- **Vendor: Microsoft**
- **Exam Code: AZ-305**
- **Exam Name: Designing Microsoft Azure Infrastructure Solutions**
- **New Updated Questions from Braindump2go**
- **(Updated in December/2021)**

QUESTION 32
You are designing a SQL database solution. The solution will include 20 databases that will be 20 GB each and have varying usage patterns.
You need to recommend a database platform to host the databases. The solution must meet the following requirements:
- The solution must meet a Service Level Agreement (SLA) of 99.99% uptime.
- The compute resources allocated to the databases must scale dynamically.
- The solution must have reserved capacity.
- Compute charges must be minimized.

What should you include in the recommendation?

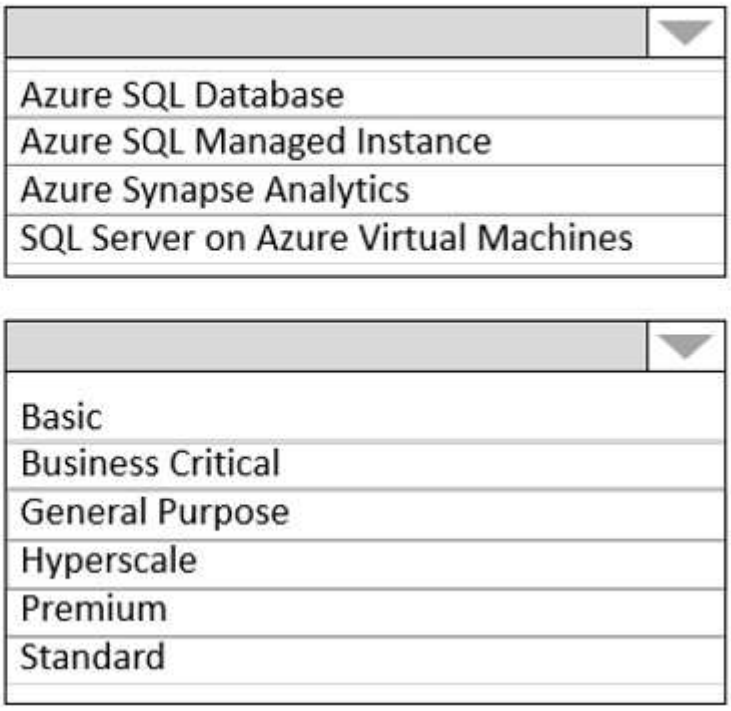
A. an elastic pool that contains 20 Azure SQL databases
B. 20 databases on a Microsoft SQL server that runs on an Azure virtual machine in an availability set
C. 20 databases on a Microsoft SQL server that runs on an Azure virtual machine
D. 20 instances of Azure SQL Database serverless

Answer: A
Explanation:
The compute and storage redundancy is built in for business critical databases and elastic pools, with a SLA of 99.99%. Reserved capacity provides you with the flexibility to temporarily move your hot databases in and out of elastic pools (within the same region and performance tier) as part of your normal operations without losing the reserved capacity benefit.
Reference:
https://azure.microsoft.com/en-us/blog/understanding-and-leveraging-azure-sql-database-sla/

QUESTION 33
Hotspot Question
You have an on-premises database that you plan to migrate to Azure.
You need to design the database architecture to meet the following requirements:
- Support scaling up and down.
- Support geo-redundant backups.
- Support a database of up to 75 TB.
- Be optimized for online transaction processing (OLTP).

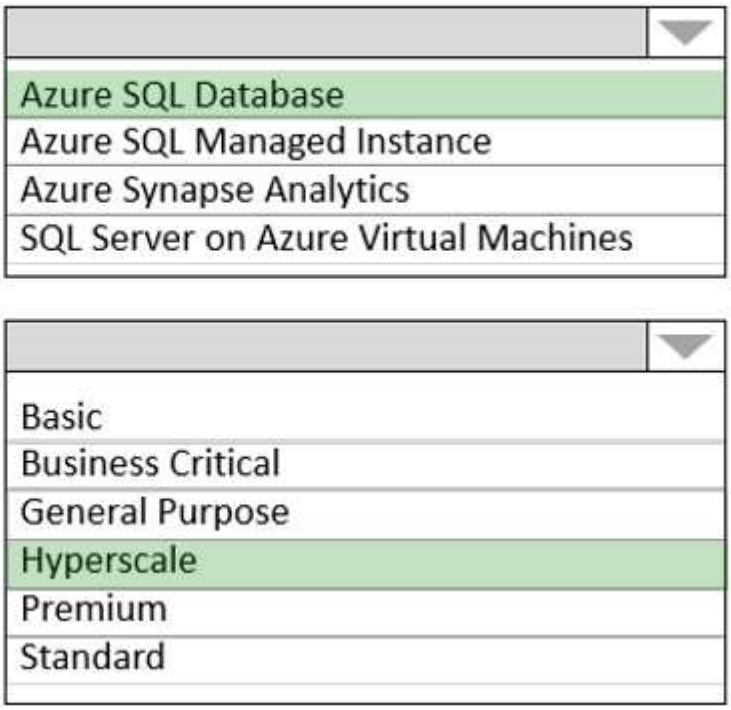
What should you include in the design? To answer, select the appropriate options in the answer area.
NOTE: Each correct selection is worth one point.

