

## **GE : Database Management System (Sem- III)**

### **CHAPTER-2**

#### **Database System Concepts and Architecture**

##### **ONE MARK QUESTIONS**

1. What do you mean by Self describing data model? How it is different from traditional data models.

**(Ans. Section 2.1.1 page number 34.)**

**(Self describing data model is a type of data model that suggests to store the actual data and metadata at the same storage space, unlike traditional data models that suggests to store the meta data and actual data in different storage places.)**

2. Give one example of self describing databases.

**(Ans. Section 2.1.1 page number 34.)**

**(NoSQL database system.)**

3. What do you mean by Mappings in context of a database?

**(Ans. Section 2.2.1 page number 37.)**

##### **TWO MARKS QUESTIONS**

4. Briefly explain the Client-server architecture for a distributed system.

**(Ans. Page number 31.)**

5. What do you mean by a data model? What constitutes the *behavior of a database* application?

**(Ans. Section 2.1 page number 32.)**

6. Briefly explain each of the following term-

a. Data Abstraction

**(Ans. Data abstraction is the process of hiding the storage and implementation details, and highlighting only the essential data concepts.)**

b. Database Schema

**(Ans. Database schema refers to the definition(or structure) of the database. This is specified during database design. Database schema is not expected to change frequently. It is also known as the intension of a database.)**

c. Database state

**(Ans. Database state refers to the collection of all data records stored in a database at any point of time. This does change frequently. It is also known as snapshot, or a set of occurrences/instances. Sometimes, it's also referred as the extension of a database.)**

d. Database instance

**(Ans. A database instance refers to a data record (i.e. row/tuple) stored inside a table within a database.)**

e. Schema Construct

**(Ans. Every object within a database, is called a schema construct. This includes database tables, views, domains etc)**

f. Schema Evolution

**(Ans. Schema Evolution is the process of modifying the database schema to accommodate latest user/application requirements. Although, a database schema is not expected to change frequently, however as user or application requirements for a system evolves/changes with time, it is important to reflect those changes in the schema as well.)**

**(P.S. : After each term's description, you can add an example.)**

7. Differentiate between the terms *Intention* and *Extension* in context of a database.

AKA

Differentiate between the database schema and database state.

**(Ans. Section 2.1.2 page number 35.)**

8. Explain the role of stored data manager within a DBMS.

**(Ans. Section 2.4.1 page number 42.)**

9. Explain the roles of DDL compiler and DML compiler within a DBMS.

**(Ans. Section 2.4.1 page number 42, 44.)**

10. Differentiate between the query compiler and pre-compiler modules of a DBMS.

**(Ans. Section 2.4.1 page number 43, 44.)**

11. Explain the role of query optimizer in a DBMS.

12. **(Ans. Section 2.4.1 page number 44.)**

13. Explain following terms:

- a. SDL
- b. DDL
- c. DML
- d. VDL

**(Ans. Section 2.3.1 page number 39.)**

14. Differentiate between high-level DML and low-level DML.

**(Ans. Section 2.3.1 page number 40.)**

### THREE MARKS QUESTIONS

15. Explain different categories of data models. Give examples, wherever possible.

**(Ans. Section 2.1.1 page number 33.)**

16. Explain the 3-schema architecture of a database system, along with block diagram.

**(Ans. Section 2.2.1 page number 36.)**

17. Explain the role of Runtime Database Processor in detail.

**(Ans. Section 2.4.1 page number 44.)**

### FIVE MARKS QUESTIONS

18. Explain following terms:

- a. Logical Data Independence
- b. Physical Data Independence

**(Ans. Section 2.2.2 page number 37.)**

19. Explain different modules of a DBMS in detail. Also provide a block diagram for the same.

**(Ans. Section 2.4.1 page number 42.)**