WORKSHEET 1 SQL

1. A,C,D
2. A,B,C
3. B
4. B
5. A
6. D
7. B
8. B
9. B
10. C

11. What is data-warehouse?
ANSWER: A data warehouse is a central repository of information that can be analyzed to make more informed decisions. Data flows into a data warehouse from transactional systems, relational databases, and other sources, typically on a regular cadence.

12. What is the difference between OLTP VS OLAP?
ANSWER: Online Analytical Processing (OLAP): Online Analytical Processing consists of a type of software tools that are used for data analysis for business decisions. OLAP provides an environment to get insights from the database retrieved from multiple database systems at one time. Examples –
 Any type of Data warehouse system is an OLAP system. The uses of OLAP are as follows:
Spotify analyzed songs by users to come up with a personalized homepage of their songs and playlist.
Netflix movie recommendation system.

Online transaction processing (OLTP): Online transaction processing provides transaction-oriented applications in a 3-tier architecture. OLTP administers the day-to-day transactions of an organization.
Examples: Uses of OLTP are as follows:
ATM center is an OLTP application.
OLTP handles the ACID properties during data transactions via the application.
It's also used for Online banking, Online airline ticket booking, sending a text message, add a book to the shopping cart.
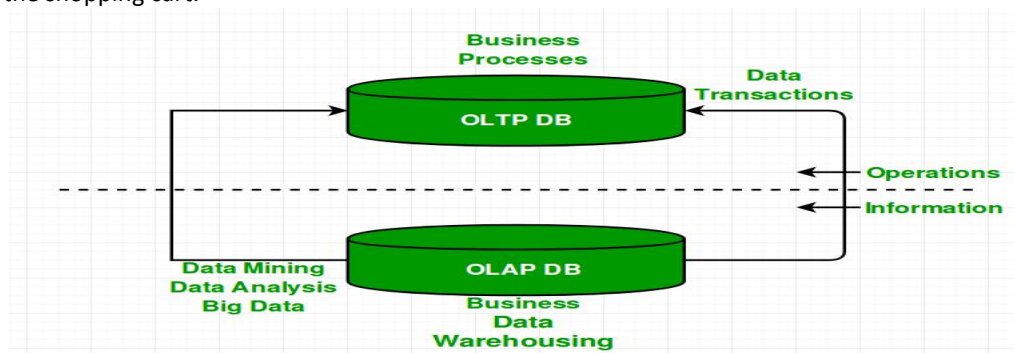
13. What are the various characteristics of data-warehouse?
ANSWER:
Subject Oriented
Integrated
Non-volatile
Time Variant
Subject Oriented

Subject Oriented

A data warehouse is subject oriented because it provides information around a subject rather than the organization's ongoing operations.

These subjects can be product, customers, suppliers, sales, revenue, etc. A data warehouse does not focus on the ongoing operations, rather it focuses on modelling and analysis of data for decision making.

Integrated

A data warehouse is constructed by integrating data from heterogeneous sources such as relational databases, flat files, etc.

This integration enhances the effective analysis of data.

Time Variant

The data collected in a data warehouse is identified with a particular time period.

The data in a data warehouse provides information from the historical point of view.

Non-volatile

Non-volatile means the previous data is not erased when new data is added to it.

A data warehouse is kept separate from the operational database and therefore frequent changes in operational database is not reflected in the data warehouse.

The key characteristics of a data warehouse are as follows:

Some data is denormalized for simplification and to improve performance.

Queries often retrieve large amounts of data.

Both planned and ad hoc queries are common.

The data load is controlled.

In general, high data throughput is the key to a successful data warehouse

OR

Data warehouses are characterized by being:

Subject-oriented: A data warehouse typically provides information on a topic (such as a sales inventory or supply chain) rather than company operations.

Time-variant: Time variant keys (e.g., for the date, month, time) are typically present.

Integrated: A data warehouse combines data from various sources. These may include a cloud, relational databases, flat files, structured and semi-structured data, metadata, and master data. The sources are combined in a manner that's consistent, relatable, and ideally certifiable, providing a business with confidence in the data's quality.

Persistent and non-volatile: Prior data isn't deleted when new data is added. Historical data is preserved for comparisons, trends, and analytics.

Data warehouse components are engineered for speed. When results are accessible quickly, they can be analyzed on the fly.

14. What is a star schema?
ANSWER: A star schema is a database organizational structure optimized for use in a data warehouse or business intelligence that uses a single large fact table to store transactional or measured data, and one or more smaller dimensional tables that store attributes about the data. It is called a star schema because the fact table sits at the center of the logical diagram, and the small dimensional tables branch off to form the points of the star.

15. What do you mean by SETL?
ANSWER: (SET Language) is a very high-level programming language based on the mathematical theory of sets. It was originally developed by (Jack) Jacob T.