

V2V Unit wise VVIMP question bank

Unit_1

2 marks Questions

- What are benefits of well-designed database architecture?
- What is concurrency control and explain its need?
- What are different concurrency control protocols?
- Explain Lock Based Protocol
- What are 2 phase locking protocols?
- Explain the use of two phase locking protocol.
 - It offers Concurrency Control
 - Two Phase Locking offers serializability.
 - It checks for local and global deadlocks and solve them by resuming transactions to their initial states.

4 marks Questions

- Differentiate between shared lock and exclusive lock
- What are 2 phase locking protocols?
- Explain client-server database system architecture
- With the help of diagram describe transaction server.
- Differentiate between transaction server and data server.

6 marks Questions

- Explain centralized database system with neat diagram, its advantages and disadvantages.
- What are different types of client-server architecture? (single-tier, two-tier, three-tier)
- Explain server system architecture with its types. (single server, multi-server, distributed server)

Unit_2

2 marks Questions

- What is Distributed Database?
- What is DDBMS
- Enlist applications in DDBMS
- **Write any two benefits of distributed database system.**

There are following advantages of DDBMS:

- Reflects organizational structure
- Improved share ability and local autonomy
- Improved availability
- Improved reliability
- Improved Performance
- Economics
- Modular growth

4 marks Questions

- What is parallel database system? Explain its advantages and disadvantages.
- What are the Measures of performances of parallel database system

- Explain architecture of DDBMS – explain two types
- Enlist advantages and disadvantages of Distributed Database System
- Differentiate between parallel DB and distributed DB
- what are the benefits and challenges of transaction processing?

6 marks Questions

- Explain types of parallel database architectures:
- What is a transaction? What are the states and properties of transaction?
- Explain transaction processing in parallel database system
- Explain transaction processing system in distributed database system

Unit_3

2 marks Questions

- Describe objects and Identities
- Define: complex objects, encapsulation & polymorphism
- what are classes and inheritance
- what is OO (Object Oriented Database) Advantages?
- Explain parts of XML Documents
- What is Namespace in XML?
- Give any four characteristics of XML.
- Explain the term XQuery (FLOWER Expression)

4 marks Questions

- Explain Complex Data types
- What is Inheritance in SQL?
- Explain - Types of inheritance in SQL
- Explain Concept of Overriding and Overloading
- Explain 'Array and Multiset types' in SQL
- Write down Features of OODBMS.
- write down Features of ORDBMS (object – relational database)
- Differentiate between OODBMS and ORDBMS
- What is XML? Write short note on XML
- Explain Structure of XML data with an example
- Explain XML attributes with example
- Explain the term XPath
- Difference between XQuery and XPath

6 marks Questions

- Explain in detail - Object oriented Database Management System (OODBMS)?
- Explain Structured types in SQL
- What is XML schema?
- Explain in detail - XQuery (FLOWER Expression)

Unit_4

2 marks Questions

- Depict Structured versus unstructured data
- What is CAP and BASE Theorems (Brewer Theorem)
- Write any four benefits of NOSQL.

Ans:

- Less need for Extract, Transform and Load (ETL)
- Support for unstructured text
- Ability to handle change over time
- No reliance on SQL magic
- Easy to Scale.
- Breadth of functionality
- Support for multiple data structures
- Vendor choice
- No legacy code
- Executing code next to the data
- Schema less
- Adhoc queries support
- Indexing
- Replication : Provides high availability with replica set.
- Grid file storage system

4 marks Questions

- Differentiate Between Structured data and Unstructured data
- What is NoSQL?
- Explain different types of NoSQL database
- What are the Benefits and disadvantages of NoSQL?
- Comparison between SQL and NoSQL database system
- **Explain basic datatypes and arrays in MongoDB.**

6 marks Questions

- Write notes on NoSQL Using MONGODB
- Explain any two basic operation with Mongo DB shell/ Explain CRUD operations
- **Write query to excate find() function on collection: Inventory.**
 - (i) to display all document in collection
 - (ii) to display all document where status equals "A" and qty is less than 40.
 - (iii) to display all documents where status equals "A" and qty is less than 40 or item starts with character S.

Ans:

(i) to display all document in collection: `Db.inventory.find()`

(ii) to display all document where status equals "A" and qty is less than 40:

`Db.inventory.find({$and : [{"status": "A"}, {"qty" : {$lt:40}]})`

(iii) to display all documents where status equals "A" and qty is less than 40 or item starts with character S:
`Db.inventory.find({$and : [{"status": "A"}, {$or:[{"qty":{$lt :40}}, {item: {$regex: "S"}}]})`

OR

`Db.inventory.find({$and : [{"status": "A"}, {$or:[{"qty":{$lt :40}}, {item: "/^S/"}]})`

2 marks Questions

- Define
 - a) Data Warehouse (DW)
 - b) Data Mining
 - c) Data Warehousing
- What is Regression
- Describe the application of data mining.
- Enlist Data Mining Techniques.

Ans: Classification, Clustering, Regression, Prediction, Association rules, Sequential patterns, Data cleaning, Data visualization, machine learning.

4 marks Questions

- Write notes on Data Warehousing
- Write notes on Virtual warehouse
- Write notes on Data extraction
- Write notes on Data Mining
- State key differences between data mining and data warehouse
- What is Data Visualization, Explain the key Benefits of Data Visualization
- Comparison between Data Warehouse, Data Lake, Lakehouse

6 marks Questions

- Three-Tier Architecture of Data Warehouse
- Architecture of data mining process
- Discuss Clustering in Data Mining
- Discuss Architecture of the Data Lakehouse
- Explain Data Warehousing life cycle