PDF 11: High Availability & Disaster Recovery (HA/DR)

Subjective Case Study Questions and Answers

Q1. Designing High Availability in Synapse
Scenario: Mission-critical analytics system must be available 24/7.
Answer: Use **Geo-Replication** for Synapse dedicated SQL pool, enable **zone-redundant storage**, and implement **automatic failover groups**. Combine with backups and snapshot strategies for data durability.

Q2. Disaster Recovery Planning
Scenario: DR plan required for Synapse and ADF pipelines.
Answer: Define RTO/RPO, replicate databases across regions, use **ADF pipeline export/import** for backup, test failover procedures, and document recovery steps.

Q3. Backup Strategies
Scenario: Ensure protection of historical data.
Answer: Schedule automated **Synapse snapshots**, store in geo-redundant storage, and retain backups based on retention policies. Periodically validate backup restorations.

Q4. Monitoring HA/DR
Scenario: Management wants system health monitoring.
Answer: Use **Azure Monitor** and **Log Analytics** to track availability metrics, detect failures, and trigger alerts. Combine with dashboards for real-time status.

MCQs

1. Which ensures geo-redundancy?
   Answer: B. Geo-replication — copies data across regions.
2. DR testing involves?
   Answer: C. Failover simulations — validate recovery plan.
3. RTO and RPO define?
   Answer: A. Recovery time and data loss tolerance.
4. Synapse HA requires?
   Answer: B. Zone-redundant storage + automatic failover.
5. Pipeline backup in ADF?
   Answer: C. Export JSON definitions — enables recovery.
6. Monitoring pipeline health?
   Answer: A. Azure Monitor + Log Analytics dashboards.
7. Validating backup integrity?
   Answer: B. Restore test environment — ensure reliability.
8. Protecting against single-zone failure?
   Answer: C. Zone-redundant configuration — high availability.