Practice Test - 3 - Results

Question 1 Skipped

Your company is considering migrating its on-premises infrastructure to Azure. The management team wants to compare the costs of running the existing infrastructure in-house to the projected costs in Azure. Which tool should you use to provide this comparison?

- ○ Resource cost calculator
- ○ Billing calculator

Correct answer

- ◯ **Total Cost of Ownership calculator**

Explanation

The Total Cost of Ownership (TCO) calculator in Azure is specifically designed to compare the costs of running on-premises infrastructure to the projected costs in Azure. It takes into account various factors such as hardware, software, operations, and maintenance costs to provide a comprehensive cost analysis.

- ○ Pricing calculator

Explanation

The Pricing calculator in Azure helps estimate the costs of Azure services based on your usage and requirements. While it can provide cost estimates for specific services, it may not be the best tool for comparing the overall costs of running on-premises infrastructure to Azure.

Overall explanation

The Total Cost of Ownership (TCO) calculator is designed to help you compare the costs for running an on-premises infrastructure compared to an Azure Cloud infrastructure. It takes into

account your current infrastructure configuration, power costs, IT labor costs, and other factors to provide an estimate of the cost difference between the two environments.

Other options -

- **Pricing calculator -** This tool is designed to estimate the cost of provisioning resources in Azure but does not provide a comparison between on-premises infrastructure costs and Azure Cloud infrastructure costs.
- **Resource cost calculator -** This option is incorrect because there is no specific "Resource cost calculator" in Azure. The Pricing calculator and TCO calculator are the main tools used to estimate costs in Azure.
- **Billing calculator -** This option is incorrect because there is no specific "Billing calculator" in Azure. The Pricing calculator estimates costs for provisioning resources in Azure, while the TCO calculator compares on-premises infrastructure costs to Azure Cloud infrastructure costs.

Reference: https://learn.microsoft.com/en-us/training/modules/describe-cost-management-azure/3-compare-pricing-total-cost-of-ownership-calculators

Domain

Describe Azure management and governance

Question 2 Skipped

What is the key advantage of using zone-redundant storage (ZRS) in the primary region?

- ○ **It provides read access to replicated data in the secondary region.**

Explanation

Zone-redundant storage (ZRS) is designed to provide redundancy within a single region by replicating data across multiple availability zones. It does not extend replication to a secondary region, so it does not provide read access to replicated data in the secondary region.

○ **It guarantees data replication to a secondary region.**

Explanation

While zone-redundant storage (ZRS) replicates data across multiple availability zones within the primary region, it does not guarantee data replication to a secondary region. Data replication to a secondary region would typically be provided by options like geo-redundant storage (GRS).

Correct answer

◯ **It allows data to be accessible even if a zone becomes unavailable.**

Explanation

The key advantage of using zone-redundant storage (ZRS) in the primary region is that it allows data to remain accessible even if a zone within the primary region becomes unavailable. This ensures high availability and data accessibility in the event of a zone failure.

○ **It offers the highest level of durability compared to other options.**

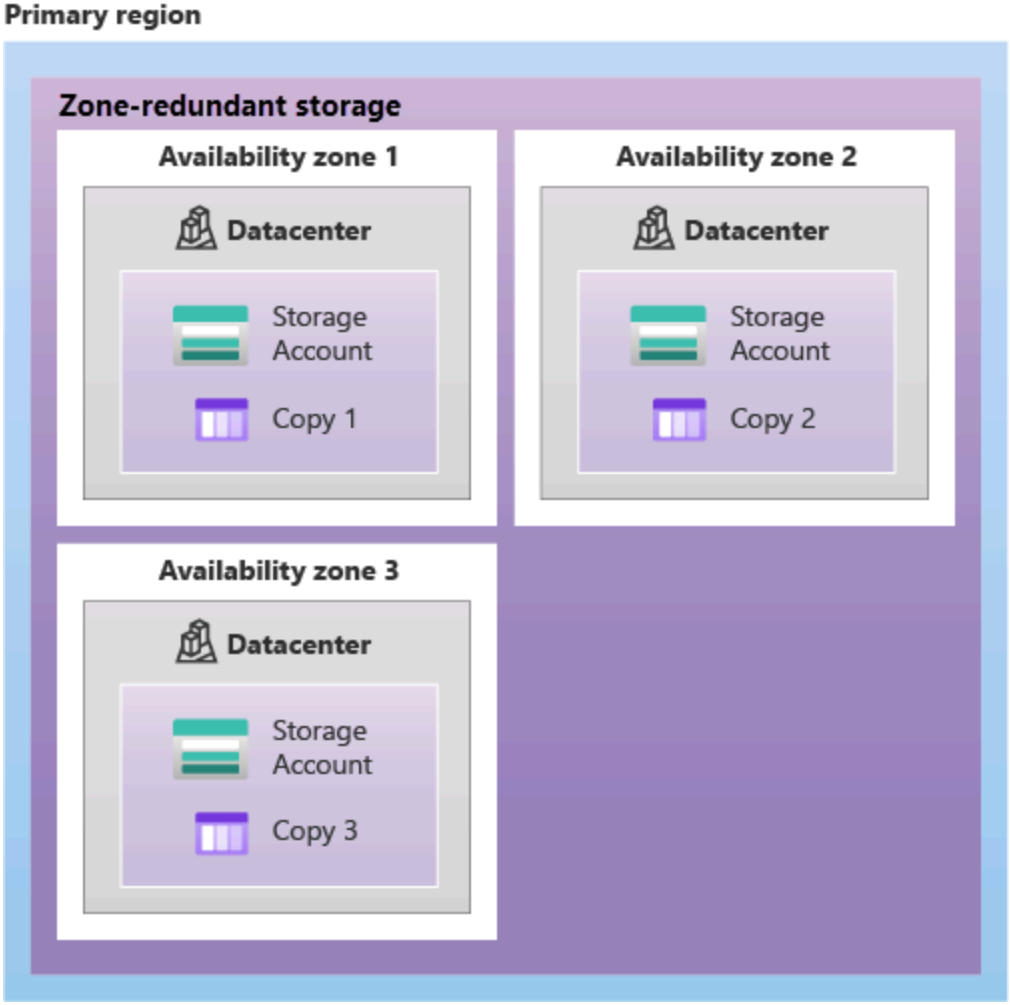
Explanation

Zone-redundant storage (ZRS) does offer a high level of durability within the primary region by replicating data across multiple availability zones. However, it may not necessarily provide the highest level of durability compared to other options such as geo-redundant storage (GRS) that replicate data across regions.

Overall explanation

From the official documentation:

For Availability Zone-enabled Regions, zone-redundant storage (ZRS) replicates your Azure Storage data synchronously across three Azure availability zones in the primary region. ZRS offers durability for Azure Storage data objects of at least 12 nines (99.9999999999%) over a given year.



With ZRS, your data is still accessible for both read and write operations even if a zone becomes unavailable.

Reference: https://learn.microsoft.com/en-us/training/modules/describe-azure-storage-services/3-redundancy

Domain

Describe Azure architecture and services

Question 3 Skipped

Is there a default spending limit for the Azure Free account?

Correct answer

◯ **Yes**

Explanation

Yes, there is a default spending limit for the Azure Free account to prevent unexpected charges. Once the spending limit is reached, the services will be disabled for the rest of the billing period unless the account is upgraded to a paid subscription.

○ **No**

Overall explanation

A credit of **$200** is assigned to the Free account and is valid for 30 days from the date of activation.

Do I have to pay something after 30 days?

At the end of your first 30 days, you can continue using your free products after you upgrade your account to a pay-as-you-go pricing and remove the spending limit. If you stay within the service quantities included for free, you won't have to pay anything. The $200 free credit acts as a spending limit.

Reference: https://azure.microsoft.com/en-in/free/

Domain

Describe Cloud Concepts

Question 4 Skipped

Select the valid types of storage tiers for Azure Blob Storage?

☐ **Infrequently Accessed Tier**

Explanation

The Infrequently Accessed Tier is not a valid storage tier in Azure Blob Storage. Azure Blob Storage offers Hot, Cold, and Archive Storage Tiers for different access patterns and storage requirements.

Correct selection

☐ **Hot Tier**

Explanation

The Hot Tier in Azure Blob Storage is designed for frequently accessed data that requires low latency access. It is suitable for data that is accessed frequently and needs to be readily available.

Correct selection

☐ **Archive Storage Tier**

Explanation

The Archive Storage Tier in Azure Blob Storage is designed for data that is rarely accessed and has long-term retention requirements. It offers the lowest storage cost but has a longer retrieval time compared to the Hot and Cold Tiers.

☐ **Deep Sleep Tier**

Explanation

The Deep Sleep Tier is not a valid storage tier in Azure Blob Storage. Azure Blob Storage offers Hot, Cold, and Archive Storage Tiers to cater to different storage needs and access patterns.

