1. trigger and stored procedure:

Aspect	Trigger	Stored Procedure
How it runs	Executes automatically	Executes manually
When it runs	On INSERT, UPDATE, or DELETE	When explicitly called using EXEC
User control	No direct control	Full control
Parameters	Cannot accept parameters	Can accept parameters
Return values	Cannot return values	Can return values
Typical usage	Enforce rules, auditing, logging	Business logic, calculations, reports
Transaction behavior	Runs inside the same transaction	Can manage its own transactions

2. stored procedure and functions

Aspect	Stored Procedure	Function
Purpose	Perform actions / business logic	Return a value or table
Return value	Optional (OUTPUT parameters, result sets)	Mandatory (scalar or table)
Can modify data	Yes (INSERT, UPDATE, DELETE)	No data modification
Use in SELECT	Not allowed	Allowed
Parameters	Input & Output	Input only
Transaction control	Can use BEGIN/COMMIT/ROLLBACK	Not allowed
Error handling	TRY...CATCH supported	Limited
Execution	EXEC / EXECUTE	Called like a built-in function

3. drop and delete statement

Aspect	DELETE	DROP
What it removes	Rows (data)	Entire object
Scope	Table data only	Table / view / procedure / database
WHERE clause	Supported	Not supported
Transaction support	Can be rolled back	Cannot be rolled back
Triggers fired	Yes	No
Table structure remains	Yes	No
Speed	Slower (row by row)	Very fast (metadata operation)

4. select and select into statement

Aspect	SELECT	SELECT INTO
Main purpose	Retrieve data	Retrieve and create a new table
Creates a table	No	Yes
Target table	Must already exist	Must not exist
Table structure	Not affected	Created automatically
Indexes & constraints	Uses existing ones	Not copied
Typical use	Queries, reports	Backup, temp tables, data migration
Performance	Normal read	Faster for bulk copy

5. DDL, DML, DCL and DQL

Category	Full Name	Purpose	Common Commands
DDL	Data Definition Language	Define or change database structure	CREATE, ALTER, DROP, TRUNCATE
DML	Data Manipulation Language	Insert, update, delete data	INSERT, UPDATE, DELETE
DCL	Data Control Language	Control access & permissions	GRANT, REVOKE
DQL	Data Query Language	Retrieve data	SELECT

6. Table valued and multi statement function

Aspect	Inline Table-Valued Function (iTVF)	Multi-Statement Table-Valued Function (mTVF)
Definition	Single SELECT statement	Multiple SQL statements
RETURN type	RETURNS TABLE	RETURNS @table TABLE(...)
BEGIN / END	Not used	Required
Table variable	Not used	Used
Performance	High	Lower
Query optimizer	Fully optimizable	Limited optimization
Typical use	Simple reusable queries	Complex row-by-row logic

7. varchar(50) and varchar(max)

Aspect	VARCHAR(50)	VARCHAR(MAX)
Maximum length	50 characters	Up to 2 GB (~2,147,483,647 chars)
Storage type	In-row	In-row or out-of-row
Performance	Faster	Slower for large data
Indexable	Fully indexable	Limited (only prefix indexing)
Memory usage	Predictable	Variable
Typical use	Names, emails, codes	Descriptions, comments, documents

8. SQL and windows Authentication

Aspect	Windows Authentication	SQL Server Authentication
Who authenticates	Windows OS (Active Directory)	SQL Server
Credentials stored	Not in SQL Server	Stored in SQL Server
Username format	DOMAIN\User	SQL login
Password management	Managed by Windows policies	Managed by SQL Server
Security level	High	Medium
Single Sign-On (SSO)	Yes	No
Best use case	Corporate / domain environments	Mixed systems / external apps

9. Inline function and view

Aspect	Inline Table-Valued Function	View
Parameters	Supported	Not supported
Definition	Parameterized SELECT	Stored SELECT query
Return type	Table	Table (virtual)
Use in SELECT	Yes	Yes
Performance	High	High
Query optimizer	Fully optimizable	Fully optimizable
Reusability	High (dynamic)	Medium (static)
Schema binding	Optional	Optional
Typical role	Dynamic queries	Simplified access / abstraction

10. Identity and unique Constraint

Aspect	IDENTITY	UNIQUE Constraint
Purpose	Auto-generate numeric values	Enforce uniqueness
Type	Column property	Constraint
Duplicates allowed	No (by design)	No
NULL values	Not allowed	One NULL allowed
Automatic value	Yes	No
One per table	Only one	Multiple allowed
Index created	No (unless PK)	Yes (unique index)
Typical use	Primary key IDs	Emails, usernames, national IDs