**CHUBB Corporation Senior Data Engineer Interview Guide – Experienced 8+**

**Round 1 - Technical Interview**

**Overview**

This round tests your technical depth, project experience, problem-solving skills, and SQL/Python fundamentals. Be ready to explain your day-to-day work, architecture knowledge, and address problem statements.

**Interview Process Breakdown**

**1. Self-Introduction**

 Introduce yourself with key projects, emphasizing your tech stack (e.g., Spark, Databricks, Python, SQL).

 Highlight your role in recent projects and technologies used.

**2. Technology & Architecture**

 Discuss your project architecture and the technologies you are using. Include details about:

 Daily data volumes processed.

 Why specific technologies were chosen for the project.

**Follow-Up Questions:**

 Explain the Medallion Architecture (Bronze, Silver, Gold layers).

 Questions on Databricks:

 Importance of each layer in Databricks.

 Secret Scope usage for managing credentials securely.

 Steps to mount storage in Databricks.

**3. SQL Skills**

Prepare for intermediate-to-advanced SQL topics:

 Window Functions: RANK(), DENSE\_RANK().

 Joins: Inner, Left, Right, and Full Joins.

 Common Table Expressions (CTEs) for complex queries.

**4. Python Basics**

Be ready for:

 List operations and comprehension.

 Lambda functions for quick data manipulation.

**5. Data vs. Delta Lake**

 Discuss differences between Data Lakes and Delta Lakes.

 Explain Delta Lake’s architecture:

 Transaction logs for ACID compliance.

 How delete operations are handled efficiently.

**6. Encryption**

 Describe data encryption methods and their importance.

 Differentiate between data masking and encryption.

**7. Project Challenges**

 Share specific challenges you faced in your projects and how you solved them.

**8. Spark Optimization**

 Discuss Spark optimization techniques:

 Identify and address data skewness (e.g., repartitioning, salting).

 Efficient Spark job execution strategies.

**Tips**

 Practice explaining your project architecture with clarity.

 Brush up on SQL and Python coding fundamentals.

 Understand Spark internals like optimization and handling large datasets.

**Round 2: Technical Interview**

**Overview**

This round evaluates your understanding of security, infrastructure, and governance, along with follow-up questions on data platforms and project-related issues.

**Interview Process Breakdown**

**1. Self-Introduction**

 Start with a brief summary of your projects and tech stack.

**2. Security & Governance**

 Explain the difference between:

 Service Principal and Managed Identity in Azure.

 When to use each for secure resource access.

 Describe VM network interactions:

 Components involved, such as Virtual Networks, NSGs (Network Security

Groups), and Subnets.

**3. Data Security & Encryption**

 Share your understanding of data security mechanisms like encryption.

 Discuss infrastructure-related questions, such as securing data pipelines and access governance.

**4. Follow-Up Infrastructure Questions**

 Be ready for deeper discussions around infrastructure design, governance, and data security best practices.

**Tips**

 Demonstrate a clear understanding of security principles (e.g., encryption and managed identities).

 Be ready to explain VM and network configurations in detail.

 Brush up on Azure and cloud infrastructure concepts.