# Unit:- 1

1. a) To store and manage data

2. b) Database, DBMS software, and users

3. d) All of the above

4. a) Presentation layer, application layer, and database layer

5. a) The ability to change the database schema without changing the application program

6. d) All of the above

7. b) The actual database as it exists at a particular moment in time

8. a) The process of designing a database schema

9. a) A data model used to design relational databases

10. a) A data model that organizes data into one or more tables

11. a) A set of data organized into rows and columns

12. a) A column or set of columns that uniquely identifies a row in a table

13. c) A column or set of columns that references a primary key in another table

14. a) A way of combining data from two or more tables based on a related column

15. a) A virtual table that is created from the data in one or more tables

16. a) A unit of work that is performed by a database user or application

17. a) A set of properties that ensure reliable processing of transactions

18. a) A set of instructions that are automatically executed by the database system in response to a specific event

19. a) A precompiled program that is stored in the database and can be executed by a user or application

20. a) A data structure used to improve the performance of queries on a table

21. a) A set of rules used to enforce data integrity

22. a) The duplication of data in a database

23. a) The process of removing data redundancy from a database

24. a) The process of introducing data redundancy into a database for performance reasons

25. a) A large, centralized repository of data from multiple sources

26. a) The process of analyzing large amounts of data to discover patterns and relationships

27. a) Online Analytical Processing

28. a) Online Transaction Processing

29. a) A copy of the database used for recovery in case of a failure

30. a) The process of restoring a database to a consistent state after a failure

31. a) The person responsible for managing the database system

32. a) The process of creating a conceptual representation of data

33. a) A data model used to describe the structure of data in a database

34. a) A connection between two entities

35. a) The number of instances of one entity that can be associated with an instance of another entity

36. a) A data model used to describe the structure of data in a database

37. a) A two-dimensional representation of data in rows and columns

38. a) An attribute or set of attributes that uniquely identifies each row in a table

39. a) An attribute or set of attributes in one table that refers to the primary key in another table

40. a) A way to combine data from two or more tables based on a related attribute

# Unit 2:-

1. What is the Relational Query Language (RQL)?

b) A query language used to retrieve and manipulate data in a relational database

2. What is relational algebra?

b) A set of mathematical operators used to manipulate data in a relational database

3. What is a Data Definition Language (DDL)?

a) A language used to define and modify the structure of a database

4. What is Data Manipulation Language (DML)?

b) A language used to retrieve and manipulate data in a database

5. What is Transaction Control Language (TCL)?

c) A language used to control transactions in a database

6. What are integrity constraints in DBMS?

a) Rules that must be enforced to maintain the integrity of the database

7. What are database keys?

a) Attributes or sets of attributes that uniquely identify each row in a table

8. What is SQL?

b) A query language used to retrieve and manipulate data in a relational database

9. What are the basic operations in SQL?

a) SELECT, INSERT, UPDATE, DELETE

10. What are Aggregate functions in SQL?

a) Functions that perform a calculation on a set of values and return a single value

11. What are SQL Joins?

a) A way to combine data from two or more tables based on a related attribute

12. What are set operators in SQL?

a) Operators used to perform operations on two or more sets of data

13. What are views in SQL?

a) Virtual tables that do not actually exist in the database

14. What is a database trigger in SQL?

a) A program that automatically executes in response to certain events

15. What is the purpose of the SELECT statement in SQL?

a) To retrieve data from a table or set of tables

16. What is the purpose of the INSERT statement in SQL?

b) To insert data into a table

17. What is the purpose of the UPDATE statement in SQL?

c) To update data in a table

18. What is the purpose of the DELETE statement in SQL?

c) To delete data from a table

19. What is a stored procedure in SQL?

a) A set of SQL statements that can be executed as a single unit

20. What is a cursor in SQL?

a) A pointer to a row in a table

21. What is a trigger in SQL?

a) A program that is automatically executed in response to certain events

22. What is a constraint in SQL?

a) A rule that must be enforced to maintain the integrity of the database

23. What is a primary key in SQL?

a) A constraint that uniquely identifies each row in a table

24. What is a foreign key in SQL?

a) A constraint that refers to the primary key of another table

25. What is a join in SQL?

a) A way to combine data from two or more tables based on a related attribute

26. What is an inner join in SQL?

a) A join that returns only the rows that have matching values in both tables

27. What is an outer join in SQL?

a) A join that returns all the rows from one table and matching rows from another table

28. What is a left outer join in SQL?

a) A join that returns all the rows from the left table and matching rows from the right table

29. What is a right outer join in SQL?

a) A join that returns all the rows from the right table and matching rows from the left table

30. What is a full outer join in SQL?

a) A join that returns all the rows from both tables

31. What is a view in SQL?

a) A virtual table that is based on the result of a SQL statement

# Unit 3: -

1. d
2. b

3. a

4. d

5. c

6. d

7. d

8. c

9. d

10. c

11. d

12. d

13. d

14. d

15. d

16. d

17. a

18. d

19. c

20. a

21. d

22. b

23. d

24. d

25. d

26. a

27. a

28. d

29. d

30. d

31. a

32. b

33. b

34. a

35. d

36. a

37. d

38. a

39. d

40. d

# Unit 4:-

1. c) A set of instructions that are executed as a single unit of work.

2. a) Atomicity, consistency, isolation, durability.

3. a) Atomicity.

4. c) T1: read(A), write(B); T2: read(B), write(A).

5. a) A sequence of instructions that can be executed concurrently.

6. b) A schedule in which transactions are executed sequentially.

7. c) T1: read(A), write(B); T2: read(B), write(A).

8. a) The property that a schedule can be transformed into a serial schedule.

9. a) T1: read(A), write(B); T2: read(B), write(C); T3: read(C), write(A).

