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

11. A Data Warehouse (DW) is a relational database that is designed for query and analysis rather than transaction processing. It includes historical data derived from transaction data from single and multiple sources. A Data Warehouse provides integrated, enterprise-wide, historical data and focuses on providing support for decision-makers for data modeling and analysis. A Data Warehouse is a group of data specific to the entire organization, not only to a particular group of users. It is not used for daily operations and transaction processing but used for making decisions.

12. OLAP VS OLTP (Online Analytical processing vs Online transaction processing)

    i.   OLAP is a query management system while OLTP is a database modifying system.

    ii.   OLAP consists of past data whereas OLTP consists of operational current data.

    iii.   OLAP uses a data warehouse while OLTP uses DBMS(database management system).

    iv.   OLAP is used for Decision making while OLTP is used for Business tasks.

    v.   OLAP is used for decision making while OLTP is used for day-to-day operations

    vi.   OLAP's major purpose is decision-making and analysis while of OLTP is updating information in the database.

    vii.   OLAP size may be in TB or PB while OLTP is in MB or GB

    viii.   OLAP is relatively slow as it contains a huge amount of data and OLTP is super fast

    ix.   OLAP may not be updated often while OLTP is needed to be updated regularly.

    x.   OLAP may be backed up from time to time while OLTP is backed up almost daily

xi. OLAP queries may be complex relative to OLTP

xii. OLAP data is handled by higher authorities while OLTP is handled by normal users.

xiii. Mostly read operation is carried out in OLAP while in OLTP read and write are carried out.

xiv. Updating OLAP requires a large amount of time relative to OLTP

xv. OLAP helps improve business efficiency while OLTP helps improve user's productivity.

13. Characteristics of data-warehouse:

   a. 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.

   b. Integrated

   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.

c. 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.

d. 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.

14. 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. A fact table sits at the center of a star schema database, and each star schema database only has a single fact table. The fact table contains the specific measurable (or

quantifiable) primary data to be analyzed, such as sales records, logged performance data or financial data.

15. SETL means SET language. It is basically used to represent collection of objects. It is a very high-level programming language based on the mathematical theory of sets.