Azure-DP-900-Udemy-Practice-Test

1. Which of these is a column family database?

- Azure Cosmos DB MongoDB
- Azure Cosmos DB Cassandra
- Azure Cosmos Gremlin
- Azure Table Storage
- Ans: Azure Cosmos DB Cassandra
- Semi Structured Column-Family Database - Azure Cosmos DB Cassandra API

2. TRUE or FALSE: Data stored in Azure Storage Zone-redundant storage (ZRS) is replicated across multiple availability zones

- Ans: TRUE
- Zone-redundant storage (ZRS) - Three synchronous copies in three AZs in the primary region

3. TRUE or FALSE: Data stored in Azure Blob Storage using archive tier has low storage cost and high retrieval cost

- Ans: True
- Archive: Ra- rely accessed data stored for min of 180 days. Lowest storage cost BUT Highest access cost. Access latency: In hours.

4. Installing a SQL Server Database manually in Windows Virtual Machine is classified as _____.

- Ans: Infrastructure as a Service (IaaS)
- Infrastructure as a Service (IaaS): Use only infrastructure from cloud provider. Example: Running SQL Server on a VM.

5. TRUE or FALSE: Database Administrator is responsible for upgrading Operating System of SQL Server Database manually in a Windows Virtual Machine

- Ans: TRUE

- IaaS (Infrastructure as a Service): Database Administrator is responsible for OS upgrades and patches, Database software and upgrades, scaling of compute & storage, Availability and Durability

6. Assuming that course is a table name and user1 is a database user, 'GRANT SELECT ON course TO user1' is an example of:

- Ans: Data Control Language (DCL)
- Data Control Language (DCL): Manage permissions and other controls. Example: Grant and revoke user access - GRANT SELECT ON course TO user1.

7. 'CREATE DATABASE yourtestdb' is an example of:

- Ans: Data Definition Language (DDL)
- Data Definition Language (DDL): Create and modify structure of database objects. Create: Create a database or its constituent objects (Table, View, Index etc).

8. TRUE or FALSE: Azure Cosmos DB Table API supports both read replica's and multi region writes

- Ans: TRUE
- Azure Cosmos DB Table API supports multi region writes where as Azure Table Storage does NOT.

9. TRUE or FALSE: Azure Data Lake Storage enables folder level hierarchy

- Ans: True
- Azure Data Lake Storage (Gen2): Blob storage + Hierarchical directory structure. Configure permissions(RBAC) at file and directory level.

10. TRUE or FALSE: Prefer relational databases when strong transactional consistency guarantees are needed

- Ans: True
- Relational Databases: Recommended when strong transactional consistency guarantees are needed. Database schema is mandatory.

11. You are setting up a new SQL Server database in Azure. You want to minimize operational overheads. Which of these Azure databases would you recommend?

- Ans: Azure SQL Database

- Azure SQL Database is recommended to minimize operational overheads for running SQL Server in Azure.

12. You have a requirement to keep your files for period of 5 years. These files will be very rarely accessed. What storage tier would you recommend to keep your costs low?

- Ans: Archive
- Archive: Rarely accessed data stored for min. 180 days. Lowest storage cost BUT Highest access cost. Access latency - In hours.

13. Your application needs to store unstructured data like images and videos. Which type of data store do you recommend?

- Ans: Object Storage
- Object Storage (Azure Blob Storage) is recommended to store massive volumes of unstructured data (images, binary files, videos..)

14. Which of these features of Azure SQL Managed Instance is NOT provided by Azure SQL Database?

- Azure Active Directory (AAD)
- Transparent Data Encryption
- Automated Backups
- Native Support for Cross-database Queries within a single SQL Server instance
- Ans: Native Support for Cross-database Queries within a single SQL Server instance
- Features in Azure SQL Managed Instance NOT provided by Azure SQL Database: Cross-database queries (and transactions) within a single SQL Server instance, Database Mail, Built in SQL Server Agent

15. TRUE or FALSE: Azure Cosmos DB Gremlin API Graph database can be queried using Gremlin Language

- Ans: TRUE

16. TRUE or FALSE: Azure Storage Account supports role based access control at folder and file level only for Azure Data Lake Storage

- Ans: TRUE

- Azure Data Lake Storage (Gen2): Blob storage + Hierarchical directory structure. Configure permissions(RBAC) at file and directory level. (Azure Blob storage does NOT support Hierarchical directory structure.)

17. TRUE or FALSE: Azure Table Storage supports multi-region writes

- Ans: FALSE
- Azure Cosmos DB Table API supports multi region writes where as Azure Table Storage does NOT.

18. TRUE OR FALSE: Most frequently used data model schema for data analysis (in a data warehouse) is ___

- Ans: Star Schema
- Star Schema: Modeling approach most widely used by relational data warehouses. Each Table classified as Dimension or Fact.