Answer Area



Answer:

Answer Area



Explanation:
Box 1: Azure SQL Database
Azure SQL Database:
Database size always depends on the underlying service tiers (e.g. Basic, Business Critical, Hyperscale).

It supports databases of up to 100 TB with Hyperscale service tier model.
Active geo-replication is a feature that lets you to create a continuously synchronized readable secondary database for a primary database. The readable secondary database may be in the same Azure region as the primary, or, more commonly, in a different region. This kind of readable secondary databases are also known as geo-secondaries, or geo-replicas.
Azure SQL Database and SQL Managed Instance enable you to dynamically add more resources to your database with minimal downtime.
Box 2: Hyperscale
Incorrect Answers:
- SQL Server on Azure VM: geo-replication not supported.
- Azure Synapse Analytics is not optimized for online transaction processing (OLTP).
- Azure SQL Managed Instance max database size is up to currently available instance size (depending on the number of vCores).
  Max instance storage size (reserved) - 2 TB for 4 vCores
  - 8 TB for 8 vCores
  - 16 TB for other sizes

Reference:
https://docs.microsoft.com/en-us/azure/azure-sql/database/active-geo-replication-overview
https://medium.com/awesome-azure/azure-difference-between-azure-sql-database-and-sql-server-on-vm-comparison-azure-sql-vs-sql-server-vm-cf02578a1188

QUESTION 34
You are planning an Azure IoT Hub solution that will include 50,000 IoT devices.
Each device will stream data, including temperature, device ID, and time data. Approximately 50,000 records will be written every second. The data will be visualized in near real time.
You need to recommend a service to store and query the data.
Which two services can you recommend? Each correct answer presents a complete solution.
NOTE: Each correct selection is worth one point.

A. Azure Table Storage
B. Azure Event Grid
C. Azure Cosmos DB SQL API
D. Azure Time Series Insights

Answer: CD
Explanation:
D: Time Series Insights is a fully managed service for time series data. In this architecture, Time Series Insights performs the roles of stream processing, data store, and analytics and reporting. It accepts streaming data from either IoT Hub or Event Hubs and stores, processes, analyzes, and displays the data in near real time.
C: The processed data is stored in an analytical data store, such as Azure Data Explorer, HBase, Azure Cosmos DB, Azure Data Lake, or Blob Storage.
Reference:
https://docs.microsoft.com/en-us/azure/architecture/data-guide/scenarios/time-series

QUESTION 35
You are designing an application that will aggregate content for users.
You need to recommend a database solution for the application. The solution must meet the following requirements:
- Support SQL commands.
- Support multi-master writes.
- Guarantee low latency read operations.

What should you include in the recommendation?

A. Azure Cosmos DB SQL API
B. Azure SQL Database that uses active geo-replication
C. Azure SQL Database Hyperscale
D. Azure Database for PostgreSQL

Answer: B
Explanation:
With Cosmos DB's novel multi-region (multi-master) writes replication protocol, every region supports both writes and reads. The multi-region writes capability also enables:
Unlimited elastic write and read scalability.
99.999% read and write availability all around the world.
Guaranteed reads and writes served in less than 10 milliseconds at the 99th percentile.
Reference:
https://docs.microsoft.com/en-us/azure/cosmos-db/distribute-data-globally

QUESTION 36
Hotspot Question
You have an Azure subscription that contains the SQL servers on Azure shown in the following table.

Name	Resource group	Location
SQLsvr1	RG1	East US
SQLsvr2	RG2	West US

The subscription contains the storage accounts shown in the following table.

