SQL Worksheet Answers

Objective Questions

Q1.

Ans : DDL Commands : A. Create

D. Alter

Q2.

Ans: DML Commands: A. Update

B. Delete

C. Select

Q3.

Ans: Full Form Of SQL: B) Structured Query Language

Q4.

Ans: Full form of DDL is: B) Data Definition Language

Q5.

Ans: Full form of DML is: A) Data Manipulation Language

Q6.

Ans: C) Create Table A (B int, C float)

Q7.

Ans: B) Alter Table A ADD COLUMN D float

Q8.

Ans: D) None of them

Q9.

Ans: - No correct option provided.

Q10.

Ans: C) Alter Table A Add Primary key B

Subjective Questions:

Q11.

Ans: Data Warehouse -

A data warehouse is a type of data management system that is designed to enable and support business intelligence (BI) activities, especially analytics. Data warehouses are solely intended to perform queries and analysis and often contain large amounts of historical data. The data within a data warehouse is usually derived from a wide range of sources such as application log files and transaction applications.

A data warehouse centralizes and consolidates large amounts of data from multiple sources. Its analytical capabilities allow organizations to derive valuable business insights from their data to improve decision-making. Over time, it builds a historical record that can be invaluable to data scientists and business analysts. Because of these capabilities, a data warehouse can be considered an organization's "single source of truth.

A typical data warehouse often includes the following elements:

- A relational database to store and manage data
- An extraction, loading, and transformation (ELT) solution for preparing the data for analysis
- Statistical analysis, reporting, and data mining capabilities
- Client analysis tools for visualizing and presenting data to business users
- Other, more sophisticated analytical applications that generate actionable information by applying data science and artificial intelligence (AI) algorithms

Q12.

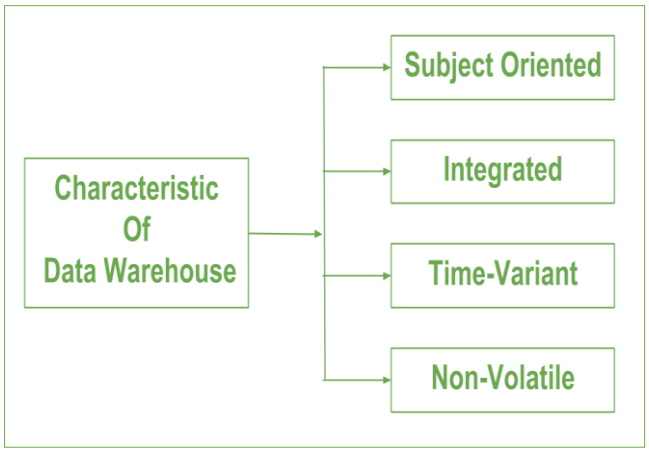
Ans: Difference Between OLTP and OLAP:

Sr. No.	Key	OLAP	OLTP
1.	Abbreviation	On-Line Analytical Processing	On-Line Transactional processing.
2.	Basic	It is used for data analysis	It is used to manage very large number of online short transactions
3.	Database Type	It uses data warehouse	It uses traditional DBMS
4.	Data Modification	It manages all insert, update and delete transaction	It is mainly used for data reading
5.	Response time	Processing is little slow	In Milliseconds
6.	Normalization	Tables in OLAP database are not normalized.	Tables in OLTP database are normalized.

Q13.

Ans: Characteristics of Data Warehousing –

Below are major characteristics of data warehouse:



1. **Subject-oriented -**
   A data warehouse is always a subject oriented as it delivers information about a theme instead of organization's current operations. It can be achieved on specific theme. That means the data warehousing process is proposed to handle with a specific theme which is more defined. These themes can be sales, distributions, marketing etc.

   A data warehouse never put emphasis only current operations. Instead, it focuses on demonstrating and analysis of data to make various decision. It also delivers an easy and precise demonstration around particular theme by eliminating data which is not required to make the decisions.

2. **Integrated -**
   It is somewhere same as subject orientation which is made in a reliable format. Integration means founding a shared entity to scale the all similar data from the different databases. The data also required to be resided into various data warehouse in shared and generally granted manner.

   A data warehouse is built by integrating data from various sources of data such that a mainframe and a relational database. In addition, it must have reliable naming conventions, format and codes. Integration of data warehouse benefits in effective analysis of data. Reliability in naming conventions, column scaling, encoding structure etc. should be confirmed. Integration of data warehouse handles various subject related warehouse.

3. **Time-Variant -**
   In this data is maintained via different intervals of time such as weekly, monthly, or annually etc. It founds various time limit which are structured between the large datasets and are held in online transaction process (OLTP). The time limits for data warehouse is wide-ranged than that of operational systems. The data resided in data warehouse is predictable with a specific interval of time and delivers information from the historical perspective. It comprises elements of time explicitly or implicitly. Another feature of time-variance is that once data is stored in the data warehouse then it cannot be modified, alter, or updated.

4. **Non-Volatile -**
   As the name defines the data resided in data warehouse is permanent. It also means that data is not erased or deleted when new data is inserted. It includes the mammoth quantity of data that is inserted into modification between the selected quantity on logical business. It evaluates the analysis within the technologies of warehouse.

   In this, data is read-only and refreshed at particular intervals. This is beneficial in analysing historical data and in comprehension the functionality. It does not need transaction process, recapture and concurrency control mechanism. Functionalities such as delete, update, and insert that are done in an operational application are lost

in data warehouse environment. Two types of data operations done in the data warehouse are:

- Data Loading
- Data Access

Q14.
Ans: Star Schema –

Star Schema in data warehouse, in which the centre of the star can have one fact table and a number of associated dimension tables. It is known as star schema as its structure resembles a star. The Star Schema data model is the simplest type of Data Warehouse schema. It is also known as Star Join Schema and is optimized for querying large data sets.

Q15.

Ans: ETL:

ETL is a process that extracts the data from different source systems, then transforms the data (like applying calculations, concatenations, etc.) and finally loads the data into the Data Warehouse system. Full form of ETL is Extract, Transform and Load.

It's tempting to think a creating a Data warehouse is simply extracting data from multiple sources and loading into database of a Data warehouse. This is far from the truth and requires a complex ETL process. The ETL process requires active inputs from various stakeholders including developers, analysts, testers, top executives and is technically challenging.

In order to maintain its value as a tool for decision-makers, Data warehouse system needs to change with business changes. ETL is a recurring activity (daily, weekly, monthly) of a Data warehouse system and needs to be agile, automated, and well documented.