

DB Programming Multiple Choice Questions (MCQs)

◆ Group 1: Database Keys & Constraints

- 1. Which constraint uniquely identifies each row in a table?**
 - A. Foreign Key
 - B. Duplicate Key
 - C. Primary Key
 - D. Check Constraint
- 2. A Foreign Key is used to:**
 - A. Store unique values
 - B. Reference a Primary Key in another table
 - C. Enforce data type
 - D. Delete duplicate rows
- 3. Which constraint prevents NULL values in a column?**
 - A. CHECK
 - B. UNIQUE
 - C. NOT NULL
 - D. DEFAULT
- 4. A Primary Key can consist of:**
 - A. Only one column
 - B. One or Multiple columns
 - C. Only numeric values
 - D. Only string values
- 5. Which constraint ensures uniqueness but allows NULL values?**
 - A. PRIMARY KEY
 - B. UNIQUE
 - C. CHECK
 - D. FOREIGN KEY
- 6. Referential integrity is enforced by:**
 - A. CHECK
 - B. FOREIGN KEY
 - C. DEFAULT
 - D. INDEX

◆ **Group 2: SQL Command Categories**

7. **Which category does the CREATE command belong to?**

- A. DML
- B. DCL
- C. DDL
- D. TCL

8. **INSERT, UPDATE, and DELETE belong to which category?**

- A. DDL
- B. DML
- C. DCL
- D. DQL

9. **SELECT is classified as:**

- A. DML
- B. DQL
- C. DCL
- D. TCL

10. **Which command is used to provide user permissions?**

- A. REVOKE
- B. GRANT
- C. COMMIT
- D. DROP

11. **Which command removes user permissions?**

- A. GRANT
- B. REVOKE
- C. DELETE
- D. ALTER

12. **Which category manages transactions?**

- A. DDL
- B. DCL
- C. TCL
- D. DQL

13. Which of the following is a DDL command?
- A. UPDATE
 - B. CREATE
 - C. SELECT
 - D. INSERT
14. Which of the following is a DML command?
- A. ALTER
 - B. DROP
 - C. INSERT
 - D. GRANT
15. Which command modifies an existing table structure?
- A. CREATE
 - B. ALTER
 - C. DELETE
 - D. SELECT
16. Which command removes a table and all its data?
- A. DELETE
 - B. TRUNCATE
 - C. DROP
 - D. REMOVE
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◆ **C: SQL Server Management Studio (SSMS)**

17. **Object Explorer in SSMS displays:**

- A. Only tables
- B. Only views
- C. All database objects
- D. Only stored procedures

18. **The Query Window in SSMS is used for:**

- A. Designing ERDs
- B. Writing and executing SQL scripts
- C. Managing users only
- D. Monitoring backups

19. Which button executes SQL statements in SSMS?

- A. Save
- B. Execute
- C. Connect
- D. Refresh

20. SSMS is primarily used for:

- A. Web development
 - B. Managing SQL Server databases
 - C. Graphic design
 - D. Network monitoring
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◆ Group 3: Data Types