Name	Resource group	Location	Account kind
storage1	RG1	East US	StorageV2 (general purposev2)
storage2	RG2	Central US	BlobStorage

You create the Azure SQL databases shown in the following table.

Name	Resource group	Server	Pricing tier
SQLdb1	RG1	SQLsvr1	Standard
SQLdb2	RG1	SQLsvr1	Standard
SQLdb3	RG2	SQLsvr2	Premium

For each of the following statements, select Yes if the statement is true. Otherwise, select No.
NOTE: Each correct selection is worth one point.

Answer Area

Statements	Yes	No
When you enable auditing for SQLdb1, you can store the audit information to storage1.	○	○
When you enable auditing for SQLdb2, you can store the audit information to storage2.	○	○
When you enable auditing for SQLdb3, you can store the audit information to storage2.	○	○

Answer:

Answer Area

Statements	Yes	No
When you enable auditing for SQLdb1, you can store the audit information to storage1.	○	○
When you enable auditing for SQLdb2, you can store the audit information to storage2.	○	○
When you enable auditing for SQLdb3, you can store the audit information to storage2.	○	○

Explanation:
Box 1: Yes
Be sure that the destination is in the same region as your database and server.
Box 2: No
Since the regions are not the same.
Box 3: Yes
Blob Storage is always standard but SQL database premium supports audit logs.
Reference:
https://docs.microsoft.com/en-us/azure/sql-database/sql-database-auditing

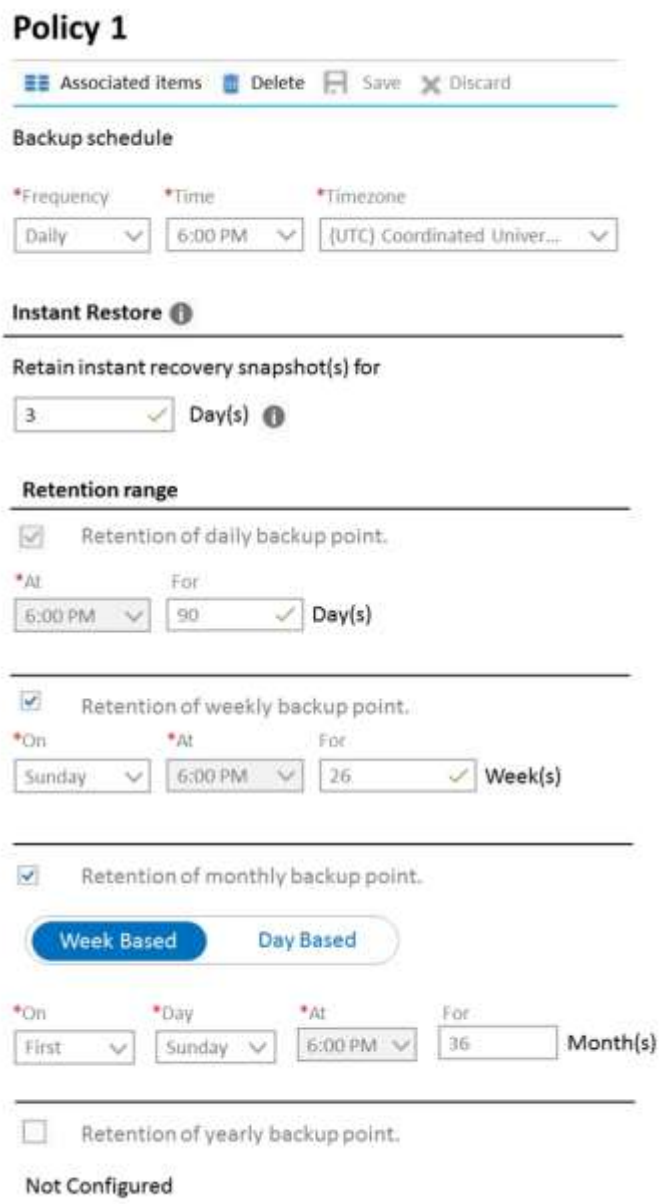
QUESTION 37
You have SQL Server on an Azure virtual machine. The databases are written to nightly as part of a batch process.
You need to recommend a disaster recovery solution for the data. The solution must meet the following requirements:
- Provide the ability to recover in the event of a regional outage.
- Support a recovery time objective (RTO) of 15 minutes.
- Support a recovery point objective (RPO) of 24 hours.
- Support automated recovery.
- Minimize costs.