Correct selection

☐ **Cold Tier**

Explanation

The Cold Tier in Azure Blob Storage is designed for data that is accessed less frequently but still needs to be readily available when needed. It offers a lower storage cost compared to the Hot Tier.

Overall explanation

Azure storage offers different access tiers, which allow you to store blob object data in the most cost-effective manner. The available access tiers include:

1) Hot Storage- Optimized for storing data that is accessed frequently.

2) Cool Storage- Optimized for storing data that is infrequently accessed and stored for at least 30 days.

3) Archive Storage- Optimized for storing data that is rarely accessed and stored for at least 180 days with flexible latency requirements (on the order of hours).

Reference : https://docs.microsoft.com/en-us/azure/storage/blobs/storage-blob-storage-tiers?tabs=azure-portal

Domain

Describe Azure architecture and services

Question 5 Skipped

A developer uses a cloud service where they write small code snippets triggered by events, like user uploads, without provisioning or managing servers. Which characteristics define this as serverless computing? (Select all that apply.)

Correct selection

☐ **The provider automatically scales resources based on event frequency**

Explanation

Serverless computing is characterized by the provider automatically scaling resources based on event frequency. This means that the cloud service will allocate resources as needed to handle the incoming events without the developer having to manually provision or manage servers.

Correct selection

☐ **Billing occurs only when the code executes**

Explanation

Billing in serverless computing occurs only when the code executes. This pay-as-you-go model ensures that developers are only charged for the actual usage of their functions, rather than paying for idle resources.

☐ **It requires dedicated virtual machines for each function**

Explanation

Serverless computing does not require dedicated virtual machines for each function. Instead, functions are executed in ephemeral containers that are spun up as needed to handle incoming events, providing a more efficient and cost-effective approach to running code snippets.

☐ **The customer manages the underlying operating system**

Explanation

In serverless computing, the customer does not manage the underlying operating system. The cloud provider takes care of the infrastructure, allowing the developer to focus solely on writing code and defining the functions triggered by events.

Overall explanation

In the scenario described, the developer is using a cloud service where they write small code snippets that are triggered by events, like user uploads, without the need to provision or manage servers. This is a clear example of **serverless computing**. Let's break down the options and identify the correct characteristics.

The provider automatically scales resources based on event frequency

- **Correct**. One of the key features of **serverless computing** is that the cloud provider automatically scales the resources based on demand, without the need for the customer to manage the infrastructure. In serverless environments, the

resources (such as compute power) scale automatically based on the event triggers, like user uploads in this case.

The customer manages the underlying operating system

- **Incorrect**. In **serverless computing**, the customer does **not** manage the underlying operating system. The provider handles the infrastructure, including the operating system and hardware, so the customer can focus solely on writing and deploying code. This is one of the main distinctions of serverless computing—it abstracts away the infrastructure management.

Billing occurs only when the code executes

- **Correct**. In a **serverless model**, billing is typically based on actual usage, meaning the customer is only charged when the code runs (e.g., when an event is triggered). There are no costs for idle time or reserved resources, making it highly cost-efficient for sporadic workloads.

It requires dedicated virtual machines for each function

- **Incorrect**. **Serverless computing** does not require dedicated virtual machines for each function. Instead, it utilizes a **shared pool of resources** managed by the cloud provider. The functions are executed in response to events, and the cloud provider dynamically provisions the necessary resources, often using containers or lightweight compute instances, but there is no need for dedicated virtual machines for each function.

Domain

Describe Cloud Concepts

Question 6 Skipped

What is the main purpose of the Azure Pricing Calculator?

○ **To provision resources in Azure**

Explanation

The Azure Pricing Calculator is not used to provision resources in Azure. It is a tool for estimating the costs associated with provisioning resources, but it does not actually provision the resources themselves. Users would need to use the Azure portal or other Azure services to provision resources.

◯ **To manage the billing of your Azure account**

Explanation

Managing the billing of an Azure account is not the main purpose of the Azure Pricing Calculator. While the calculator provides cost estimates for Azure resources, it does not handle the actual billing or management of Azure accounts. Users would need to use the Azure billing tools and services for managing their Azure account billing.

◯ **To compare the costs of running on-premises and Azure Cloud infrastructure**

Explanation

This option is incorrect because this function is performed by the Total Cost of Ownership (TCO) Calculator, not the Pricing Calculator.

Correct answer

◯ **To estimate the cost of provisioning resources in Azure**

Explanation

The Azure Pricing Calculator is primarily used to estimate the cost of provisioning resources in Azure. It allows users to select the services they plan to use, configure the resources, and get an estimated cost based on the selections made. This helps users plan and budget for their Azure deployments more effectively.

Overall explanation

To estimate the cost of provisioning resources in Azure - This is the correct answer because the Azure Pricing Calculator is specifically designed to help users estimate the cost of

provisioning resources in Azure.

To compare the costs of running on-premises and Azure Cloud infrastructure - This option is incorrect because this function is performed by the Total Cost of Ownership (TCO) Calculator, not the Pricing Calculator.

To provision resources in Azure - This option is incorrect because the Pricing Calculator does not provision resources; it only provides cost estimates for resources. To provision resources, you would use the Azure Portal or other management tools.

To manage the billing of your Azure account - This option is incorrect because the Pricing Calculator does not manage billing. It only provides cost estimates for resources. To manage billing, you would use the Azure Cost Management and Billing tools.

Reference: https://learn.microsoft.com/en-us/training/modules/describe-cost-management-azure/3-compare-pricing-total-cost-of-ownership-calculators

Domain

Describe Azure management and governance

Question 7 Skipped

A healthcare provider transitions to a cloud model to enhance operational efficiency and resilience. They experience rapid deployment of new tools, seamless integration of additional compute power during patient surges, and reduced costs from shared provider infrastructure. Which cloud computing benefits are they realizing through this shift? (Select all that apply.)

Correct selection

☐ **Economy of scale**

Explanation

Economy of scale in cloud computing refers to the cost savings achieved through shared provider infrastructure and resources. The healthcare provider's reduced costs from shared infrastructure indicate that they are realizing the benefits of economy of scale by transitioning to a cloud model.

☐ **High availability**

Explanation

High availability is not explicitly mentioned in the scenario provided. While cloud computing can provide high availability through redundancy and failover mechanisms, this specific benefit is not highlighted in the context of the healthcare provider's transition to a cloud model.

Correct selection

☐ **Agility**

Explanation

Agility in cloud computing refers to the ability to quickly and easily deploy new tools and services, as well as adapt to changing business needs. In this scenario, the healthcare provider is experiencing rapid deployment of new tools, indicating that they are benefiting from the agility of the cloud model.

Correct selection

☐ **Elasticity**

Explanation

Elasticity in cloud computing allows organizations to seamlessly scale their compute resources up or down based on demand. The healthcare provider's ability to integrate additional compute power during patient surges demonstrates that they are benefiting from the elasticity of the cloud model.

Overall explanation

In this scenario, the healthcare provider is transitioning to a cloud model and experiencing benefits such as **rapid deployment of new tools**, **seamless integration of additional compute power** during patient surges, and **reduced costs**from shared provider infrastructure. Let’s break down which cloud computing benefits align with these outcomes.

A) Agility

- **Agility** refers to the ability to rapidly develop, test, and deploy applications or new tools with minimal effort. The healthcare provider is experiencing **rapid deployment of new tools**, which is a clear indication of **agility**. The cloud's flexibility allows the provider to quickly adapt to new requirements and integrate new features, improving overall operational efficiency.

  Correct. The healthcare provider is benefiting from agility through the rapid deployment of tools.

B) Elasticity

- **Elasticity** refers to the ability to dynamically scale resources up or down based on demand. The healthcare provider is experiencing **seamless integration of additional compute power during patient surges**, which is a direct benefit of elasticity. Cloud services allow for automatic scaling of resources to accommodate spikes in demand, such as during high patient volumes.

  Correct. Elasticity is evident from the provider's ability to scale compute power as needed.

C) Economy of scale

- **Economy of scale** occurs when the cost per unit of service decreases as the scale of usage increases. The healthcare provider is benefiting from **reduced costs due to shared provider infrastructure**. This is an example of **economy of scale**, where the cloud provider's large-scale infrastructure is shared across many customers, reducing the costs for individual organizations.

  Correct. The healthcare provider is realizing savings due to the shared infrastructure, benefiting from economy of scale.

D) High availability

- **High availability** refers to the ability of a system to remain operational and accessible even during disruptions or failures. While high availability is a key benefit of many cloud systems, the provided information does not explicitly mention anything about ensuring continuous access to patient data or minimizing downtime. However, cloud providers often ensure **high availability** as part of their offerings, so it's a likely benefit.

  Potentially correct, but based on the details provided, this benefit isn't as explicitly described as the others. Nonetheless, high availability is often a part of cloud services.