21. Which data type is commonly used for IDs?

- A. FLOAT
- B. INT
- C. DATE
- D. CHAR

22. Which data type supports multilingual text such as Arabic?

- A. VARCHAR
- B. CHAR
- C. NVARCHAR
- D. TEXT

23. Which is a fixed-length string data type?

- A. VARCHAR
- B. NVARCHAR
- C. CHAR
- D. XML

24. Which is a variable-length string data type?

- A. CHAR
- B. VARCHAR
- C. NCHAR
- D. BINARY

25. Which data type is most precise for date and time values?

- A. DATETIME
- B. SMALLDATETIME
- C. DATETIME2
- D. TIME

26. Which data type is best for storing large binary files?

- A. NVARCHAR(MAX)
- B. VARBINARY(MAX)
- C. CHAR
- D. INT

27. Which category do INT and FLOAT belong to?

- A. String
- B. Numeric
- C. Binary
- D. Special

28. Which data type is suitable for storing a date of birth?

- A. INT
- B. DATE
- C. FLOAT
- D. CHAR

◆ Group 4: Normalization & Anomalies

29. Which normal form removes repeating groups?

- A. 1NF
- B. 2NF
- C. 3NF
- D. BCNF

30. Which normal form removes partial dependencies?

- A. 1NF
- B. 2NF
- C. 3NF
- D. 4NF

31. **Which normal form removes transitive dependencies?**
- A. 1NF
 - B. 2NF
 - C. 3NF
 - D. BCNF
32. **Normalization primarily helps to:**
- A. Increase redundancy
 - B. Reduce redundancy
 - C. Slow down queries
 - D. Delete data
33. **Which anomaly occurs when data cannot be inserted without other data?**
- A. Update anomaly
 - B. Deletion anomaly
 - C. Insertion anomaly
 - D. Modification anomaly
34. **Which anomaly occurs when deleting a record removes important information?**
- A. Insertion anomaly
 - B. Deletion anomaly
 - C. Update anomaly
 - D. Selection anomaly
35. **Which anomaly occurs when changes are not reflected in all rows?**
- A. Update anomaly
 - B. Deletion anomaly
 - C. Insertion anomaly
 - D. Join anomaly
36. **Normalization is part of which database design step?**
- A. Requirements analysis
 - B. Physical design
 - C. Logical design
 - D. Backup
37. **Which diagram represents entities and their relationships?**
- A. DFD
 - B. ERD
 - C. UML

D. Flowchart

◆ **Transactions**

38. **Which command starts a transaction?**

- A. Run
- B. BEGIN TRANSACTION
- C. OPEN
- D. INIT

39. **Which command permanently saves transaction changes?**

- A. SAVE
- B. COMMIT
- C. ROLLBACK
- D. END

40. **Which command undoes uncommitted changes?**

- A. COMMIT
- B. ROLLBACK
- C. SAVE
- D. DELETE

41. **Which command creates a savepoint within a transaction?**

- A. SAVE TRANSACTION
- B. BACKUP
- C. CHECKPOINT
- D. RESTORE

◆ **Group 5: SQL Operations**

42. **Which command adds new rows to a table?**

- A. UPDATE
- B. INSERT
- C. ALTER
- D. SELECT

43. **Which command modifies existing rows?**

- A. INSERT
- B. UPDATE

C. CREATE

D. DROP

44. **Which command deletes specific rows from a table?**

A. TRUNCATE

B. DELETE

C. DROP

D. REMOVE

45. **Which command retrieves data from a table?**

A. GET

B. SELECT

C. FETCH

D. READ

46. **Which command removes all rows but keeps the table structure?**

A. DELETE

B. TRUNCATE

C. DROP

D. CLEAR

47. **Which command changes the structure of a table?**

A. ALTER

B. UPDATE

C. SELECT

D. INSERT

48. **Which command creates database objects?**

A. CREATE

B. INSERT

C. UPDATE

D. DELETE

49. **Which command deletes both table structure and data?**

A. TRUNCATE

B. DROP

C. DELETE

D. CLEAR

50. **Which clause filters rows in a SELECT statement?**

A. ORDER BY

- B. GROUP BY
 - C. WHERE
 - D. HAVING
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◆ **Added Questions**

51. **Which SQL statement retrieves employee names with age \geq 18?**

- A. SELECT Name FROM Employees WHERE Age \geq 18;
- B. SELECT Age FROM Employees;
- C. INSERT INTO Employees;
- D. DELETE FROM Employees;

52. **Which constraint ensures that values in a column are unique?**

- A. CHECK
- B. UNIQUE
- C. DEFAULT
- D. FOREIGN KEY

53. **Which SQL command category deals with permissions?**

- A. DML
- B. DCL
- C. DDL
- D. TCL

54. **Which SQL command category is used for querying data?**

- A. DQL
- B. DDL
- C. DCL
- D. TCL

55. **Which SQL Server feature allows visualizing database structure?**

- A. Object Explorer
- B. ERD
- C. Query Window
- D. Backup Manager

56. **Which step involves defining relationships between entities?**

- A. Requirements analysis

- B. Logical design
- C. Physical backup
- D. Security configuration

57. Which of the following is a string data type?

- A. INT
- B. DATE
- C. VARCHAR
- D. FLOAT

58. Which of the following is a binary data type?

- A. NVARCHAR
- B. VARBINARY(MAX)
- C. CHAR
- D. DATE

59. Which command is used to give database access to users?

- A. REVOKE
- B. GRANT
- C. DELETE
- D. UPDATE

60. Which command is used to remove all permissions from a user?

- A. GRANT
- B. REVOKE
- C. DROP
- D. ALTER

DB Programming – Multiple Choice Questions (Model B)

