**POORNIMA UNIVERSITY, JAIPUR.**

**END SEMESTER EXAMINATION, November 2022**

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|  | **2BC3014** | Roll No.  2BC3014 | Total Printed Pages: 2 |
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| BCA III- Semester (Back) End Semester Examination, November 2022  **(All Spl.)** | |
| **BCA03102 / BCM03102/ BMC03102 / BCT03102 / BAP03102 / BCD03102:**  **Database 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** |
| **Q.1** | **(a)** | Explain Entity, Entity Type, and Entity Set in DBMS? Complete your answer by providing example as well.   1. Describe the steps to prepare an ER diagram. Draw any ER diagram of your choice | **(3)**  **(3)** |
|  |  |  |  |
|  | **(b)** | What is the difference between DDL and DML commands? Explain with example. Differentiate between Physical Data model and Logical Data model. | **(3)**  **(3)** |
|  |  | **OR** |  |
| **Q.2** | **(a)** | What are the different types of languages that are available in the DBMS? Explain each one of them by providing examples in detail.   1. Which particular entity sets are not having enough attributes to form a Primary key? Explain this with example. | **(3)**  **(3)** |
|  |  |  |  |
|  | **(b)** | Explain the basic concept of database system architecture in your own words.  Differentiate between composite attribute and multivalued attribute with proper example. | **(3)**  **(3)** |
|  |  | **UNIT-II (CO2)** |  |
| **Q.3** | **(a)** | How would you explain the concepts of a Primary key and Foreign Key and also add some examples in your answer to justify it more efficiently.   1. Explain Logical Operators and also provide example to complete your answer. | **(4)**  **(2)** |
|  |  |  |  |
|  | **(b)** | What is constraint? Explain different types of constraint with example.  How you can perform pattern matching? Note down the steps for it. | **(4)**  **(2)** |
|  |  | **OR** |  |
| **Q.4** | **(a)** | Manish is working as a Data base administrator and his boss asked him to create 3 users User1, User2 and User3. Implement the following:-  a) Grant All rights to the user User1.  b) The user User2 should only be given rights to create a table and use select command.  c) The user User3 should be given rights to create and update the tables. | **(6)** |
|  |  |  |  |
|  | **(b)** | Explain the difference between ‘where’ clause and ‘having’ clause and write a query using both clauses.  How will you perform grouping of the data, write down the syntax and explain your answer. | **(4)**  **(2)** |
|  |  | **UNIT-III (CO3)** |  |
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| **Q.5** | **(a)** | How would you explain triggers?  In which specific scenarios Triggers should be used and how would you design a query for AFTER INSERT trigger, give a proper example with syntax. | **(2)**  **(4)** |
|  |  |  |  |
|  | **(b)** | In which particular scenario, a database developer should go for Union and intersection; you can choose the tables of your choice to justify your answer. Also write the basic introduction of Union and Intersection.  List down the features of Embedded SQL and Dynamic SQL and explain answer with suitable points. | **(4)**  **(2)** |
|  |  | **OR** |  |
| **Q.6** | **(a)** | In your own words, how would you define Joining multiple tables? Explain various methods with examples.  Differentiate between Union,Minus and Intersect by giving appropriate examples. | **(3)**    **(3)** |
|  |  |  |  |
|  | **(b)** | Compare features of Embedded SQL and Dynamic SQL and explain answer with suitable points and examples. | **(6)** |
|  |  | **UNIT-IV (CO4)** |  |
| **Q.7** | **(a)** | In which normal form, a composite attribute is converted to individual attributes. Elaborate the procedure of converting a table to this normal form with a suitable example. | **(6)** |
|  |  |  |  |
|  | **(b)** | How would you differentiate between Prime Key Attribute and Non-Prime Key Attribute? Justify your answer with proper example.  Define the three types of anomaly in the database for which the normalization process is required. | **(3)**  **(3)** |
|  |  | **OR** |  |
| **Q.8** | **(a)** | How would you involve the concept of Database normalization while starting the process of Database Design? Could you please give some detail explanation how Database Normalization plays a vital role in database design. | **(6)** |
|  |  |  |  |
|  | **(b)** | What do you mean by Decomposition? How decomposition can be used to eliminate redundancy. | **(6)** |
|  |  | **UNIT V (CO5)** |  |
| **Q.9** | **(a)** | Why we use locks in transaction? Explain different types of locks.  Write in your own words about 2PC protocol. | **(4)**  **(2)** |
|  |  |  |  |
|  | **(b)** | What do you mean by database transaction? Explain the ACID properties of transaction.  Differentiate between transaction failure and system failure. | **(4)**  **(2)** |
|  |  | **OR** |  |
| **Q.10** | **(a)** | Describe the use of Savepoint and also write down the syntax.  How would you define Transaction Control?  Differentiate between Commit and Rollback commands by providing syntax in the answers. | **(2)**  **(2)**  **(2)** |
|  |  |  |  |
|  | **(b)** | List the sequence of states through which transaction passes and draw the diagram to explain different states of transaction.  Compare dirty read and Phantom read with suitable example. | **(3)**  **(3)** |