Domain

Describe Cloud Concepts

Question 8 Skipped

Yes or No:

In the case of Resource groups, the most restrictive lock in the inheritance takes precedence.

Correct answer

◯ **Yes**

Explanation

Yes, in the case of Resource groups, the most restrictive lock in the inheritance takes precedence. This means that if there are multiple locks applied to a resource group, the lock with the most restrictive permissions will override any less restrictive locks. This ensures that the security and integrity of the resource group are maintained according to the strictest level of access control.

◯ **No**

Overall explanation

From the official Azure docs:

When you apply a lock at a parent scope, all resources within that scope inherit the same lock. Even resources you add later inherit the same parent lock. The most restrictive lock in the inheritance takes precedence.

If you have a **Delete** lock on a resource and attempt to delete its resource group, the feature blocks the whole delete operation. Even if the resource group or other resources in the resource group are unlocked, the deletion doesn't happen. You never have a partial deletion.

References: https://docs.microsoft.com/en-us/azure/azure-resource-manager/management/lock-resources?tabs=json

Domain

Describe Azure management and governance

Question 9 Skipped

An organization is planning to migrate large amounts of data from their On-Prem storage to Azure. However, they are worried of incurring huge costs for this transfer and have halted their plans for now.

Is this assumption valid?

Correct answer

- ◯ **No**
- ◯ **Yes**

Overall explanation

Data ingress (incoming) to Azure data centers is free, so the organizations assumptions are invalid.

Pricing details

Data Transfer	Price
Data Transfer In	Free
Data transfer between Availability Zones*	Free
Data transfer within same Availability Zone	Free
Data transfer from Azure origin to Azure CDN	Free

*Starting from July 1, 2021, Data transfer billing between Virtual machines across availability zones will begin. Please see FAQ for additional details.

Reference: https://azure.microsoft.com/en-us/pricing/details/bandwidth/

Domain

Describe Azure management and governance

Question 10 Skipped

A multinational corporation manages its Azure environment, syncing on-premises Active Directory (AD) users to the cloud for app access and enabling legacy apps to authenticate via domain-joined protocols. Which Azure directory services support this hybrid identity strategy? (Select all that apply.)

☐ Microsoft Entra Conditional Access

Explanation

Microsoft Entra Conditional Access is a feature in Azure that allows for setting conditions to control access to resources. While it enhances security by enforcing access policies, it is not a directory service that supports the synchronization of on-premises AD users to the cloud for hybrid identity scenarios.

Correct selection

☐ **Microsoft Entra Domain Services**

Explanation

Microsoft Entra Domain Services is another directory service in Azure that supports the synchronization of on-premises Active Directory users to the cloud. It enables legacy applications to authenticate using domain-joined protocols, making it a suitable choice for the described hybrid identity strategy.

☐ Azure RBAC

Explanation

Azure RBAC (Role-Based Access Control) is not a directory service but a method of managing access to Azure resources based on roles assigned to users or groups. While important for managing permissions within Azure, it does not directly support the described hybrid identity strategy involving on-premises AD synchronization.

Correct selection

☐ **Microsoft Entra ID**

Explanation

Microsoft Entra ID is a directory service in Azure that allows for the synchronization of on-premises Active Directory users to the cloud. It supports hybrid identity scenarios by enabling users to access applications in the cloud using their on-premises AD credentials.

Overall explanation

The correct answers are:

Microsoft Entra ID, for cloud-based identity management

- **Correct**. **Microsoft Entra ID** (formerly known as **Azure Active Directory, or Azure AD**) is the core service for **cloud-based identity management**. It provides **identity synchronization** between on-premises **Active Directory**and the cloud, allowing users to access cloud resources and applications using the same identity. It also supports **hybrid identity** strategies where users can seamlessly access cloud and on-premises applications.

Microsoft Entra Domain Services, for domain-joined authentication

- **Correct**. **Microsoft Entra Domain Services** (formerly **Azure AD Domain Services**) provides **domain-joined authentication** without needing to deploy and manage on-premises domain controllers. It enables legacy applications that require **domain-joined protocols** (such as NTLM or Kerberos) to authenticate users even in a cloud-based environment, supporting hybrid scenarios with both on-premises and cloud resources.

Why the other options are incorrect:

- **Azure RBAC, for role-based resource permissions**: **Azure RBAC** (Role-Based Access Control) is a tool for managing **permissions** to Azure resources, such as virtual machines, storage, and networking. While it is important for controlling access to Azure resources, it doesn't support the **hybrid identity strategy** or **user authentication** related to syncing on-premises AD users or enabling domain-joined protocols.

- **Microsoft Entra Conditional Access, for policy-based access control**: **Microsoft Entra Conditional Access** is used to enforce **access policies** (such as multi-factor authentication or blocking access based on user location), but it doesn't directly support **identity synchronization** or **domain-joined authentication**. It's more about securing access to apps and resources, rather than managing hybrid identity.

Domain

Describe Azure architecture and services

Question 11 Skipped

A university secures its Azure resources, using a tool to classify sensitive research data across storage accounts and enforce retention policies, integrating with on-premises file shares. Which Azure governance tool fits this need?

Correct answer

◯ **Microsoft Purview**

Explanation

Microsoft Purview is a data governance service in Azure that helps organizations discover, classify, and manage sensitive data across on-premises, cloud, and hybrid environments. It integrates with various data sources, including storage accounts and on-premises file shares, to provide insights into data usage, classification, and retention policies. In this scenario, Microsoft Purview fits the university's need to classify sensitive research data and enforce retention policies.

◯ **Azure Policy**

Explanation

Azure Policy is a service in Azure that allows you to create, assign, and manage policies to enforce different rules and effects over your resources. While Azure Policy can be used to enforce compliance requirements and manage resources, it is not specifically designed for classifying sensitive data or enforcing retention policies across storage accounts.

◯ **Azure Resource Locks**

Explanation

Azure Resource Locks are used to prevent accidental deletion or modification of Azure resources. While resource locks can help protect critical resources from being accidentally changed or deleted, they do not provide the data classification and retention policy enforcement capabilities required in this scenario.

◯ **Azure Monitor**

Explanation

Azure Monitor is a service in Azure that provides monitoring and alerting capabilities for resources and applications in Azure. While Azure Monitor can help track the performance and health of Azure resources, it is not specifically designed for data classification or enforcing retention policies across storage accounts and on-premises file shares.

Overall explanation

The correct answer is: **Microsoft Purview, for data classification and governance**

Microsoft Purview is the Azure governance tool designed to help organizations with **data classification**, **data governance**, and **compliance**. It can classify sensitive data, enforce **retention policies**, and integrate with on-premises resources like file shares to manage and protect data across both cloud and on-premises environments. This makes it ideal for the university to manage its sensitive research data across **Azure storage accounts** and **on-premises file shares**.

Why the other options are incorrect:

- **Azure Policy, for resource compliance rules**: **Azure Policy** is used to enforce **compliance rules** and **governance** for **Azure resources** (e.g., virtual machines, networks). It's not specifically designed for **data classification** or managing sensitive data in storage accounts, which is more of a focus for **Microsoft Purview**.

- **Azure Resource Locks, for preventing deletions**: **Azure Resource Locks** are used to **prevent accidental deletion** or modification of **Azure resources**. While useful for preventing resource deletions, they don't provide data classification, retention policy enforcement, or governance capabilities related to data.

- **Azure Monitor, for tracking data access**: **Azure Monitor** is designed for monitoring and logging the performance and health of Azure resources, but it doesn't focus on **data classification** or **data governance**. It can track **access patterns** but not in the context of **sensitive data classification** or **retention**.

Domain

Describe Azure management and governance

Question 12 Skipped

A retailer automates VM deployments across subscriptions using a standardized JSON configuration, ensuring consistent networking and storage settings. Which Azure feature enables this declarative resource management?

Correct answer

◯ **Azure Resource Manager (ARM)**

Explanation

Azure Resource Manager (ARM) is the correct choice as it enables declarative resource management in Azure. ARM allows users to define the desired state of their resources in JSON templates, ensuring consistent networking and storage settings across subscriptions. By using ARM templates, users can automate VM deployments and maintain consistency in resource configurations.

○ **Azure Cloud Shell**

Explanation

Azure Cloud Shell is an interactive, browser-based shell that allows users to manage resources in Azure. While it provides a command-line interface for managing Azure resources, it does not specifically enable declarative resource management through standardized JSON configurations for VM deployments across subscriptions.

○ **Azure Arc**

Explanation

Azure Arc is a service that extends Azure management and services to any infrastructure, including on-premises, multi-cloud, and edge environments. While Azure Arc provides centralized management and governance for resources outside of Azure, it is not specifically designed for enabling declarative resource management through standardized JSON configurations for VM deployments across subscriptions.

○ **Azure Service Health**

Explanation

Azure Service Health is a service in Azure that provides personalized guidance and support when issues in Azure services affect users' resources. While it is important for monitoring service health and receiving notifications about incidents, it does not directly enable declarative resource management through standardized JSON configurations for VM deployments.