What should you include in the recommendation?

A. Azure virtual machine availability sets
B. Azure Disk Backup
C. an Always On availability group
D. Azure Site Recovery

Answer: D
Explanation:
Replication with Azure Site Recover:
RTO is typically less than 15 minutes.
RPO: One hour for application consistency and five minutes for crash consistency.
Incorrect Answers:
B: Too slow.
C: Always On availability group RPO: Because replication to the secondary replica is asynchronous, there's some data loss.
Reference:
https://docs.microsoft.com/en-us/azure/site-recovery/site-recovery-sql

QUESTION 38
Hotspot Question
You plan to deploy the backup policy shown in the following exhibit.



Use the drop-down menus to select the answer choice that completes each statement based on the information presented in the graphic.
NOTE: Each correct selection is worth one point.

Answer Area

Virtual machines that are backed up by using the policy can be recovered for up to a maximum of **[answer choice]**:

- 90 days
- 26 weeks
- 36 months
- 45 months

The minimum recovery point objective (RPO) for virtual machines that are backed up by using the policy is **[answer choice]**:

- 1 hour
- 1 day
- 1 week
- 1 month
- 1 year

Answer:

Answer Area

Virtual machines that are backed up by using the policy can be recovered for up to a maximum of **[answer choice]**:

- 90 days
- 26 weeks
- **36 months**
- 45 months

The minimum recovery point objective (RPO) for virtual machines that are backed up by using the policy is **[answer choice]**:

- 1 hour
- **1 day**
- 1 week
- 1 month
- 1 year

QUESTION 39

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You need to deploy resources to host a stateless web app in an Azure subscription. The solution must meet the following requirements:

- Provide access to the full .NET framework.
- Provide redundancy if an Azure region fails.
- Grant administrators access to the operating system to install custom application dependencies.

Solution: You deploy two Azure virtual machines to two Azure regions, and you create an Azure Traffic Manager profile.
Does this meet the goal?

A. Yes
B. No

Answer: A
Explanation:
Azure Traffic Manager is a DNS-based traffic load balancer that enables you to distribute traffic optimally to services across global Azure regions, while providing high availability and responsiveness.

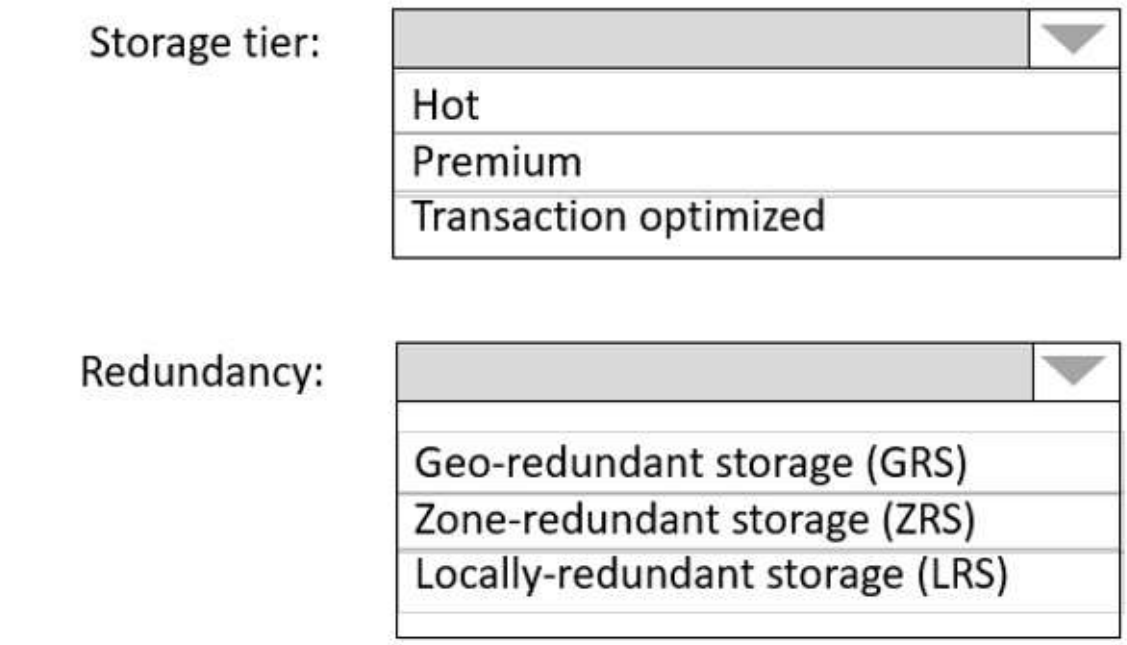
QUESTION 40
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.
After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.
You need to deploy resources to host a stateless web app in an Azure subscription. The solution must meet the following requirements:
- Provide access to the full .NET framework.
- Provide redundancy if an Azure region fails.
- Grant administrators access to the operating system to install custom application dependencies.

