

Roll No.

Total No. of Questions : 07

Total No. of Pages : 02

BCA (Sem.-4)

DATABASE MANAGEMENT SYSTEMS

Subject Code : UGCA1922

M.Code : 79726

Date of Examination : 07-07-22

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A**1. Write briefly :**

- a) How to sort the data in schema?
- b) What is the role of integrity constraints?
- c) What is the difference between a key and a super key?
- d) What is the difference between specialization and generalization?
- e) Define user defined functions in detail with example in SQL.
- f) Explain the concept recovery.
- g) What is an unsafe query? Give an example.
- h) Under what conditions must a foreign key not be null?
- i) What is log? How it is maintained?
- j) Explain the terms primary key and candidate key.

SECTION-B

2. What do you understand by Data constraints in SQL? Explain its various types with the help of examples.
3. Explain Data modelling in database. Why would you choose a database system instead of simply storing data in operating system files?
4. Explain, what is meant by a DDBMS, and discuss the motivation in providing such a system, Discuss the advantages and disadvantages of a DDBMS.
5. What is normalization? Compute the closure of the following set F of functional dependencies for relation schema $R = (A, B, C, D, E)$. $A \rightarrow BC$, $CD \rightarrow E$, $B \rightarrow D$, $E \rightarrow A$. List the candidate keys for R.
6. Explain 3-level architecture of DBMS. Does the relational model provide physical and logical data independence? Explain.
7. Explain various types of JOINS with the help of example. How many rows would a two-table join produce if one table had 50,000 rows and the other had 100,000? What is difference between DELETE & TRUNCATE commands?



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BCA (Sem-4)

DATABASE MANAGEMENT SYSTEMS

Subject Code : UGCA1922

M.Code : 79726

Date of Examination : 22-11-2023

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

- INSTRUCTIONS TO CANDIDATES :**
- SECTION-A is COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
 - SECTION-B** contains **SIX** questions carrying **TEN** marks each and students have to attempt any **FOUR** questions.

SECTION-A

- 1. Answer briefly :**

- a) Cursors
- b) Functions
- c) Entity
- d) Hierarchical Model
- e) Transitive Dependency
- f) Locking
- g) Transaction
- h) Network Model
- i) Importance of DBMS
- j) DKNF.

SECTION-B

2. Explain in detail Concept of Data Modelling and Three Level Architecture of DBMS.
3. Explain in detail Different types of Definition Languages used in SQL along with their examples.
4. What do you understand by Normalization? Apply all its forms with a suitable example.
5. Explain in detail Different types of Joins with suitable examples.
6. Explain in detail Importance of Database Security and Integrity and Control.
7. Write a note on Distributed Database.

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SECTION-B

BCA (Sem-4)
DATABASE MANAGEMENT SYSTEMS

Subject Code : UGCA1922

M.Code : 79726

Date of Examination : 23-05-2024

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. Answer briefly :

- i) What are the different types of languages that are available in the DBMS?
- ii) Explain the concepts of a Primary key and Foreign Key.
- iii) Why is the use of DBMS recommended? Explain by listing some of its major advantages.
- iv) What are the main differences between Primary key and Unique Key?
- v) What is the concept of sub-query in terms of SQL?
- vi) Explain Entity, Entity Type, and Entity Set in DBMS.
- vii) What is E-R model in the DBMS?
- viii) What are the different types of relationships in the DBMS?
- ix) Explain the terms specialization and generalization.
- x) What is DKNF?

2. What are indexes? Mention the differences between the clustered and non-clustered indexes.
3. Consider the Sailors-Boats-Reserves Database given below with name and fields :
- S (sid, sname, rating, age)
- b (bid, bname, color)
- r (sid, bid, date)

Write each of the following queries in SQL alongwith the explanation for each

- (i) Find all sailor id's of sailors who have a rating df at least 8 or reserved boat with id 103.
 - (ii) Find the sailor id's of sailors with age over 20 who have not reserved a boat whose name includes the string "thunder".
 - (iii) Find the sailor id's of sailors whose-rating is better than some sailor called Bob.
 - (iv) Find the colors of boats reserved by Albert.
4. UPS prides itself on having up-to-date information on the processing and current location of each shipped item. To do this, UPS relies on a company-wide information system. Shipped items are the heart of the UPS product tracking information system. Shipped items can be characterized by item number (unique), weight, dimensions, insurance amount, destination, and final delivery date. Shipped items are received into the UPS system at a single retail center. Retail centers are characterized by their type, unique ID, and address. Shipped items make their way to their destination via one or more standard UPS transportation events (i.e., flights, truck deliveries). These transportation events are characterized by a unique schedule Number, a type (e.g., flight, truck), and a delivery Route. Please create an Entity Relationship diagram that captures this information; about the UPS system. Be certain to indicate identifiers and cardinality constraints.
5. How database recovery is maintained in DBMS? Give a scenario and explain in detail.
 6. What is concurrency management? Explain 2P in detail.
 7. Explain join dependency and how they are maintained?

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DATABASE MANAGEMENT SYSTEMS

Subject Code : UGCA1922

M.Code : 79726

Date of Examination: 09-12-2024

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. Write briefly:

- a. DML
- b. Data Redundancy
- c. Relational DBMS
- d. DCL
- e. ER Model
- f. Dependency
- g. Database Trigger
- h. Database Integrity
- i. Stored Procedure
- j. Concurrency Management

SECTION-B

2. Write a note on the comparison of Hierarchical, Network and Relational Model.
3. Explain in detail the Role Played by Relational Algebra and Calculus.
4. Explain the Role of Normalization and its types on Student Address Database.
5. Explain in detail Database Recovery and Database Security.
6. Write a note on Design of Distributed Databases.
7. Explain in detail the Concept of Multivalued Dependencies with suitable Examples.

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INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
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SECTION - A

1. Write briefly :

- a. Define view level.
- b. Limitations of hierarchical data model.
- c. Difference between alter and update.
- d. List the two DDL statements.
- e. Why do we need Normalization?
- f. What is cursor?
- g. Define the term functional dependence.
- h. What is log base recovery?
- i. What is the difference between authorization and authentication?
- j. List the different file operations.

SECTION - B

2. Discuss data redundancy, data inconsistency, data integrity, security and concurrent access.
3. Discuss Hierarchical, Network, Relational and Object-Oriented Models.
4. Why do we need the concept of keys in DBMS? Discuss Primary Key, Candidate Key, Foreign Key, Super Key and Composite Key with the help of suitable example.
5. Discuss how normalization removes redundancy and improves data integrity. Explain 1NF, 2NF and 3NF.
6. What are joins in SQL? Explain the different types of joins with examples.
7. What is concurrency control? Explain the different concurrency control techniques.

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