean by database transaction? Define the ACID properties of transaction. | **(6)** | **Knowledge** |
|  |  |  |  |  |
|  |  | **OR** |  |  |
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| **Q.4** | **(a)** | Using the following tables below write a relational algebra  statement “Retrieve the names of all customers with loans at the Los  Angeles branch.” Show the steps how you derived the statement. | **(6)** | **Understand** |
|  |  |  |  |  |
|  | **(b)** | What is Normalization? Explain INF, 2NF, 3NF and BCNF giving examples. | **(6)** | **Knowledge** |
|  |  |  |  |  |
|  |  | **UNIT-III (CO3)** |  |  |
| **Q.5** | **(a)** | List out the comparison between DBMS versus RDBMS. | **(6)** | **Analyze** |
|  |  |  |  |  |
|  | **(b)** | Explain the Where clause in detail with following:  1. Comparison Operator 2. Between Operator 3.Like Operators | **(6)** | **Knowledge** |
|  |  |  |  |  |
|  |  | **OR** |  |  |
|  |  |  |  |  |
| **Q.6** | **(a)** | Consider the following tables:  Branch (Branch\_No , street , city, pincode)  Staff( Staff\_No, Fname , position, DOB, Salary, Branch\_no) Answer the following queries using SQL Commands-  1. List all staff with a salary between Rs. 20000 and Rs. 30000 of branch office Delhi or Jaipur.  2. Find the number of staff working in each branch.  3. Find all staff whose salary is larger than the salary of a least one member of staff branch ‘BO3’. | **(6)** | **Evaluate** |
|  |  |  |  |  |
|  | **(b)** | Consider the following schema and write the SQL queries:  EMPLOYEE(Name, address, Bdate, Salary, DNumber)  DEPARTMENT( Dname, Dnumber )   1. Retrieve the date of birth and address of the employee whose name is Mahesh. 2. Retrieve distinct salary of all employees. 3. Find the sum of salaries of all employees, the maximum salary, the minimum salary and average salary. 4. Retrieve the total number of employee in the department. | **(6)** | **Evaluate** |
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|  |  | **UNIT-IV (CO4)** |  |  |
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| **Q.7** | **(a)** | Explain various data types available in PL/SQL. . | **(6)** | **Analyze** |
|  |  |  |  |  |
|  | **(b)** | Write a program to find a Factorial of a number in PL/SQL | **(6)** | **Apply** |
|  |  |  |  |  |
|  |  | **OR** |  |  |
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| **Q.8** | **(a)** | Describe the structure of PL/SQL block. Also discuss how errors can be handled by Exception block in PL/SQL. | **(6)** | **Understand** |
|  |  |  |  |  |
|  | **(b)** | What is a Cursor? Discuss the types of Cursors with suitable examples. | **(6)** | **Understand** |
|  |  |  |  |  |
|  |  | **UNIT V (CO5)** |  |  |
|  |  |  |  |  |
| **Q.9** | **(a)** | Why database triggers are needed? Explain the concept of trigger by writing a suitable syntax and example for creating DML statement trigger. | **(6)** | **Understand** |
|  |  |  |  |  |
|  | **(b)** | Explain with the diagram PL/SQL Packages | **(6)** | **Understand** |
|  |  |  |  |  |
|  |  | **OR** |  |  |
|  |  |  |  |  |
| **Q.10** | **(a)** | What is Database Administrator? Explain various roles and responsibility of DBA. | **(6)** | **Understand** |
|  |  |  |  |  |
|  | **(b)** | What is wrapping? Enlist the rules and limitations of wrapping. | **(6)** | **nderstand** |