Solution: You deploy two Azure virtual machines to two Azure regions, and you deploy an Azure Application Gateway.
Does this meet the goal?

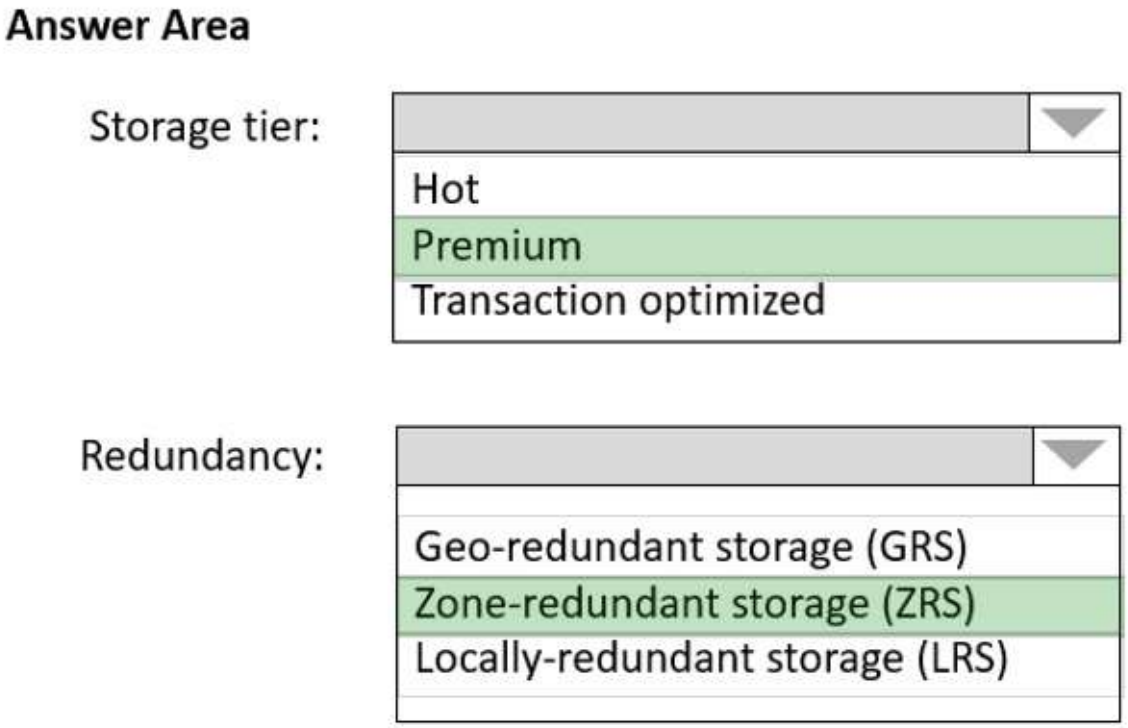
A. Yes
B. No

Answer: B
Explanation:
App Gateway will balance the traffic between VMs deployed in the same region. Create an Azure Traffic Manager profile instead.

QUESTION 41
Hotspot Question
You plan to create an Azure Storage account that will host file shares. The shares will be accessed from on-premises applications that are transaction-intensive.
You need to recommend a solution to minimize latency when accessing the file shares. The solution must provide the highest-level of resiliency for the selected storage tier.
What should you include in the recommendation? To answer, select the appropriate options in the answer area.
NOTE: Each correct selection is worth one point.



Answer:



Explanation:
Box 1: Premium
Premium: Premium file shares are backed by solid-state drives (SSDs) and provide consistent high performance and low latency, within single-digit milliseconds for most IO operations, for IO-intensive workloads.
Incorrect Answers:

- Hot: Hot file shares offer storage optimized for general purpose file sharing scenarios such as team shares. Hot file shares are offered on the standard storage hardware backed by HDDs.
- Transaction optimized: Transaction optimized file shares enable transaction heavy workloads that don't need the latency offered by premium file shares. Transaction optimized file shares are offered on the standard storage

hardware backed by hard disk drives (HDDs). Transaction optimized has historically been called "standard", however this refers to the storage media type rather than the tier itself (the hot and cool are also "standard" tiers, because they are on standard storage hardware).