◆ Group 1: Database Keys & Constraints

- 1. Which constraint is responsible for uniquely identifying each record in a table?**
 - A. Check Constraint
 - B. Primary Key
 - C. Foreign Key
 - D. Duplicate Key
 - 2. The main purpose of a Foreign Key is to:**
 - A. Define data types
 - B. Ensure uniqueness
 - C. Reference a Primary Key in another table
 - D. Remove duplicate data
 - 3. Which constraint ensures that a column cannot contain NULL values?**
 - A. DEFAULT
 - B. UNIQUE
 - C. NOT NULL
 - D. CHECK
 - 4. A Primary Key may be defined as:**
 - A. Only one column
 - B. A combination of one or more columns
 - C. Only numeric data
 - D. Only character data
 - 5. Which constraint guarantees unique values while still allowing NULLs?**
 - A. FOREIGN KEY
 - B. CHECK
 - C. UNIQUE
 - D. PRIMARY KEY
 - 6. Which constraint is used to maintain referential integrity between tables?**
 - A. INDEX
 - B. DEFAULT
 - C. FOREIGN KEY
 - D. CHECK
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◆ **Group 2: SQL Command Categories**

7. **The SQL command CREATE is categorized under:**
- A. DML
 - B. TCL
 - C. DDL
 - D. DCL
8. **Which category includes the commands INSERT, UPDATE, and DELETE?**
- A. DQL
 - B. DDL
 - C. DML
 - D. DCL
9. **The SELECT statement belongs to which SQL category?**
- A. DCL
 - B. DQL
 - C. DML
 - D. TCL
10. **Which command is used to assign permissions to database users?**
- A. DROP
 - B. COMMIT
 - C. GRANT
 - D. REVOKE
11. **To withdraw permissions from a user, which command should be used?**
- A. GRANT
 - B. ALTER
 - C. REVOKE
 - D. DELETE
12. **Transaction control commands fall under which category?**
- A. DDL
 - B. DCL
 - C. TCL
 - D. DQL
13. **Identify the DDL command from the following options:**
- A. INSERT
 - B. SELECT

- C. UPDATE
- D. CREATE

14. Which of the following commands is considered part of DML?

- A. GRANT
- B. ALTER
- C. INSERT
- D. DROP

15. Which SQL command is used to change the structure of an existing table?

- A. SELECT
- B. DELETE
- C. ALTER
- D. CREATE

16. Which command completely removes a table along with its data?

- A. DELETE
- B. REMOVE
- C. TRUNCATE
- D. DROP

◆ **Group 3: SQL Server Management Studio (SSMS)**

17. In SSMS, which component lists all database objects such as tables and views?

- A. Query Window
- B. Object Explorer
- C. Results Pane
- D. Activity Monitor

18. What is the primary function of the Query Window in SSMS?

- A. Creating backups
- B. Writing and executing SQL statements
- C. Managing security
- D. Monitoring performance

19. Which button is used to run SQL commands in SSMS?

- A. Connect
- B. Refresh

C. Execute

D. Save

20. **SQL Server Management Studio (SSMS) is mainly used for:**

A. Web application development

B. Managing SQL Server databases

C. Graphic editing

D. Network configuration

◆ **Group 4: Data Types**

21. **Which data type is most suitable for storing identifier values?**

A. CHAR

B. DATE

C. FLOAT

D. INT

22. **To store Arabic or multilingual text, which data type should be used?**

A. VARCHAR

B. CHAR

C. NVARCHAR

D. TEXT

23. **Which of the following represents a fixed-length character data type?**

A. VARCHAR

B. NVARCHAR

C. CHAR

D. VARBINARY

24. **Which data type allows storage of variable-length character strings?**

A. NCHAR

B. CHAR

C. VARCHAR

D. BINARY

25. **Which SQL Server data type provides the highest precision for date and time?**

A. DATETIME

B. SMALLDATETIME

- C. TIME
- D. DATETIME2

26. Which data type is most appropriate for storing large binary objects such as images or documents?

- A. CHAR
- B. INT
- C. NVARCHAR(MAX)
- D. VARBINARY(MAX)

27. INT and FLOAT are classified under which data type category?

- A. Binary
- B. Numeric
- C. String
- D. Special

28. Which data type is ideal for storing a person's date of birth?

- A. FLOAT
- B. INT
- C. DATE
- D. CHAR

◆ **Group 5: Normalization & Anomalies**

29. Which normal form eliminates repeating groups in a table?

- A. 2NF
- B. 3NF
- C. 1NF
- D. BCNF

30. Partial dependencies are removed in which normal form?

- A. 1NF
- B. 2NF
- C. 3NF
- D. 4NF

31. Transitive dependencies are eliminated in:

- A. 1NF
- B. 2NF

- C. 3NF
- D. BCNF

32. **The primary objective of normalization is to:**

- A. Increase redundancy
- B. Reduce redundancy
- C. Slow system performance
- D. Delete records

