Beginner Level

1. Snowflake Basics

- Snowflake architecture (multi-cluster shared data)
- Supported cloud platforms (AWS, Azure, GCP)
- Compute vs Storage separation
- Editions of Snowflake (Standard, Enterprise, Business Critical)

2. Core Concepts

- Databases, Schemas, Tables, Views
- Virtual Warehouses
- Cloning (zero-copy clone)
- Time Travel
- Fail-safe
- Data Retention

3. Storage & File Handling

- Internal vs External stages
- File formats (CSV, JSON, Parquet, Avro, ORC, XML)
- COPY INTO / COPY FROM
- Snowflake stages (user, table, named)
- Basic Data loading/unloading

4. SQL Features

- Basic DDL & DML
- Temporary, Transient, Permanent tables
- Standard Views
- Sequences

5. Access Control Basics

- Roles: ACCOUNTADMIN, SYSADMIN, PUBLIC
- Role-based access control (RBAC)

- Grants and privileges (USAGE, SELECT)

Intermediate Level

6. Performance Optimization

- Clustering Keys
- Query profiling / Query history
- Result caching vs metadata caching

7. Semi-Structured Data

- VARIANT, OBJECT, ARRAY
- Flatten function
- Querying JSON/XML
- LATERAL joins

8. Data Sharing & Collaboration

- Secure Data Sharing
- Reader accounts
- Provider/Consumer model
- Data Exchange

9. Access Control & Security (Advanced)

- SECURITYADMIN role
- Custom roles and privileges
- Secure Views
- Object Ownership model (DAC)
- MFA, Network Policies
- Row Access Policies
- Data masking

10. Automation

- Streams (CDC)

- Tasks (scheduling & chaining)
- Procedure and Task integration

Advanced Level

11. Integration & Ecosystem

- Snowflake connectors (Python, Spark, Kafka, JDBC, ODBC)
- External Functions
- API integrations (REST)
- Partner tools (dbt, Matillion, Fivetran)

12. Monitoring & Logging

- Account usage views
- Information Schema views
- Resource monitors
- Access history
- Object dependencies

13. Snowpark & Development

- Snowpark for Python, Scala, Java
- Snowpark DataFrames
- Writing UDFs and Stored Procedures
- ML workflows in Snowflake

14. Data Governance

- Data classification
- Tagging objects
- Access history tracking
- Row/Column-level security
- Compliance (HIPAA, PCI, etc.)

15. Miscellaneous

- Snowflake Marketplace
- Pricing & Credit consumption model
- Query lifecycle
- System limits
- Best practices