Box 2: Zone-redundant storage (ZRS):
Premium Azure file shares only support LRS and ZRS.
Zone-redundant storage (ZRS): With ZRS, three copies of each file stored, however these copies are physically isolated in three distinct storage clusters in different Azure availability zones.
Reference:
https://docs.microsoft.com/en-us/azure/storage/files/storage-files-planning

QUESTION 42
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.
After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.
You need to deploy resources to host a stateless web app in an Azure subscription. The solution must meet the following requirements:
- Provide access to the full .NET framework.
- Provide redundancy if an Azure region fails.
- Grant administrators access to the operating system to install custom application dependencies.

Solution: You deploy an Azure virtual machine scale set that uses autoscaling.
Does this meet the goal?

A. Yes
B. No

Answer: B
Explanation:
Instead, you should deploy two Azure virtual machines to two Azure regions, and you create a Traffic Manager profile.

QUESTION 43
You plan to move a web app named App1 from an on-premises datacenter to Azure.
App1 depends on a custom COM component that is installed on the host server.
You need to recommend a solution to host App1 in Azure. The solution must meet the following requirements:
- App1 must be available to users if an Azure datacenter becomes unavailable.
- Costs must be minimized.

What should you include in the recommendation?

A. In two Azure regions, deploy a load balancer and a web app.
B. In two Azure regions, deploy a load balancer and a virtual machine scale set.
C. Deploy a load balancer and a virtual machine scale set across two availability zones.
D. In two Azure regions, deploy an Azure Traffic Manager profile and a web app.

Answer: C

QUESTION 44
You have an Azure subscription that contains a Basic Azure virtual WAN named VirtualWAN1 and the virtual hubs shown in the following table.

Name	Location
Hub1	US East
Hub2	US West

You have an ExpressRoute circuit in the US East Azure region.
You need to create an ExpressRoute association to VirtualWAN1.
What should you do first?

A. Upgrade VirtualWAN1 to Standard.
B. Create a gateway on Hub1.
C. Enable the ExpressRoute premium add-on.
D. Create a hub virtual network in US East.

Answer: A
Explanation:
A basic Azure virtual WAN does not support express route. You have to upgrade to standard.
Reference:
https://docs.microsoft.com/en-us/azure/virtual-wan/virtual-wan-about

QUESTION 45
You have an Azure subscription that contains a storage account.
An application sometimes writes duplicate files to the storage account.
You have a PowerShell script that identifies and deletes duplicate files in the storage account. Currently, the script is run manually after approval from the operations manager.
You need to recommend a serverless solution that performs the following actions:
- Runs the script once an hour to identify whether duplicate files exist
- Sends an email notification to the operations manager requesting approval to delete the duplicate files
- Processes an email response from the operations manager specifying whether the deletion was approved
- Runs the script if the deletion was approved

What should you include in the recommendation?

A. Azure Logic Apps and Azure Event Grid
B. Azure Logic Apps and Azure Functions
C. Azure Pipelines and Azure Service Fabric
D. Azure Functions and Azure Batch

Answer: B
Explanation:
You can schedule a powershell script with Azure Logic Apps.
When you want to run code that performs a specific job in your logic apps, you can create your own function by using Azure Functions. This service helps you create Node.js, C#, and F# functions so you don't have to build a complete app or infrastructure to run code. You can also call logic apps from inside Azure functions.
Reference:
https://docs.microsoft.com/en-us/azure/logic-apps/logic-apps-azure-functions

QUESTION 46
Your company has the infrastructure shown in the following table.

Location	Resource
Azure	• Azure subscription named Subscription1 • 20 Azure web apps
On-premises datacenter	• Active Directory domain • Server running Azure AD Connect • Linux computer named Server1

The on-premises Active Directory domain syncs with Azure Active Directory (Azure AD).
Server1 runs an application named App1 that uses LDAP queries to verify user identities in the on-premises Active

Directory domain.
You plan to migrate Server1 to a virtual machine in Subscription1.
A company security policy states that the virtual machines and services deployed to Subscription1 must be prevented from accessing the on-premises network.
You need to recommend a solution to ensure that App1 continues to function after the migration. The solution must meet the security policy.
What should you include in the recommendation?