33. **When data cannot be inserted without the presence of other data, this is known as:**

- A. Update anomaly
- B. Deletion anomaly
- C. Insertion anomaly
- D. Join anomaly

34. **Which anomaly occurs when deleting a record unintentionally removes additional important data?**

- A. Insertion anomaly
- B. Update anomaly
- C. Deletion anomaly
- D. Selection anomaly

35. **If updating a value requires changes in multiple rows, it is called:**

- A. Deletion anomaly
- B. Insertion anomaly
- C. Update anomaly
- D. Modification anomaly

36. **Normalization is typically performed during which stage of database design?**

- A. Requirements analysis
- B. Logical design
- C. Physical backup
- D. Security configuration

37. **Which diagram is used to represent entities and their relationships in a database?**

- A. Flowchart
 - B. UML Diagram
 - C. ERD
 - D. DFD
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◆ **Group 6: Transactions**

38. Which statement is used to initiate a transaction?

- A. INIT
- B. OPEN
- C. BEGIN TRANSACTION
- D. RUN

39. Which command finalizes and permanently saves a transaction?

- A. SAVE
- B. COMMIT
- C. ROLLBACK
- D. END

40. To undo changes that have not yet been committed, which command is used?

- A. DELETE
- B. SAVE
- C. COMMIT
- D. ROLLBACK

41. Which command creates a savepoint within an active transaction?

- A. CHECKPOINT
- B. RESTORE
- C. SAVE TRANSACTION
- D. BACKUP

◆ **Group 7: SQL Operations**

42. Which SQL command is used to insert new records into a table?

- A. SELECT
- B. ALTER
- C. INSERT
- D. UPDATE

43. Which command is used to modify existing records in a table?

- A. INSERT
- B. UPDATE
- C. CREATE
- D. DROP

44. **Which command removes specific rows from a table based on a condition?**
- A. TRUNCATE
 - B. DELETE
 - C. DROP
 - D. CLEAR
45. **Which SQL statement is used to retrieve data from a database table?**
- A. READ
 - B. FETCH
 - C. SELECT
 - D. GET
46. **Which command deletes all rows from a table while keeping its structure intact?**
- A. DELETE
 - B. DROP
 - C. TRUNCATE
 - D. REMOVE
47. **Which SQL command is used to modify the structure of an existing table?**
- A. INSERT
 - B. SELECT
 - C. UPDATE
 - D. ALTER
48. **Which command is used to create new database objects such as tables?**
- A. INSERT
 - B. UPDATE
 - C. DELETE
 - D. CREATE
49. **Which command removes both the table structure and its data from the database?**
- A. DELETE
 - B. TRUNCATE
 - C. DROP
 - D. CLEAR
50. **Which clause is used to filter records in a SELECT statement?**
- A. GROUP BY
 - B. ORDER BY

- C. WHERE
 - D. HAVING
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◆ **Group 8: Additional Questions**

51. **Which SQL statement retrieves the names of employees aged 18 or older?**

- A. SELECT Age FROM Employees;
- B. DELETE FROM Employees;
- C. INSERT INTO Employees;
- D. SELECT Name FROM Employees WHERE Age >= 18;

52. **Which constraint ensures that all values in a column are unique?**

- A. CHECK
- B. DEFAULT
- C. UNIQUE
- D. FOREIGN KEY

53. **Commands related to user permissions belong to which SQL category?**

- A. DDL
- B. DML
- C. DCL
- D. TCL

54. **Which SQL category is responsible for retrieving data?**

- A. DDL
- B. DCL
- C. TCL
- D. DQL

55. **Which feature is used to visually represent the structure of a database?**

- A. Query Window
- B. Backup Manager
- C. ERD
- D. Object Explorer

56. **Defining relationships between entities is part of which design step?**

- A. Requirements analysis
- B. Logical design

- C. Physical backup
- D. Security configuration

57. Which of the following is classified as a string data type?

- A. FLOAT
- B. INT
- C. VARCHAR
- D. DATE

58. Which of the following represents a binary data type?

- A. CHAR
- B. NVARCHAR
- C. DATE
- D. VARBINARY(MAX)

59. Which SQL command is used to grant database access to a user?

- A. DELETE
- B. UPDATE
- C. REVOKE
- D. GRANT

60. Which SQL command is used to revoke previously granted permissions?

- A. DROP
- B. ALTER
- C. REVOKE
- D. GRANT