Overall explanation

The correct answer is: **Azure Resource Manager (ARM), for template-based provisioning**

Azure Resource Manager (ARM) is the service that enables **template-based provisioning** of Azure resources. In this case, the retailer is using a **standardized JSON configuration** (likely an **ARM template**) to automate and manage **VM deployments** consistently across different subscriptions. ARM templates allow you to define and deploy resources in a **declarative manner**, specifying the desired state of the resources (like networking and storage) without

needing to manually configure each resource. This approach ensures consistency and repeatability.

Why the other options are incorrect:

- **Azure Cloud Shell, for scripting deployments**: **Azure Cloud Shell** provides an interactive command-line environment to manage Azure resources, but it doesn't define declarative provisioning like ARM templates. It's useful for scripting but not for automated, template-based resource management.
- **Azure Service Health, for deployment status updates**: **Azure Service Health** provides status updates for Azure services and regions, but it does not play a role in provisioning or automating resource deployment. It's more about monitoring health and outages.
- **Azure Arc, for hybrid resource consistency**: **Azure Arc** extends Azure services to on-premises and multi-cloud environments, allowing for consistent management of hybrid resources. However, in this case, it's **ARM templates** that are driving **template-based provisioning**, not Azure Arc.

Domain

Describe Azure management and governance

Question 13 Skipped

Yes or No:

If you have a **Delete** lock on a resource and attempt to delete its resource group, all resources inside the resource group still get deleted.

Correct answer

◯ **No**

Explanation

This statement is correct. If you have a Delete lock on a resource and try to delete its resource group, the deletion of the resource group will be blocked due to the Delete lock. The resources

inside the resource group will remain unaffected and will not be deleted automatically.

○ **Yes**

Overall explanation

From the official docs:

When you apply a lock at a parent scope, all resources within that scope inherit the same lock. Even resources you add later inherit the same parent lock. The most restrictive lock in the inheritance takes precedence.

If you have a **Delete** lock on a resource and attempt to delete its resource group, the feature **blocks** the whole delete operation. Even if the resource group or other resources in the resource group are unlocked, the deletion **doesn't** happen. You never have a partial deletion.

References: https://docs.microsoft.com/en-us/azure/azure-resource-manager/management/lock-resources

Domain

Describe Azure management and governance

Question 14 Skipped

As a consultant, which of the following Locks would you recommend to an organization to prevent deletion or modification of mission-critical resources?

Correct answer

○ **ReadOnly**

Explanation

The ReadOnly lock restricts all operations that could modify the locked resource, including deletion. This lock is recommended for mission-critical resources to prevent any accidental or unauthorized changes.

○ **CanNotChange**

Explanation

The CanNotChange lock is not a standard lock type in Azure. It does not provide the specific functionality needed to prevent deletion or modification of resources.

○ **isCritical**

Explanation

The isCritical lock is not a standard lock type in Azure. It does not provide the necessary functionality to prevent deletion or modification of resources.

○ **CanNotModify**

Explanation

The CanNotModify lock prevents any modifications to the locked resource, but it does not prevent deletion. This lock may not be sufficient to protect mission-critical resources from being deleted.

Overall explanation

From the official documentation:

As an administrator, you can lock an Azure subscription, resource group, or resource to protect them from accidental user deletions and modifications. The lock overrides any user permissions.

You can set locks that prevent either deletions or modifications. In the portal, these locks are called **Delete** and **Read-only**. In the command line, these locks are called **CanNotDelete** and **ReadOnly**. In the left navigation panel, the subscription lock feature's name is **Resource locks**, while the resource group lock feature's name is **Locks**.

- **CanNotDelete** means authorized users can read and modify a resource, but they can't delete it.
- **ReadOnly** means authorized users can read a resource, but they can't delete or update it. Applying this lock is similar to restricting all authorized users to the permissions that the **Reader** role provides.

Reference : https://docs.microsoft.com/en-us/azure/azure-resource-manager/management/lock-resources

Domain

Describe Azure management and governance

Question 15 Skipped

Your organization is using Azure for disaster recovery purposes. You have set up replication of virtual machines to an Azure region different from the primary region. Which of the following factors could affect the cost of this setup?

Correct selection

☐ **The types of virtual machines being replicated.**

Explanation

The types of virtual machines being replicated can also impact the cost of the setup. Different virtual machine sizes and configurations have varying costs associated with them, so replicating more powerful or resource-intensive virtual machines can result in higher costs for the disaster recovery setup.

Correct selection

☐ **The number of virtual machines being replicated**

Explanation

The cost of replicating virtual machines in Azure for disaster recovery purposes is directly impacted by the number of virtual machines being replicated. More virtual machines being

replicated will result in higher costs due to increased resource consumption and storage requirements.

Correct selection

☐ **The amount of data being replicated**

Explanation

The amount of data being replicated between the primary and secondary regions can significantly affect the cost of the setup. Higher data volumes being replicated will incur additional data transfer costs, storage costs, and potentially impact network bandwidth utilization.

Correct selection

☐ **The network bandwidth between the primary and secondary regions**

Explanation

The network bandwidth between the primary and secondary regions plays a crucial role in determining the cost of the disaster recovery setup. Higher network bandwidth usage for replication can lead to increased data transfer costs and potentially impact overall network performance and costs.

Overall explanation

All of the options could potentially affect the cost of this setup.

- **The number of virtual machines being replicated -** The more virtual machines being replicated, the higher the cost will be, as each VM will require resources to be replicated to the secondary region.
- **The amount of data being replicated** - The amount of data being replicated can have a significant impact on the cost, as data transfer between regions incurs charges.

- **The network bandwidth between the primary and secondary regions -** The network bandwidth between the primary and secondary regions can also impact the cost, as higher bandwidth requirements will result in higher charges.

- **The types of virtual machines being replicated -** The types of virtual machines being replicated could also impact the cost, as certain VM sizes are more expensive than others.

Reference: https://learn.microsoft.com/en-us/azure/site-recovery/site-recovery-overview

Domain

Describe Azure management and governance

Question 16 Skipped

A healthcare provider migrates patient records to Azure, expecting the cloud provider to maintain physical server security and virtualization, while their IT team encrypts data and configures access controls. Which responsibilities align with the shared responsibility model in this context? (Select all that apply.)

Correct selection

☐ **The customer defines access policies for application users**

Explanation

The customer is responsible for defining access policies for application users in the shared responsibility model. This includes configuring access controls, managing user permissions, and ensuring that only authorized users can access the data stored in Azure.

☐ **The provider implements data encryption for all stored records**

Explanation

Wrong - Data encryption is the customer's responsibility, not automatic by the provider.

Correct selection

☐ **The provider secures the physical infrastructure and network**

Explanation

In the shared responsibility model, the cloud provider is responsible for securing the physical infrastructure and network where the data is stored. This includes physical server security and virtualization, ensuring that the underlying infrastructure is protected from unauthorized access.

☐ **The customer manages physical hardware maintenance**

Explanation

The customer's responsibility in the shared responsibility model does not include managing physical hardware maintenance. This task is handled by the cloud provider as part of their infrastructure management.

Overall explanation

In the context of the healthcare provider migrating patient records to Azure, the **shared responsibility model** dictates that both the **cloud provider** and the **customer** have specific responsibilities for securing the environment. The responsibilities are generally divided as follows:

- **Cloud Provider**: Manages the **physical infrastructure**, such as the physical security of the servers, network, and data centers, as well as the underlying **virtualization** layers (hypervisors, for instance).
- **Customer**: Manages the **data** (encryption, access controls) and **applications**, ensuring that the data stored in the cloud is secured and only accessible by authorized users.

Let’s review the options in this context:

The provider secures the physical infrastructure and network

- **Correct**. In the **shared responsibility model**, the **cloud provider** is responsible for securing the **physical infrastructure**, including the data centers and the physical servers, as well as the **network** (e.g., ensuring network security and availability). This is typically the provider's responsibility.

The customer manages physical hardware maintenance

- **Incorrect**. The **customer** does **not** manage physical hardware maintenance in a cloud environment. This responsibility falls to the **cloud provider**, as they own and manage the physical infrastructure in their data centers. The customer focuses on higher-level responsibilities, such as securing the data and configuring access controls.

The provider implements data encryption for all stored records

- **Incorrect**. While the **cloud provider** offers encryption capabilities (e.g., encrypting data at rest or in transit), **data encryption** of specific **customer data** (like patient records in this case) is typically the **customer's responsibility**. The customer must configure the **encryption** and manage keys (though the provider may offer tools and services to assist with this).

The customer defines access policies for application users

- **Correct**. The **customer** is responsible for managing **access controls**, including defining who can access the **applications** and the **data** (e.g., setting up role-based access controls, configuring permissions, etc.). This is a key part of securing the data and ensuring compliance with regulations like HIPAA in the healthcare industry.