A. Azure AD Application Proxy
B. the Active Directory Domain Services role on a virtual machine
C. an Azure VPN gateway
D. Azure AD Domain Services (Azure AD DS)

Answer: D
Explanation:
Azure Active Directory Domain Services (Azure AD DS) provides managed domain services such as domain join, group policy, lightweight directory access protocol (LDAP), and Kerberos/NTLM authentication.
Reference:
https://docs.microsoft.com/en-us/azure/active-directory-domain-services/overview

QUESTION 47
You need to design a solution that will execute custom C# code in response to an event routed to Azure Event Grid.
The solution must meet the following requirements:
- The executed code must be able to access the private IP address of a Microsoft SQL Server instance that runs on an Azure virtual machine.
- Costs must be minimized.

What should you include in the solution?

A. Azure Logic Apps in the Consumption plan
B. Azure Functions in the Premium plan
C. Azure Functions in the Consumption plan
D. Azure Logic Apps in the integrated service environment

Answer: C
Explanation:
https://docs.microsoft.com/en-us/azure/azure-functions/functions-scale#hosting-plans-comparison

QUESTION 48
You have an on-premises network and an Azure subscription. The on-premises network has several branch offices.
A branch office in Toronto contains a virtual machine named VM1 that is configured as a file server. Users access the shared files on VM1 from all the offices.
You need to recommend a solution to ensure that the users can access the shared files as quickly as possible if the Toronto branch office is inaccessible.
What should you include in the recommendation?

A. a Recovery Services vault and Windows Server Backup
B. Azure blob containers and Azure File Sync
C. a Recovery Services vault and Azure Backup
D. an Azure file share and Azure File Sync

Answer: D
Explanation:
https://docs.microsoft.com/en-us/azure/storage/files/storage-sync-files-deployment-guide

QUESTION 49
Hotspot Question

You have an Azure subscription named Subscription1 that is linked to a hybrid Azure Active Directory (Azure AD) tenant.
You have an on-premises datacenter that does **NOT** have a VPN connection to Subscription1. The datacenter contains a computer named Server1 that has Microsoft SQL Server 2016 installed. Server is prevented from accessing the internet.
An Azure logic app resource named LogicApp1 requires write access to a database on Server1.
You need to recommend a solution to provide LogicApp1 with the ability to access Server1.
What should you recommend deploying on-premises and in Azure? To answer, select the appropriate options in the answer area.
NOTE: Each correct selection is worth one point.

Answer Area

On-premises:
- A Web Application Proxy for Windows Server
- An Azure AD Application Proxy connector
- An On-premises data gateway
- Hybrid Connection Manager

Azure:
- A connection gateway resource
- An Azure Application Gateway
- An Azure Event Grid domain
- An enterprise application

Answer:

Answer Area

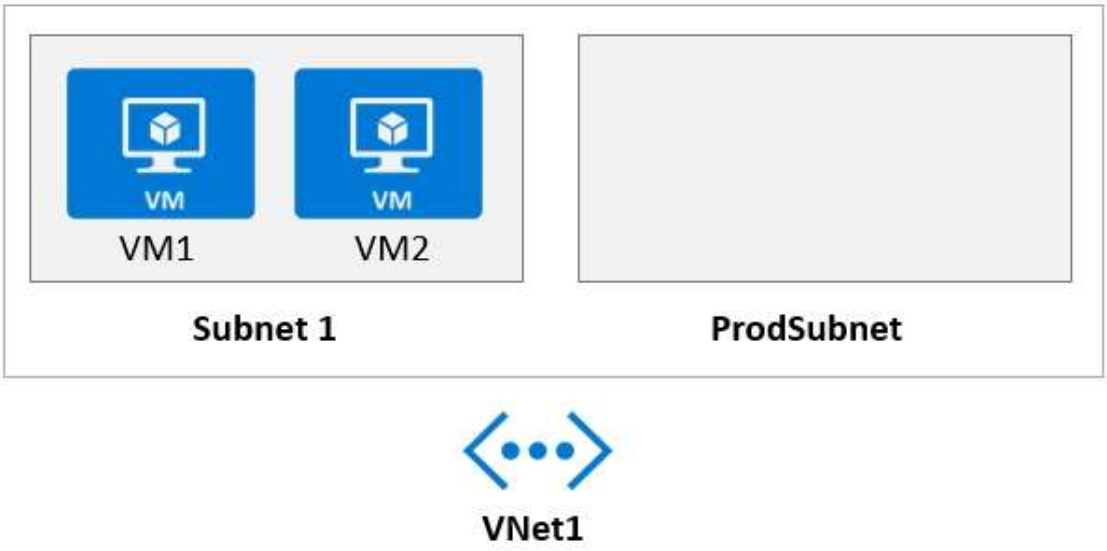
On-premises:
- A Web Application Proxy for Windows Server
- An Azure AD Application Proxy connector
- An On-premises data gateway
- Hybrid Connection Manager