19. TRUE or FALSE: STAR schema is de-normalised and easier to query

- Ans: TRUE

20. In Power BI - Paginated Reports are created using:

- Ans: Power BI Report Builder
- Power BI Report Builder: Standalone tool to author paginated reports

21. In Power BI - Dashboard can be created using __.

- Ans: Power BI Service
- Dashboard: Single page - visualizations from one or more reports. Created using Power BI Service.

22. TRUE or FALSE: In Power BI - Dashboards contains visualizations from multiple reports AND they can be shared with other users

- Ans: True
- Dashboard: Single page - visualizations from one or more reports. Technically a canvas with multiple tiles. Monitor the most important information at one glance and dig deeper, if needed.

23. ___ allows you to join data from a SQL Server instance using T-SQL with external data such as SQL Server, Oracle, Teradata, MongoDB, Hadoop cluster

- Ans: PolyBase
- PolyBase: Run T-SQL queries on external data sources. PolyBase makes external data sources appear like tables.

24. Which of these data stores can be used to store complex relationships between data? (Example : Work Relationship between Employees in an Organization)

- Ans: Cosmos DB Gremlin API
- Gremlin: Graph. Store complex relationships between data.

25. You want to use a Key Value Datastore to store session data. Which of these Azure services would you recommend?

- Ans: Azure Cosmos DB Table API
- Cosmos DB - Core(SQL): SQL based API for working with documents. MongoDB: Document with MongoDB API. Table: Key Value. Gremlin: Graph. Cassandra: Column Family.

26. Which of these is a virtual table representing content based on the result set of query? (You can join multiple tables in the query and/or have calculated columns)

- Ans: View
- View: Virtual table mapped to a query. Can be used just like a table in SQL queries. Use cases - Add calculated columns, join multiple tables, filter unnecessary columns.

27. TRUE or FALSE: You can create multiple clustered indices for one table

- Ans: FALSE
- Clustered: Data in table is stored in the order of the index key values. Remember: Only one clustered index per table (Why? - data rows can only be sorted in one way).

28. Azure SQL Database and Postgresql supports Multi-factor authentication mechanism when using _

- Ans: Azure Active Directory (AAD)
- You can use SQL Server authentication or Active Directory (Active Directory supports MFA)

29. You can restrict access to Azure SQL Database (allow only a specific range of IP addresses/virtual network) using _

- Ans: Server Level Firewall

30. Azure SQL Database creation can be automated using _____

- ARM Template
- Azure CLI
- Azure Powershell
- All of the above
- Ans: All of the above

31. SQL Server, Azure SQL Database, Postgresql can all be accessed using:

- Azure Data Studio
- Microsoft SQL Server Management Studio
- Microsoft SQL Server Data
- All of the above
- Ans: Azure Data Studio
- Azure Data Studio - Cross-platform (Windows, Mac, linux) db tool with Intellisense, code snippets and source control. Run SQL queries. Supports SQL Server, Azure SQL Database,Postgresql, Azure Synapse Analytics..

32. For which of these usecases would you recommend using Azure SQL Database Read only database replica?

- Ans: Reporting application which only reads data
- Read only database replica help you offload reporting apps and other read workloads (from live OLTP database).

33. TRUE or FALSE: In Azure Data Factory, a pipeline CANNOT execute another pipeline

- Ans: FALSE

34. TRUE or FALSE: In Azure Data Factory, Integration Runtime provides compute infrastructure to perform desired operations

- Ans: TRUE

- Integration Runtime: Compute infrastructure used by Azure Data Factory

35. TRUE or FALSE: Treemaps are charts with colored rectangles nested within a rectangle. The size of a colored rectangle represents value.

- Ans: TRUE

36. Consuming stock market transactions as they happen during day trading is an example of __.

- Batch Processing
- Stream Processing
- Ans: Stream Processing
- Streaming Processing: Real-time data processing. Processing data as it arrives (in seconds or milliseconds).

37. You can run Spark jobs in which of the following services?

- Azure Databricks
- Azure HDInsight
- Both
- Ans: Both

38. In Azure Data Factory, which of these can be used to schedule pipelines?

- Ans: Triggers
- Triggers: Trigger pipeline at a specific times

39. TRUE or FALSE: Dataset is a representation of data within data stores

- Ans: TRUE
- Dataset: Representation of data structures within data stores

40. Which of these Azure services is recommended for data warehousing & big data workloads?

- Ans: Azure Synapse Analytics
- Azure Synapse Analytics - End-to-end analytics solutions. Data integration + Enterprise data warehouse + Data analytics.

41. Azure Synapse Analytics supports parallel processing of data using:

- Ans: Split Processing across multiple compute nodes
- Massive Parallel Processing (MPP): Split processing across multiple compute nodes. Examples: Spark, Azure Synapse Analytics.

42. TRUE or FALSE: In a clustered index, data is stored in random order

- Ans: FALSE
- Clustered: Data in table is stored in the order of the index key values. Remember: Only one clustered index per table (Why? - data rows can only be sorted in one way).

