GATE

DS&AI

Warehousing

Data Normalization , Concept Hierarchy , Data Compression

Q1 Data normalization in data warehousing is primarily used to:
(A) Increase redundancy
(B) Organize data in a way that reduces duplication
(C) Speed up query execution
(D) Aggregate data

Q2 Which of the following is the primary goal of normalizing data in a relational database?
(A) Improve data retrieval speed
(B) Reduce data redundancy
(C) Increase complexity of the database
(D) Simplify database design

Q3 What is the purpose of concept hierarchies in a data warehouse?
(A) To categorize data into different levels of abstraction
(B) To filter data based on time
(C) To aggregate large amounts of data
(D) To normalize the data for faster queries

Q4 Which of the following is an example of a concept hierarchy in a sales database?
(A) Year → Quarter → Month → Day
(B) Product ID → Product Name
(C) Customer Address → Customer Name
(D) Price → Discount → Tax

Q5 What is the primary advantage of using data normalization in a database?
(A) Faster query execution
(B) Reduced data redundancy and improved data integrity
(C) Improved data compression
(D) Easier data migration

Q6 In data warehousing, a "concept hierarchy" enables:
(A) Faster data updates
(B) Easier data compression
(C) The representation of data at different levels of granularity
(D) The application of normalization techniques

Q7 Data compression in the context of data warehousing refers to:
(A) Reducing the size of data without losing information
(B) Organizing data into different hierarchies
(C) Aggregating data for faster reporting
(D) Normalizing data to reduce redundancy

Q8 Which of the following is a popular technique used for data compression in databases?
(A) Normalization
(B) Huffman encoding
(C) Indexing
(D) Clustering

Q9 Which of the following is not a benefit of data normalization?
(A) Reduced data redundancy
(B) Improved data integrity
(C) Increased data size
(D) Easier data management

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Answer Key

Q1 (B)

Q2 (B)

Q3 (A)

Q4 (A)

Q5 (B)

Q6 (C)

Q7 (A)

Q8 (B)

Q9 (C)

Hints & Solutions

Q1 **Text Solution:**
Organize data in a way that reduces duplication

Q2 **Text Solution:**
Reduce data redundancy

Q3 **Text Solution:**
To categorize data into different levels of abstraction

Q4 **Text Solution:**
Year → Quarter → Month → Day

Q5 **Text Solution:**
Reduced data redundancy and improved data integrity

Q6 **Text Solution:**
The representation of data at different levels of granularity

Q7 **Text Solution:**
Reducing the size of data without losing information

Q8 **Text Solution:**
Huffman encoding

Q9 **Text Solution:**
Increased data size