**Azure fundamental assignment 4**

1. **List Features and benefits of ExpressRoute.?**

Ans- ExpressRoute is a service provided by Microsoft Azure that enables private, dedicated, and high-throughput network connections between on-premises data centers and Azure. Here are the key features and benefits of ExpressRoute:

Features:

1. Private Connectivity:

Establishes private connections that do not traverse the public internet, providing enhanced security for data in transit.

2. Dedicated Connections:

Offers dedicated, reliable, and consistent network connections between on-premises environments and Azure, providing a more predictable and stable connection compared to internet-based connections.

3. Global Reach:

Provides connectivity to Azure data centers across the globe, allowing organizations to establish connections to Azure resources in different regions.

4. Multiple Connectivity Models:

Supports multiple connectivity models, including point-to-point connections, multipoint connections, and network service providers.

5. Scalability:

Scales easily to accommodate growing workloads and increasing data transfer requirements.

1. **Explain Azure storage account, disc storage and blob storage?**

Ans- Azure Blob Storage is Microsoft's object storage solution for the cloud. Blob Storage is optimized for storing massive amounts of unstructured data. Unstructured data is data that doesn't adhere to a particular data model or definition, such as text or binary data.

1. **List and describe database services that are available on Microsoft Azure.**

Ans- Microsoft Azure offers a variety of database services to meet different data storage and processing needs. Here are some of the key database services available on Azure:

1. Azure SQL Database:

Type: Relational Database as a Service (RDBMS)

Description: Azure SQL Database is a fully managed relational database service based on Microsoft SQL Server. It provides features such as automatic tuning, built-in high availability, and scalability. It supports T-SQL for querying and managing data.

2. Azure Cosmos DB:

Type: Multi-model Database as a Service

Description: Azure Cosmos DB is a globally distributed, multi-model database service that supports document, key-value, graph, and column-family data models. It provides low-latency access to data globally and automatic and instant scalability.

3. Azure Database for MySQL:

Type: Managed MySQL Database

Description: Azure Database for MySQL is a fully managed relational database service based on the MySQL database engine. It offers high availability, security, and scalability for applications that use MySQL as their backend.

4. Azure Database for PostgreSQL:

Type: Managed PostgreSQL Database

Description: Azure Database for PostgreSQL is a fully managed relational database service based on the PostgreSQL database engine. It provides features like automated backups, scaling options, and security enhancements.

5. Azure Synapse Analytics (formerly SQL Data Warehouse):

Type: Analytics Data Warehouse

Description: Azure Synapse Analytics is a cloud-based analytics service that allows organizations to analyze large volumes of data. It supports both relational and non-relational data and provides capabilities for data warehousing, big data analytics, and data integration.

6. Azure Table Storage:

Type: NoSQL Key-Value Store

Description: Azure Table Storage is a NoSQL data store that provides a key-value data model. It is designed for storing large amounts of semi-structured data with high scalability and low-latency access.

7. Azure Cache for Redis:

Type: In-Memory Data Store

Description: Azure Cache for Redis is an in-memory data store based on the open-source Redis. It provides fast and scalable caching for applications, improving performance by storing frequently accessed data in memory.

8. Azure Database Migration Service:

Type: Database Migration Service

Description: Azure Database Migration Service simplifies the process of migrating on-premises databases to Azure. It supports migration to various Azure database services, including Azure SQL Database, Azure Database for MySQL, and Azure Database for PostgreSQL.

9. Azure Blockchain Service:

Type: Blockchain as a Service

Description: Azure Blockchain Service allows organizations to deploy, manage, and interact with blockchain networks on Azure. It supports various blockchain protocols and frameworks.What are multifactor authentication and conditional access available in Azure?

Ans- Conditional Access policies can be applied to specific users, groups, and apps. The goal is to protect your organization while also providing the right levels of access to the users who need it. In this tutorial, we create a basic Conditional Access policy to prompt for MFA when a user signs in.

1. **What is the Azure security center?**

Ans- Azure Security Center is a cloud security service from Microsoft that helps organizations monitor, manage, and protect their Azure resources. It provides visibility and control over the security of Azure resources, such as:

. Virtual machines

. Cloud services

. Azure virtual networks

. Blob storage

1. **How to detect and respond to security in Azure.**

Ans- Azure offers built in threat protection functionality through services such as Microsoft Entra ID, Azure Monitor logs, and Microsoft Defender for Cloud. This collection of security services and capabilities provides a simple and fast way to understand what is happening within your Azure deployments.

1. **What is the Azure key vault? Write its features and advantages.**

**Ans-** Azure Key Vault is a cloud service for securely storing and accessing secrets. A secret is anything that you want to tightly control access to, such as API keys, passwords, certificates, or cryptographic keys. Key Vault service supports two types of containers: vaults and managed hardware security module (HSM) pools.