Domain

Describe Cloud Concepts

Question 17 Skipped

Yes or No:

Azure Advisor has the ability to provide recommendations for Azure ExpressRoute.

○ **No**

Correct answer

○ **Yes**

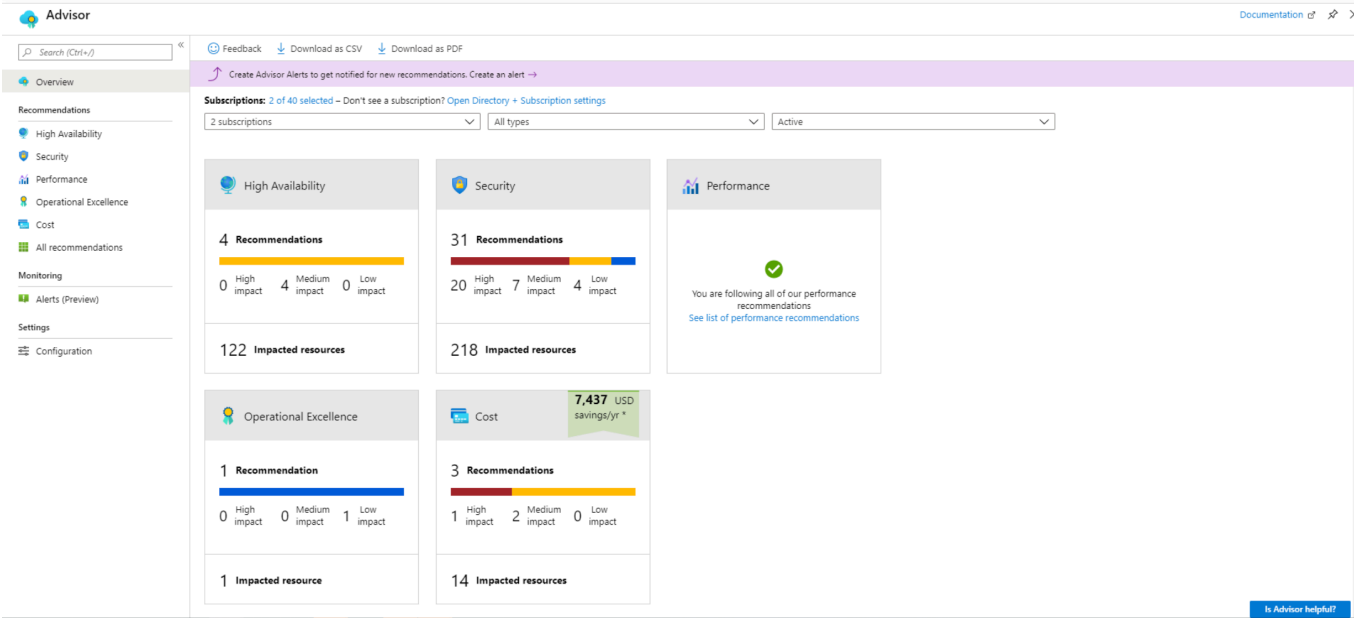
Explanation

Yes, Azure Advisor has the ability to provide recommendations for Azure ExpressRoute. Azure Advisor is a free service that analyzes your Azure resources and configurations, providing personalized recommendations to help optimize your Azure environment for performance, security, and cost-efficiency. This includes recommendations for Azure ExpressRoute configurations and usage.

Overall explanation

From the official Azure documentation:

Advisor is a personalized cloud consultant that helps you follow best practices to optimize your Azure deployments. It analyzes your resource configuration and usage telemetry and then recommends solutions that can help you improve the cost effectiveness, performance, Reliability (formerly called High availability), and security of your Azure resources.



Advisor provides recommendations for Application Gateway, App Services, availability sets, Azure Cache, Azure Data Factory, Azure Database for MySQL, Azure Database for PostgreSQL, Azure Database for MariaDB, Azure ExpressRoute, Azure Cosmos DB, Azure public IP addresses, Azure Synapse Analytics, SQL servers, storage accounts, Traffic Manager profiles, and virtual machines.

Azure Advisor also includes your recommendations from Microsoft Defender for Cloud which may include recommendations for additional resource types.

Reference :https://docs.microsoft.com/en-us/azure/advisor/advisor-overview

Domain

Describe Azure management and governance

Question 18 Skipped

Please fill the blank field(s) in the statement with the right words.

A government agency deploys a sensitive application in Azure, requiring data to remain within national boundaries and leveraging a dedicated region isolated from public access. This setup utilizes Azure's __ regions, designed for compliance with sovereignty laws.

Correct answer

sovereign

Explanation

The setup described, where a **government agency** deploys a **sensitive application** in **Azure** requiring data to remain within **national boundaries** and uses a **dedicated region isolated from public access**, is leveraging Azure's **"sovereign" regions**.

The correct answer is: **Azure's sovereign regions, designed for compliance with sovereignty laws.**

These **sovereign regions** are specifically designed to meet the data residency, compliance, and regulatory requirements of certain countries or regions. They help ensure that the data is stored and processed in compliance with **sovereignty laws**, which often mandate that certain types of data (such as sensitive government or citizen data) must remain within the country's borders and be isolated from public or foreign access.

Some examples of **sovereign regions** in Azure include:

- **Azure Government Regions** in the United States
- **Azure China** regions, operated by 21Vianet in China
- **Azure Germany** regions, operated with a German data trustee model

These regions provide a higher level of control and compliance with specific **sovereignty laws**.

Domain

Describe Azure architecture and services

Question 19 Skipped

The Azure _____ service allows you to create and manage private networks in the cloud and connect them to on-premises networks using a VPN gateway.

○ Azure Traffic Manager

Explanation

Azure Traffic Manager is a DNS-based traffic load balancer that enables you to distribute incoming traffic across multiple endpoints. It is used for improving the availability and performance of your applications, not for creating and managing private networks or connecting them to on-premises networks using a VPN gateway.

Correct answer

○ **Azure Virtual Network**

Explanation

Azure Virtual Network is the correct choice as it allows you to create and manage private networks in the cloud and connect them to on-premises networks using a VPN gateway. It

provides isolation, segmentation, and secure communication between resources deployed in Azure and on-premises environments.

○ **Azure Security Center**

Explanation

Azure Security Center is a unified security management system that provides advanced threat protection across hybrid cloud workloads. It helps to detect and respond to security threats, secure your resources, and protect against cyber attacks. It is not specifically designed for creating and managing private networks or connecting them to on-premises networks using a VPN gateway.

○ **Azure DNS**

Explanation

Azure DNS is a domain name system (DNS) hosting service that provides name resolution using Microsoft Azure infrastructure. It is used for translating domain names to IP addresses, not for creating and managing private networks or connecting them to on-premises networks using a VPN gateway.

Overall explanation

The correct answer is **Azure Virtual Network**. The Azure Virtual Network service allows you to create and manage private networks in the cloud and connect them to on-premises networks using a VPN gateway.

Azure Virtual Network is a networking service that allows you to create and manage virtual networks in the cloud, and connect them securely to your on-premises infrastructure. With Azure Virtual Network, you can create subnets, assign IP addresses, and control traffic flow between virtual machines and other resources.

The VPN gateway in Azure Virtual Network provides a secure, encrypted connection between your virtual network in Azure and your on-premises network. This allows you to extend your on-premises infrastructure to the cloud, and access resources in Azure as if they were located on your local network.

Other Options -

- **Azure DNS:** While Azure DNS provides a scalable and reliable domain name system (DNS) service that can be used to resolve domain names to IP addresses, it is not directly related to creating and managing private networks or connecting them to on-premises networks using a VPN gateway.

- **Azure Traffic Manager:** While Azure Traffic Manager is a global DNS-based traffic load balancer that can be used to distribute traffic across multiple endpoints, it is not directly related to creating and managing private networks or connecting them to on-premises networks using a VPN gateway.

- **Azure Security Center:** While Azure Security Center is a unified security management and monitoring service that provides threat protection for cloud workloads, it is not directly related to creating and managing private networks or connecting them to on-premises networks using a VPN gateway. Azure Security Center is focused on securing cloud resources and workloads, rather than on networking and connectivity.

Reference: https://learn.microsoft.com/en-us/azure/virtual-network/virtual-networks-overview

Domain

Describe Azure architecture and services

Question 20 Skipped

You have configured a VPN connection between an on-premises network and an Azure virtual network using Site-to-Site VPN (IPsec). However, you are experiencing connectivity issues and suspect that there is an issue with the VPN gateway. Which Azure service can you use to diagnose connectivity issues for your VPN gateway?

- ○ Azure Traffic Manager
- ○ Azure ExpressRoute
- ○ Azure Application Gateway

Correct answer

◯ **Azure Network Watcher**

Overall explanation

The correct answer is Azure Network Watcher.