10. c) The process of ensuring that transactions are executed concurrently.

11. b) To prevent conflicts between concurrent transactions.

12. a) T1: read(A), write(B); T2: read(A), write(C).

13. c) To prevent conflicts between concurrent transactions.

14. a) T1: read(A); T2: read(B); T3: read(C).

15. d) T1: read(A); T2: write(A); T3: write(A).

16. a) A situation in which two transactions are waiting for each other to release locks.

17. c) To provide a record of all transactions that have been executed.

18. b) T1: read(A), write(B); T2: read(B), write(C); T3: read(D), write(C).

19. d) To reduce the amount of work required during database recovery.

20. a) T1: read(A), write(B); T2: read(B), write(C); T3: read(C), write(D).

21. c) To ensure that transactions are either all committed or all aborted.

22. b) T1: read(A), read(B); T2: read(C), read(D); T3: read(E), read(F).

23. c) To provide a record of all changes made to the database.

24. c) T1: read(A), write(B); T2: read(B), write(C); T3: read(D), write(E).

25. a) T1: read(A), write(B); T2: read(B), write(C); T3: read(C), write(A).

26. c) To identify and resolve deadlocks between transactions.

27. c) T1: read(A), write(B); T2: read(B); T3: read(A), read(B).

28. c) To restore the database to a consistent state after a failure.

29. b) T1: read(A), write(B); T2: read(B), write(C); T3: read(A), write(C).

30. b) T1: read(A), write(B); T2: read(B), write(A); T3: read(C), write(D).

31. b) To prevent conflicts between concurrent transactions.

32. c) T1: read(A), write(B); T2: read(B), write(C); T3: read(A), read(C).

33. b) To prevent conflicts between concurrent transactions.

34. b) T1: read(A), write(B); T2: read(B), write(C); T3: read(A), read(B).

35. d) To aid in database recovery after a failure.

36. a) T1: read(A), write(B); T2: read(B), write(C); T3: read(C), write(D).

# Unit 5:-

1. d) stored procedure

2. a) To perform a specific task and return a value

3. a) They are used to execute a set of SQL statements in a specific order

4. a) A control structure used to iterate through a set of data in a database

5. a) To perform an action in response to a change in a database table

6. c) Database exception

7. c) for loop

8. a) They can be reused in different parts of a program

9. a) To execute a set of SQL statements in a specific order

10. a) To iterate over a set of data in a database

11. a) To perform an action in response to a change in a database table

12. c) if-else statement

13. a) They can improve performance by reducing network traffic

14. d) Stored cursor

15. a) To handle errors and unexpected events in a program

16. c) for loop

17. a) To perform a specific task and return a value

18. a) They can decrease performance by increasing database overhead

19. d) Inefficiency

20. c) if-else statement

21. a) They are used to execute a set of SQL statements in a specific order

22. a) A control structure used to iterate through a set of data in a database

23. a) To perform an action in response to a change in a database table

24. c) Database exception

25. c) break statement

26. a) To perform a specific task and return a value

27. d) for loop

28. a) To execute a set of SQL statements in a specific order

29. b) They can be difficult to debug and maintain

30. d) Scalability

31. a) A set of SQL statements that are executed in response to a database event

32. a) They are used to iterate through a set of data in a database

33. b) switch-case statement

34. d) Complexity

35. d) DDL statements

36. a) Flexibility

37. a) To handle errors and unexpected events in a program

38. d) continue statement

39. c) CREATE statement

40. d) Concurrency control mechanisms

# Unit 6:-

1. b) It refers to the structure used to store data in a database file.

2. d) Sequential, indexed, clustered.

3. a) A database object used to organize data for faster retrieval.

4. a) B-tree, hash, binary.

5. c) A technique used to index data in a database.

6. a) Linear, quadratic, chained.

7. a) A term used to describe large amounts of data that cannot be processed by traditional methods.

8. a) Databases that do not use SQL for querying data.

9. b) Data is stored in a sequence that is determined by a key field.

10. a) Data is stored in a sequence that is determined by a key field.

11. c) Data is stored in a sequence that is determined by a key field.

12. a) An indexing technique used for faster retrieval of data.

13. c) A hashing technique used for indexing data.

14. a) An index that is based on the physical order of data in a table.

15. b) An index that is based on the logical order of data in a table.

16. a) A programming construct used to manipulate data in a database.

17. c) A type of programming construct used to perform a specific task.

18. d) A mechanism for traversing through data in a database.

19. a) Database objects that execute a set of actions in response to an event.

20. a) A mechanism for handling errors in a database.

21. a) Atomicity, consistency, isolation, durability.

22. a) It ensures that a transaction is either completed in its entirety or not at all.

23. a) It ensures that a transaction leaves the database in a valid state.

24. a) It ensures that a transaction is isolated from other transactions until it is completed.

25. a) It ensures that the effects of a transaction persist even in the event of a failure.

26. a) A sequence of instructions that represent a series of transactions.

27. a) A property that guarantees that a set of concurrent transactions will produce the same results as if they were executed serially.

28. a) The process of managing the simultaneous execution of multiple transactions in a database.

29. a) The ability to restore the database to a consistent state after a failure.

30. a) A method used to store data in a database.

31. a) Sequential, indexed sequential, random.

32. a) A mechanism used to speed up data retrieval from a database.

33. b) Clustered, non-clustered, binary.

34. a) A technique used to quickly locate data in a database.

35. a) Linear hashing, quadratic hashing, double hashing.

36. a) A term used to describe large and complex datasets.

37. a) A type of database management system that is designed to handle unstructured and semi-structured data.

38. d) All of the above.

39. d) All of the above.

40. a) A mechanism used to handle errors and exceptions that occur during program execution.