43. TRUE OR FALSE: When using Azure Data Factory for batch processing, processed data can be stored in relational databases, NoSql databases or in Azure Blob Storage

- Ans: TRUE

44. Temperature sensors sending readings every hour is example of _

- Ans: Batch processing
- Batch Processing: Buffering and processing data in groups. Define condition - how often to run? (every 6 hours or after 10K records). Advantages: Process huge volumes of data during off-peak hours (overnight, for example).

45. Which of the following is TRUE about Batch processing?

- Options
  - Data is processed near realtime
  - Can NOT process huge loads of data
  - Parallel Processing is NOT possible
  - Batch processing typically has high latency
- Ans: Batch processing typically has high latency

46. TRUE or FALSE: Normalization helps you in reducing data inconsistency

- Ans: TRUE
- Database Normalization: Process of restructuring a relational database to reduce data redundancy and improve data integrity

47. TRUE or FALSE: Normalization helps in reducing data duplication across multiple tables

- Ans: TRUE

48. Which of these can you use to analyze if a retail company has sufficient stock of products to meet the demand on Black Friday?

- Ans: Predictive Analytics
- Predictive analytics: What will happen?. Predict probability based on historical data. Example: What will be the future demand?. Example: Calculate probability of something happening in future

49. TRUE or FALSE: You can pause the SQL pool in Azure Synapse Analytics to reduce costs

- Ans: True

50. Which of these services can Azure Databricks consume data from?

- Options
  - Azure Event Hub
  - Azure SQL
  - Azure Cosmos DB
  - All of the above
- Ans: All of the above
- Azure Databricks: Process data from Azure Blob storage, Azure Data Lake Store, Hadoop storage, flat files, databases, and data warehouses

51. In ELT (Extract, Load and Transform):

- Options
  - Data is first loaded into the target datastore with minimal processing
  - Transformations are done in the target datastore
  - We do NOT use a separate service for transformation
  - All of above
- Ans: All of above
- ELT (Extract, Load, and Transform): Data is stored before it is transformed. Uses an iterative approach (multiple steps) to process data in target system. Advantage: Does NOT use a separate transformation engine.

52. Which of these represents 'Single page visualizations from one or more reports'?

- Options
  - Report
  - Dashboard
  - Dataset
- Ans: Dashboard
- Dashboard: Single page - visualizations from one or more reports. Technically a canvas with multiple tiles.

53. Which of these represents 'One or more pages of visualizations in Power BI'?

- Options
  - Report
  - Dashboard
  - Dataset
- Ans: Report
- Report: One or more pages of visualizations

54. What is Online SaaS Power BI called?

- Options
  - Power BI Service
  - Power BI Desktop
  - Power BI Report Builder
- Ans: Power BI Service
- Power BI Service: Online SaaS (Software as a Service) service. Power BI online - app.powerbi.com. Create/share reports and dashboards.

55. Which of these can be used to connect to an external source (store external connection details) from Data Factory?

- Ans: Linked Service
- Linked Service: Used to connect to an external source. Connect to different sources like Azure Storage Blob, SQL Databases etc.

56. Categorize activity: Orchestrate pipeline activity based on output of another pipeline activity

- Options

- Data movement
  - Data transformation
  - Control flow
- Ans: Control Flow
- Control flow: Orchestrate pipeline activity based on output of another pipeline activity

57. Decide Data Analysis Category: Semantic Analysis of Text (Analyze reviews)

- Ans: Cognitive Analytics
- Cognitive analytics: Make analytic tools to think like humans. Combine traditional analytics techniques with AI and ML features. Examples - Speech to text (transcription or subtitles), text to speech, Video Analysis, Image Analysis, Semantic Analysis of Text (Analyze reviews)

58. Which service supports Server Message Block (SMB) and Network File System (NFS) protocols?

- Options
  - Azure Files
  - Azure Blob Storage
  - Azure Cosmos DB
- Ans: Azure Files
- Azure Files: File shares for cloud and on-premises. Supports Server Message Block (SMB) and Network File System (NFS) protocols.

59. TRUE or FALSE: In PaaS, customer can customize OS and install custom software

- Ans: FALSE
- Typically PaaS does not provide direct access to underlying hardware or OS

60. TRUE or FALSE: In PaaS, customer has access to VM instances

- Ans: FALSE
- Typically PaaS does not provide direct access to underlying hardware or OS

61. TRUE or FALSE: Customer is responsible for Availability when using PaaS

- Ans: FALSE
- PaaS: Cloud provider is responsible for OS upgrades and patches, Database software and upgrades, Scaling, Availability, Durability etc..

62. You have several virtual machines running on-premises and in the cloud. You want to map a network shared drive connected to all these machines. Which of these Azure services would you recommend?

- Options
    - Virtual Machine Data Disk
    - Azure Blob Containers
    - Azure Files
- Ans: Azure files
- Azure Files: File shares for cloud and on-premises. Supports Server Message Block (SMB) and Network File System (NFS) protocols.