Azure Network Watcher is a monitoring and diagnostic service that provides tools to diagnose network issues in Azure. It includes a VPN diagnostics tool that can be used to diagnose connectivity issues with VPN gateways, including Site-to-Site VPN (IPsec) gateways. The tool can help identify configuration issues, routing issues, and other common problems that can cause connectivity issues.

Other Options:

- **Azure Traffic Manager**: This is a global DNS load balancer that can be used to distribute incoming traffic across multiple Azure regions. It is not designed for diagnosing network connectivity issues.
- **Azure Application Gateway:** This is a web traffic load balancer that can be used to manage and route HTTP and HTTPS traffic. It is not designed for diagnosing network connectivity issues.
- **Azure ExpressRoute:** This is a dedicated, private connection between an on-premises datacenter and Azure. It is not used for Site-to-Site VPN (IPsec) connections, and is not designed for diagnosing connectivity issues with VPN gateways.

Reference: https://learn.microsoft.com/en-us/azure/network-watcher/network-watcher-monitoring-overview

Domain

Describe Azure architecture and services

Question 21 Skipped

A developer deploys a web app on Azure, using a browser-based dashboard to create resources, a command-line tool for scripting tasks, and a method to define resources declaratively. Which tools facilitate this management and deployment? (Select all that apply.)

Correct selection

☐ **ARM Templates**

Explanation

ARM Templates (Azure Resource Manager Templates) are JSON files that define the infrastructure and configuration of Azure resources in a declarative format. Developers can use ARM Templates to define and deploy resources consistently and efficiently, making it a suitable choice for managing and deploying web apps on Azure.

Correct selection

☐ **Azure Portal**

Explanation

The Azure Portal is a browser-based dashboard that allows users to easily create, manage, and monitor Azure resources. It provides a graphical user interface for deploying web apps and other resources without the need for coding or scripting.

☐ **Azure Service Health**

Explanation

Azure Service Health is a service that provides personalized alerts and guidance when Azure service issues affect resources. While it is important for monitoring the health of Azure services, it is not directly related to the management and deployment of web apps using a browser-based dashboard, command-line tool, and declarative resource definition.

Correct selection

☐ **Azure Cloud Shell**

Explanation

Azure Cloud Shell is a command-line tool that provides a browser-based shell experience for managing Azure resources. It allows developers to run scripts and commands to automate tasks, including deploying web apps, without the need to install any tools locally.

Overall explanation

The correct tools that facilitate management and deployment in this scenario are:

Azure Portal, for a graphical interface

- **Correct**. The **Azure Portal** is a **browser-based dashboard** that provides a **graphical user interface (GUI)** to create, manage, and monitor Azure resources. This aligns with the developer's use of a graphical interface for creating resources.

Azure Cloud Shell, for CLI and PowerShell scripting

- **Correct**. **Azure Cloud Shell** provides a **command-line interface (CLI)** and **PowerShell scripting** environment directly within the browser, which allows developers to execute various tasks and manage resources programmatically.

ARM Templates, for infrastructure as code

- **Correct**. **Azure Resource Manager (ARM) Templates** allow developers to define Azure resources declaratively, describing the desired infrastructure and configuration using **infrastructure-as-code (IaC)** principles. This method enables repeatable and automated deployment of resources.

Azure Service Health, for outage notifications

- **Incorrect**. **Azure Service Health** provides alerts and notifications about the **status** of Azure services and regions, such as outages or planned maintenance.

However, it is not involved in the **management or deployment** of resources. Therefore, it does not directly facilitate resource creation or management.

Domain

Describe Azure management and governance

Question 22 Skipped

A global retailer designs an Azure architecture to host its e-commerce platform, aiming for resilience and logical organization. They deploy virtual machines across isolated locations within a region and group related resources for simplified management. Which core architectural components of Azure are they leveraging? (Select all that apply.)

☐ **Management Groups, for subscription-level policy enforcement**

Explanation

Incorrect - Management Groups manage subscriptions, not individual resources; irrelevant here. This option tests hierarchy concepts.

Correct selection

☐ **Availability Zones, for fault isolation within a region**

Explanation

Availability Zones in Azure provide fault isolation within a region by distributing resources across multiple data centers. This helps ensure high availability and resiliency by reducing the impact of potential failures in a single location.

Correct selection

☐ **Resource Groups, for logical resource containment**

Explanation

Resource Groups in Azure are used for logical resource containment, allowing related resources to be managed, secured, and organized together. They simplify management tasks such as monitoring, access control, and resource deployment.

☐ **Region Pairs, for redundancy across geographic areas**

Explanation

Incorrect - Region Pairs provide cross-region redundancy, not within-region isolation; the scenario doesn't mention multiple regions. A trap option.

Overall explanation

In this scenario, the global retailer is designing an **Azure architecture** to host their e-commerce platform, focusing on **resilience** and **logical organization**. They are deploying **virtual machines** across **isolated locations within a region** and grouping **related resources** for simplified management. Let's break down the Azure components being leveraged:

Availability Zones, for fault isolation within a region

- **Correct**. **Availability Zones** are physical locations within an Azure region that are isolated from each other to ensure **fault tolerance** and **high availability**. By deploying virtual machines across **isolated locations within a region**, the retailer is ensuring that their application can remain resilient, even if one zone experiences issues. This provides fault isolation and helps with **resilience** within the region.

Resource Groups, for logical resource containment

- **Correct**. **Resource Groups** are used in Azure to logically group related resources for easier management and organization. Grouping related resources (like virtual machines, databases, etc.) under a **Resource Group** simplifies management, monitoring, and access control. This aligns with the retailer's goal of **logical organization** of their resources.

Region Pairs, for redundancy across geographic areas

- **Incorrect**. **Region Pairs** provide **redundancy across geographic areas** for disaster recovery purposes, but the scenario specifies that the retailer is

deploying resources across **isolated locations within a region**, which would be more aligned with **Availability Zones** rather than **Region Pairs**. Region pairs are typically used for cross-region redundancy and failover, not for isolation within a single region.

Management Groups, for subscription-level policy enforcement

- **Incorrect**. **Management Groups** are used in Azure to manage and enforce policies at a higher level (subscription or organizational level). This component is useful for **governance**, but it's not directly related to organizing resources within a specific region or simplifying resource management at the level described in the scenario. The retailer is focusing on **resilience** and **resource organization**, which are covered by Availability Zones and Resource Groups.

Domain

Describe Azure architecture and services

Question 23 Skipped

You want to set up a VPN connection between two Azure virtual networks that are in different regions. Which of the following VPN connection types would be best suited for this scenario?

- ○ **VNet-to-VNet (IPsec)**
- ○ **Point-to-Site (VPN over SSL)**
- ○ **ExpressRoute**

Correct answer

- ○ **Site-to-Site (IPsec)**

Overall explanation

The correct answer **Site-to-Site (IPsec).**

Site-to-Site (IPsec) VPN connection type is used to connect two or more virtual networks that are in different regions, data centers, or even different cloud providers. It allows you to connect an on-premises network or a branch office network to an Azure virtual network, or to connect two Azure virtual networks that are in different regions. Site-to-Site VPN connections use a VPN gateway to provide a secure connection over the Internet. IPsec is the protocol used to secure the VPN connection.

Other options:

VNet-to-VNet (IPsec): This is not the best choice for this scenario because it is designed to connect two virtual networks within the same region. It creates an IPsec tunnel between the two virtual networks, allowing resources to communicate securely and privately over the Microsoft backbone network. Since the two virtual networks in this scenario are in different regions, VNet-to-VNet (IPsec) would not be the most efficient or cost-effective option.

Point-to-Site (VPN over SSL): This is used to connect individual devices to an Azure virtual network over a VPN connection. It is not suitable for connecting virtual networks in different regions.

ExpressRoute: This is a private connection between an on-premises infrastructure and an Azure data center. It provides dedicated, high-speed connectivity between your network and Azure, but it is not suitable for connecting virtual networks in different regions.

Reference: https://learn.microsoft.com/en-us/azure/vpn-gateway/tutorial-site-to-site-portal

Domain

Describe Azure architecture and services

Question 24 Skipped

Which of the following would you need to set up alerts for outages or when autoscaling is about to deploy new instances?

Correct answer

◯ **Azure Monitor**

Explanation

Azure Monitor is the correct choice as it provides a comprehensive solution for collecting, analyzing, and acting on telemetry data from Azure and on-premises resources. It allows you to set up alerts based on metrics, logs, and activity logs to monitor the health and performance of your resources, including outages and autoscaling events.

◯ **Azure Bastion**

Explanation

Azure Bastion is a fully managed PaaS service that provides secure and seamless RDP and SSH access to your virtual machines directly through the Azure Portal. It is not related to setting up alerts for outages or autoscaling events.

