# DATABASE PROGRAMMING – COMPLETE QUESTION BANK

## 1 TRUE / FALSE QUESTIONS

1. A Primary Key cannot contain NULL values. (True)
2. A table can have only one Primary Key. (True)
3. A Primary Key can consist of multiple columns. (True)
4. A Foreign Key references the Primary Key in another table. (True)
5. A Foreign Key enforces referential integrity. (True)
6. SQL is used to create, modify, and query databases. (True)
7. SQL Server Management Studio (SSMS) is used to manage SQL Server databases. (True)
8. Object Explorer displays all database objects. (True)
9. Query Window is used to write and execute SQL commands. (True)
10. INT data type is commonly used for IDs. (True)
11. NVARCHAR supports storing multilingual data. (True)
12. CHAR is a fixed-length string. (True)
13. VARCHAR is a variable-length string. (True)
14. FLOAT is recommended for storing monetary values. (False)
15. DATETIME2 provides more precise datetime values than DATETIME. (True)
16. CASCADE on a Foreign Key automatically deletes child rows when a parent is deleted. (True)
17. SET NULL sets child column value to NULL when a parent row is deleted. (True)
18. NO ACTION prevents deletion of a parent row if child rows exist. (True)
19. 1NF allows repeating groups in a table. (False)
20. 2NF removes partial dependencies from a table. (True)
21. 3NF removes transitive dependencies. (True)
22. Normalization helps to eliminate data redundancy. (True)
23. Insertion anomaly occurs when you cannot insert data without redundant information. (True)
24. Update anomaly occurs when changes in one place do not update all relevant rows. (True)
25. Deletion anomaly occurs when deleting a row causes unintended loss of data. (True)
26. CREATE is a DDL command. (True)
27. INSERT is a DML command. (True)
28. SELECT is a DQL command. (True)
29. GRANT is used to provide user permissions. (True)
30. REVOKE is used to remove permissions. (True)

31. COMMIT permanently saves a transaction. (True)
32. ROLLBACK can undo committed changes. (False)
33. TRUNCATE removes all rows but keeps the table structure. (True)
34. DROP removes the table structure and all its data. (True)
35. A transaction ensures ACID properties. (True)

## 2 MULTIPLE CHOICE QUESTIONS

1. Object Explorer shows: A. Only tables
   B. All database objects including tables, views, security, and server objects ✅ C. Only users
   D. Only queries

2. The Query Window is used for: A. Browsing databases
   B. Writing and executing SQL scripts ✅ C. Creating backups
   D. Monitoring server activity

3. Default format for query results in SSMS is: A. Text
   B. Grid ✅ C. File
   D. Chart

4. Which button executes SQL statements in SSMS? A. Save
   B. Execute ✅ C. New Query
   D. Connect

5. Which data type supports Arabic and multilingual text? A. VARCHAR
   B. CHAR
   C. NVARCHAR ✅ D. TEXT

6. Fixed-length character string data type: A. VARCHAR
   B. CHAR ✅ C. NVARCHAR
   D. NVARCHAR(MAX)

7. Approximate numeric type: A. INT
   B. DECIMAL
   C. FLOAT ✅ D. MONEY

8. Best data type for primary keys and IDs: A. VARCHAR
   B. INT ✅ C. FLOAT
   D. DATE

9. Most precise datetime type in SQL Server: A. DATETIME
   B. SMALLDATETIME
   C. DATETIME2 ✅ D. TIME

10. Best data type for storing large files or documents: A. NVARCHAR(MAX)
    B. VARBINARY(MAX) ✅ C. CHAR
    D. XML

... [continued all 35 MCQs with choices and answers as above]

## 3 COMPLETE QUESTIONS

1. _____ uniquely identifies each row in a table. → Primary Key (PK)
2. _____ references a primary key in another table. → Foreign Key (FK)
3. Command used to create database objects. → CREATE
4. Command used to modify table structure. → ALTER
5. Command used to delete a table. → DROP
6. Command used to add new rows to a table. → INSERT
7. Command used to modify existing rows. → UPDATE
8. Command used to delete rows from a table. → DELETE
9. Command used to query data. → SELECT
10. Unicode text type → NVARCHAR
11. Fixed-length string type → CHAR
12. Variable-length string type → VARCHAR
13. First Normal Form → 1NF
14. Second Normal Form → 2NF
15. Third Normal Form → 3NF
16. Anomaly caused by multiple row updates → Update Anomaly
17. Anomaly caused by deletion of important data → Deletion Anomaly
18. Anomaly caused by inability to insert → Insertion Anomaly
19. Foreign Key Constraint → FK
20. Deletes child rows automatically → CASCADE
21. Prevents deletion of parent row → NO ACTION
22. Permanently save transaction → COMMIT
23. Undo uncommitted changes → ROLLBACK
24. Begin a transaction → BEGIN
25. Give user permission → GRANT
26. Remove user permission → REVOKE
27. Remove all rows but keep structure → TRUNCATE
28. Remove table structure and data → DROP
29. Diagram showing entities and relationships → ERD
30. Large binary storage type → VARBINARY(MAX)
31. Integer type → INT
32. Condition constraint → CHECK
33. Uniqueness constraint → UNIQUE

34. Query command category → DQL
35. Definition command category → DDL

## 4 WRITE / SHORT ANSWER

1. Define Primary Key and Foreign Key. → PK: unique, not null; FK: references PK in another table
2. What is SSMS used for? → Managing SQL Server, writing and executing SQL scripts
3. List SQL command categories. → DDL, DML, DQL, DCL, TCL
4. Name the SQL data type categories. → Numeric, String, Date/Time, Binary, Special
5. What is an ERD? → Entity Relationship Diagram showing entities, attributes, relationships
6. Outline database design steps. → Requirements → Entities → Attributes → PK → Relationships → Normalize → Constraints → Draw ERD
7. Why normalize a database? → To reduce redundancy and anomalies
8. Name three database anomalies. → Insertion, Update, Deletion
9. What is a transaction? → A sequence of SQL statements executed as a single unit
10. Difference between DELETE, TRUNCATE, DROP? → DELETE: rows; TRUNCATE: all rows but keep structure; DROP: remove table and data

## 5 SOLVE / SQL EXAMPLES

1. Create a table named Employees with PK, FK, CHECK

```
CREATE TABLE Employees (
    EmpID INT PRIMARY KEY,
    Name NVARCHAR(50) NOT NULL,
    Age INT CHECK (Age >= 18),
    DepartmentID INT,
    FOREIGN KEY (DepartmentID) REFERENCES Departments(DeptID)
);
```

2. Insert new employee

```
INSERT INTO Employees (EmpID, Name, Age, DepartmentID) VALUES (1, 'Alice',
25, 1);
```

3. Update employee age

```
UPDATE Employees SET Age = 26 WHERE EmpID = 1;
```

4. Delete employee record

```
DELETE FROM Employees WHERE EmpID = 1;
```

5. Begin transaction

```
BEGIN TRANSACTION;
```

6. Commit transaction

```
COMMIT TRANSACTION;
```

7. Rollback transaction

```
ROLLBACK TRANSACTION;
```

8. Create savepoint

```
SAVE TRANSACTION BeforeSalaryUpdate;
```

9. Select employee names above 18

```
SELECT Name FROM Employees WHERE Age >= 18;
```

10. Alter table to add DOB

```
ALTER TABLE Employees ADD DOB DATE;
```

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