Azure:
- A connection gateway resource
- An Azure Application Gateway
- An Azure Event Grid domain
- An enterprise application

Explanation:
Box 1: An on-premises data gateway
For logic apps in global, multi-tenant Azure that connect to on-premises SQL Server, you need to have the on-premises data gateway installed on a local computer and a data gateway resource that's already created in Azure.
Box 2: A connection gateway resource

Reference:
https://docs.microsoft.com/en-us/azure/connectors/connectors-create-api-sqlazure

QUESTION 50
Hotspot Question
Your company develops a web service that is deployed to an Azure virtual machine named VM1. The web service allows an API to access real-time data from VM1.
The current virtual machine deployment is shown in the Deployment exhibit.



The chief technology officer (CTO) sends you the following email message: "Our developers have deployed the web service to a virtual machine named VM1. Testing has shown that the API is accessible from VM1 and VM2. Our partners must be able to connect to the API over the Internet. Partners will use this data in applications that they develop."
You deploy an Azure API Management (APIM) service. The relevant API Management configuration is shown in the API exhibit.

For each of the following statements, select Yes if the statement is true. Otherwise, select No.
NOTE: Each correct selection is worth one point.

Answer Area

Statements	Yes	No
The API is available to partners over the internet.	○	○
The APIM instance can access real-time data from VM1.	○	○
A VPN gateway is required for partner access.	○	○

Answer:

Answer Area

Statements	Yes	No
The API is available to partners over the internet.	●	○
The APIM instance can access real-time data from VM1.	●	○
A VPN gateway is required for partner access.	○	●

Explanation:
https://docs.microsoft.com/en-us/azure/api-management/api-management-using-with-vnet

QUESTION 51
Drag and Drop Question
Your company has an existing web app that runs on Azure virtual machines.
You need to ensure that the app is protected from SQL injection attempts and uses a layer-7 load balancer. The solution must minimize disruptions to the code of the app.
What should you recommend? To answer, drag the appropriate services to the correct targets. Each service may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.
NOTE: Each correct selection is worth one point.

Services

- Web Application Firewall (WAF)
- Azure Application Gateway
- Azure Load Balancer
- Azure Traffic Manager
- SSL offloading
- URL-based content routing

Answer Area

Azure service: Service

Feature: Service

Answer:

Explanation:
Box 1: Azure Application Gateway
The Azure Application Gateway Web Application Firewall (WAF) provides protection for web applications. These protections are provided by the Open Web Application Security Project (OWASP) Core Rule Set (CRS).
Box 2: Web Application Firewall (WAF)
Reference:
https://docs.microsoft.com/en-us/azure/web-application-firewall/ag/application-gateway-customize-waf-rules-portal

QUESTION 52
You are designing a microservices architecture that will be hosted in an Azure Kubernetes Service (AKS) cluster. Apps that will consume the microservices will be hosted on Azure virtual machines. The virtual machines and the AKS cluster will reside on the same virtual network.
You need to design a solution to expose the microservices to the consumer apps. The solution must meet the following requirements:
- Ingress access to the microservices must be restricted to a single private IP address and protected by using mutual TLS authentication.
- The number of incoming microservice calls must be rate-limited.
- Costs must be minimized.

What should you include in the solution?

A. Azure App Gateway with Azure Web Application Firewall (WAF)
B. Azure API Management Standard tier with a service endpoint
C. Azure Front Door with Azure Web Application Firewall (WAF)
D. Azure API Management Premium tier with virtual network connection

Answer: D
Explanation:
One option is to deploy APIM (API Management) inside the cluster VNet.
The AKS cluster and the applications that consume the microservices might reside within the same VNet, hence there is no reason to expose the cluster publicly as all API traffic will remain within the VNet. For these scenarios, you can deploy API Management into the cluster VNet. API Management Premium tier supports VNet deployment.
Reference:
https://docs.microsoft.com/en-us/azure/api-management/api-management-kubernetes