◯ **Azure Service Health**

Explanation

Azure Service Health provides personalized guidance and support during service incidents, planned maintenance events, and health advisories. While it helps you stay informed about the status of Azure services, it does not specifically enable setting up alerts for outages or autoscaling events.

◯ **Azure Advisor**

Explanation

Azure Advisor is a personalized cloud consultant that helps you follow best practices to optimize your Azure resources for high availability, security, performance, and cost. While it provides recommendations for improving your Azure environment, it does not offer the functionality to set up alerts for outages or autoscaling events.

Overall explanation

You can use Azure Monitor to set up alerts for key events that are related to your specific resources.

Reference : https://docs.microsoft.com/en-ca/learn/modules/monitoring-fundamentals/3-analyze-decision-criteria

Domain

Describe Azure management and governance

Question 25 Skipped

Which scenario BEST illustrates the cloud benefit of economy of scale?

○ **A company quickly recovers data after a hardware failure**

Explanation

Quickly recovering data after a hardware failure is more related to the cloud benefit of resilience and disaster recovery, rather than economy of scale. This scenario focuses on the ability to maintain data availability and business continuity in the face of unexpected events.

○ **An app scales automatically during a sales event**

Explanation

While automatic scaling during a sales event is a valuable cloud feature, it does not directly demonstrate the cloud benefit of economy of scale. This scenario highlights the scalability and flexibility of cloud resources to meet fluctuating demand, rather than the cost efficiencies gained through serving a large customer base.

Correct answer

○ **A large provider offers lower per-unit costs by serving millions of customers**

Explanation

This scenario best illustrates the cloud benefit of economy of scale because a large provider can offer lower per-unit costs by serving millions of customers. By leveraging economies of scale, the provider can spread out the fixed costs of infrastructure and services across a large customer base, resulting in cost savings for each individual customer.

○ **A small business pays only for the storage it uses each month**

Explanation

While paying only for the storage used each month is a cost-effective approach, it does not directly relate to the cloud benefit of economy of scale. This scenario is more about cost efficiency and resource optimization for a small business.

Overall explanation

Economy of scale, occurs when cloud providers reduce costs by spreading infrastructure expenses across many users, benefiting customers with lower rates.

Domain

Describe Cloud Concepts

Question 26 Skipped

Yes or No:

A SaaS solution allows access to the underlying Operating System of the application.

Correct answer

○ **No**

Explanation

The correct choice is No because a SaaS solution is designed to provide users with access to a software application hosted in the cloud without the need to manage the underlying infrastructure or operating system. Users interact with the application itself, not the operating system it runs on, making direct access to the underlying operating system unlikely in a SaaS environment.

○ **Yes**

Explanation

A SaaS (Software as a Service) solution typically abstracts the underlying infrastructure and operating system from the end-user. Users of a SaaS solution interact with the application through a web browser or application interface without needing to manage or access the underlying operating system. Therefore, it is not common for a SaaS solution to allow direct access to the underlying operating system.

Overall explanation

A SaaS solution does **not** provide access to the operating system. In fact, with a SaaS we have the least maintenance effort but also the least degree of control.

An example of SaaS is Zoom, Outlook etc.

Reference: https://azure.microsoft.com/en-gb/overview/what-is-saas/

Domain

Describe Cloud Concepts

Question 27 Skipped

True or False:

Each Azure Subscription can trust multiple Active Directories.

○ True

Explanation

Each Azure Subscription can only trust a single Active Directory. This relationship is established during the initial setup of the subscription and cannot be changed to trust multiple Active Directories. Therefore, the statement that each Azure Subscription can trust multiple Active Directories is false.

Correct answer

○ **False**

Explanation

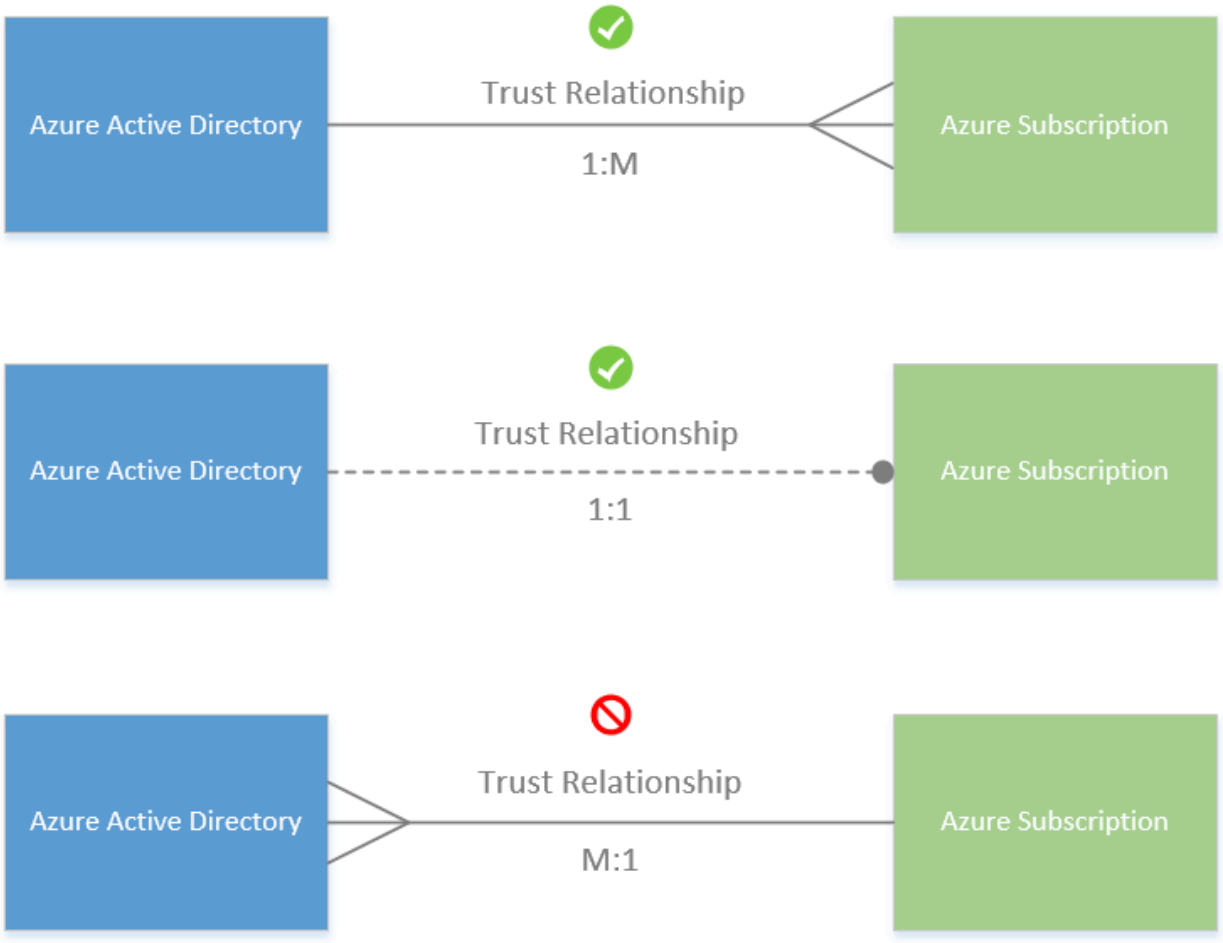
The statement that each Azure Subscription can trust multiple Active Directories is false. Azure Subscriptions are tied to a single Active Directory for authentication and access control purposes. This ensures a clear and secure identity management structure within the subscription.

Overall explanation

From the official Azure docs:

An Azure subscription has a trust relationship with Azure Active Directory (Azure AD). A subscription trusts Azure AD to authenticate users, services, and devices.

Multiple subscriptions can trust the same Azure AD directory. Each subscription can only trust a single directory.



References: https://docs.microsoft.com/en-us/azure/active-directory/fundamentals/active-directory-how-subscriptions-associated-directory

Domain

Describe Azure management and governance

Question 28 Skipped

Which of the following does not affect costs in Azure?

- ○ **Resource Type**

Explanation

The type of resource you use in Azure, such as virtual machines, storage accounts, databases, or networking services, can affect costs. Different resource types have different pricing structures and cost implications.

Correct answer

◯ **Tags**

Explanation

Tags in Azure are metadata labels used for organizing and categorizing resources. While tags are useful for management and organization purposes, they do not directly impact costs in Azure. Tags do not incur additional charges or affect pricing based on their usage.

◯ **Instance Size of VMs**

Explanation

The instance size of virtual machines (VMs) directly affects costs in Azure. Larger VM sizes with more resources will generally have higher costs compared to smaller VM sizes.

◯ **Location**

Explanation

The location of resources in Azure can impact costs, as different regions may have varying pricing for services and resources. Choosing a region closer to your users may incur lower latency costs, while regions with higher demand may have higher pricing.

