PDF 7: Azure Data Factory Orchestration

Subjective Case Study Questions and Answers

Q1. Scheduling Complex Pipelines
Scenario: A company needs to run multiple ETL pipelines in sequence with dependencies.
Answer: Use ADF pipeline orchestration with **Execute Pipeline Activity** to chain pipelines. Implement dependency conditions (Success/Failure/Completion). Use **Tumbling Window Trigger** for recurring schedules.

Q2. Handling Failures and Retries
Scenario: Pipelines occasionally fail due to temporary network issues.
Answer: Configure retry policies for activities. Implement **Try-Catch** blocks to handle failures gracefully. Send notifications via **Logic Apps** or **Azure Monitor Alerts** for manual intervention if needed.

Q3. Parameterized Pipelines
Scenario: ETL pipelines process multiple tables with the same logic.
Answer: Use **parameters and variables** in ADF pipelines. Pass table names, file paths, or other configuration values at runtime to make pipelines reusable and maintainable.

Q4. Monitoring Orchestrated Pipelines
Scenario: Management requires visibility into pipeline runs.
Answer: Use **ADF monitoring dashboard**. Track pipeline run duration, success/failure status, and lineage. Integrate with **Log Analytics** to create custom alerts and historical reporting.

MCQs

1. Which activity orchestrates multiple child pipelines?
   Answer: A. Execute Pipeline Activity — calls child pipelines.
2. Scheduling recurring pipelines?
   Answer: B. Tumbling Window Trigger — supports periodic execution.
3. Handling temporary failures?
   Answer: C. Retry policies + Try-Catch — improves reliability.
4. Making pipelines reusable for multiple tables?
   Answer: B. Parameterized pipelines — runtime configuration.
5. Visualizing pipeline execution history?
   Answer: A. ADF Monitoring Dashboard — real-time and historical tracking.
6. Sending alerts on pipeline failure?
   Answer: B. Logic Apps or Azure Monitor Alerts — automation.
7. Passing runtime variables?
   Answer: C. Pipeline parameters — dynamic execution.
8. Ensuring pipeline dependencies?
   Answer: D. Dependency conditions (Success/Failure/Completion) — controls execution flow.