◯ **Resource usage**

Explanation

Resource usage, such as the amount of compute, storage, and network resources consumed, directly impacts costs in Azure. The more resources you use, the higher your costs will be.

Overall explanation

Tags do not incur costs, but are rather a great way to know which resources are incurring costs!

Great reference on costs - https://docs.microsoft.com/en-ca/learn/modules/plan-manage-azure-costs/4-purchase-azure-services

Domain

Describe Azure management and governance

Question 29 Skipped

True or False:

A Platform as a Service (PaaS) solution that has already been deployed cannot be scaled up or out without re-deploying it.

Correct answer

◯ **False**

Explanation

This statement is correct because in a Platform as a Service (PaaS) solution, scaling up or out can usually be achieved without the requirement for re-deployment. PaaS platforms often offer features that allow users to easily scale their applications by adding more resources or increasing the capacity of existing resources without the need to redeploy the entire solution.

◯ **True**

Explanation

This statement is incorrect because in a Platform as a Service (PaaS) solution, scaling up or out can typically be done without the need for re-deployment. PaaS offerings usually provide the capability to dynamically adjust resources, such as increasing the number of instances or upgrading the resources of existing instances, without the need to redeploy the entire solution.

Overall explanation

You can always scale your PaaS solution up (increase the memory) or out (add more instances) without re-deployment.

The very beauty of PaaS is that it allows you to avoid the expense and complexity of buying and managing software licences, the underlying application infrastructure and middleware, container orchestrators such as Kubernetes or the development tools and other resources. You manage the applications and services that you develop, and the cloud service provider typically manages everything else.

Reference: https://azure.microsoft.com/en-gb/overview/what-is-paas/

Domain

Describe Azure architecture and services

Question 30 Skipped

Select the option that is FALSE regarding Resource Groups.

○ **The resources in a resource group can be located in different regions than the resource group.**

Explanation

This statement is TRUE. Resources within a resource group can be located in different regions than the resource group itself. Azure allows for resources to be distributed across regions for redundancy and performance optimization.

Correct answer

◯ **Resource groups can be nested**

Explanation

This is FALSE. Resource groups cannot be nested within each other in Azure. Each resource group exists independently and cannot contain other resource groups.

- ◯ **You can deploy up to 800 instances of a resource type in each resource group.**

Explanation

This statement is TRUE. Azure allows you to deploy up to 800 instances of a resource type in each resource group, providing scalability and resource management capabilities.

- ◯ **You can add or remove a resource to a resource group at any time.**

Explanation

This statement is TRUE. In Azure, you have the flexibility to add or remove resources to a resource group at any time, making it easy to manage and organize resources based on your requirements.

- ◯ **Resources may be moved from one resource group to another**

Explanation

This statement is TRUE. Resources in Azure can be moved from one resource group to another, providing the ability to reorganize and manage resources more effectively.

- ◯ **A resource can only belong to one resource group**

Explanation

This statement is TRUE. A resource in Azure can belong to multiple resource groups, allowing for more flexibility in organizing and managing resources.

Overall explanation

Resource groups can't be **nested**, i.e, a resource group `cannot` exist inside another resource group. It is however possible is to link resources from other resource groups within a resource group.

From the official documentation (amazing summary, please do read) -

Resource groups

There are some important factors to consider when defining your resource group:

- All the resources in your group should share the same lifecycle. You deploy, update, and delete them together. If one resource, such as a server, needs to exist on a different deployment cycle it should be in another resource group.
- Each resource can only exist in one resource group.
- Some resources can exist outside of a resource group. These resources are deployed to the subscription, management group, or tenant. Only specific resource types are supported at these scopes.
- You can add or remove a resource to a resource group at any time.
- You can move a resource from one resource group to another group. For more information, see Move resources to new resource group or subscription.
- A resource group can contain resources that are located in different regions.
- A resource group can be used to scope access control for administrative actions.
- A resource can interact with resources in other resource groups. This interaction is common when the two resources are related but don't share the same lifecycle (for example, web apps connecting to a database).

Reference: https://docs.microsoft.com/en-us/azure/azure-resource-manager/management/manage-resource-groups-portal

Domain

Describe Azure architecture and services

Question 31 Skipped

A DevOps team uses Azure Cloud Shell to run az vm create commands and PowerShell scripts from a browser, expecting to manage VMs without installing local tools. Does this accurately reflect Azure Cloud Shell's capabilities?

- ○ **No**

Correct answer

◯ **Yes**

Explanation

Yes, Azure Cloud Shell allows users to manage Azure resources directly from a browser without the need to install any local tools. Users can run Azure CLI commands, PowerShell scripts, and other tools directly within the Cloud Shell environment, making it a convenient option for managing resources on Azure without the need for local installations.

Overall explanation

Azure **Cloud Shell** is a browser-based **shell environment** that allows users to run **Azure CLI (az commands)** and **PowerShell scripts** directly from the Azure portal. It eliminates the need for local installations of Azure tools, making it easier to manage and automate Azure resources, including **VM creation** and other tasks.

`az vm create` commands and **PowerShell scripts** can indeed be executed from **Azure Cloud Shell**, and the environment comes pre-configured with Azure CLI and PowerShell, so the DevOps team doesn't need to install these tools locally.

Domain

Describe Azure management and governance

Question 32 Skipped

A media company relies on a cloud solution to ensure their streaming service remains accessible globally during major events and can handle sudden viewer spikes without manual intervention. These capabilities reflect the cloud benefits of high _____ and _____ in action.

◯ **reliability, fault tolerance**

Explanation

While reliability and fault tolerance are important aspects of cloud solutions, they do not directly address the specific requirements mentioned in the question. The focus is on ensuring the streaming service remains accessible globally during major events and can handle sudden viewer spikes, which align more closely with availability and scalability.

○ **scalability, agility**

Explanation

While scalability and agility are important cloud benefits, they do not fully capture the specific requirements mentioned in the question. The emphasis is on ensuring the streaming service remains accessible globally during major events and can handle sudden viewer spikes without manual intervention, which align more closely with availability and scalability.

○ **agility, availability**

Explanation

While agility and availability are important cloud benefits, they do not fully capture the specific requirements mentioned in the question. The focus is on ensuring the streaming service remains accessible globally during major events and can handle sudden viewer spikes without manual intervention, which align more closely with availability and scalability.

Correct answer

◯ **availability, scalability**

Explanation

The high availability of the cloud solution ensures that the streaming service remains accessible globally during major events, minimizing downtime and ensuring continuous service delivery. Additionally, the scalability of the cloud solution allows the service to handle sudden viewer spikes by automatically adjusting resources to meet demand, without the need for manual intervention.

Overall explanation

The capabilities described in the scenario reflect the cloud benefits of **high availability** and **scalability** in action.

- **High availability** ensures that the service remains **accessible globally** during major events, minimizing downtime and ensuring continuous access for users.'
- **Scalability** allows the streaming service to **handle sudden viewer spikes** without manual intervention, automatically adjusting resources based on demand.

Domain

Describe Cloud Concepts

Question 33 Skipped

Yes or No:

When you cancel an Azure Subscription, your resources are immediately deleted permanently to free up space.

Correct answer

◯ **No**

Explanation

This statement is correct. When you cancel an Azure Subscription, your resources are not immediately deleted permanently. They are marked for deletion and will be held for a certain period of time before being permanently removed to allow for potential reactivation of the subscription or recovery of the resources.

◯ **Yes**

Explanation

This statement is incorrect. When you cancel an Azure Subscription, your resources are not immediately deleted permanently. They are marked for deletion and will be held for a certain

period of time before being permanently removed to allow for potential reactivation of the subscription or recovery of the resources.

Overall explanation

From the official Azure Docs:

When you cancel an Azure subscription:

- A resource lock doesn't block the subscription cancellation.
- Azure preserves your resources by deactivating them instead of immediately deleting them.
- Azure only deletes your resources permanently after a waiting period.

Reference: https://docs.microsoft.com/en-us/azure/azure-resource-manager/management/lock-resources

Domain

Describe Azure management and governance

Question 34 Skipped

Which of the following requires the greatest security effort on your part?

○ **Platform as a service (Paas)**

Explanation

Platform as a service (PaaS) requires less security effort compared to IaaS because the cloud provider manages the underlying infrastructure, such as servers and networking. However, you are still responsible for securing the applications and data you deploy on the platform, including access controls, data encryption, and application security.

○ **Software as a service (Saas)**

Explanation

Software as a service (SaaS) requires the least security effort on your part because the cloud provider is responsible for securing the entire application, including infrastructure, data, and access controls. Your main focus is on user access management and data privacy within the application.

○ **Database as a service (Daas)**

Explanation

Database as a service (DaaS) falls between PaaS and SaaS in terms of security effort required. While the cloud provider manages the database infrastructure and security patches, you are responsible for securing the data stored in the database, including access controls, encryption, and data privacy compliance.

Correct answer

○ **Infrastructure as a service (Iaas)**

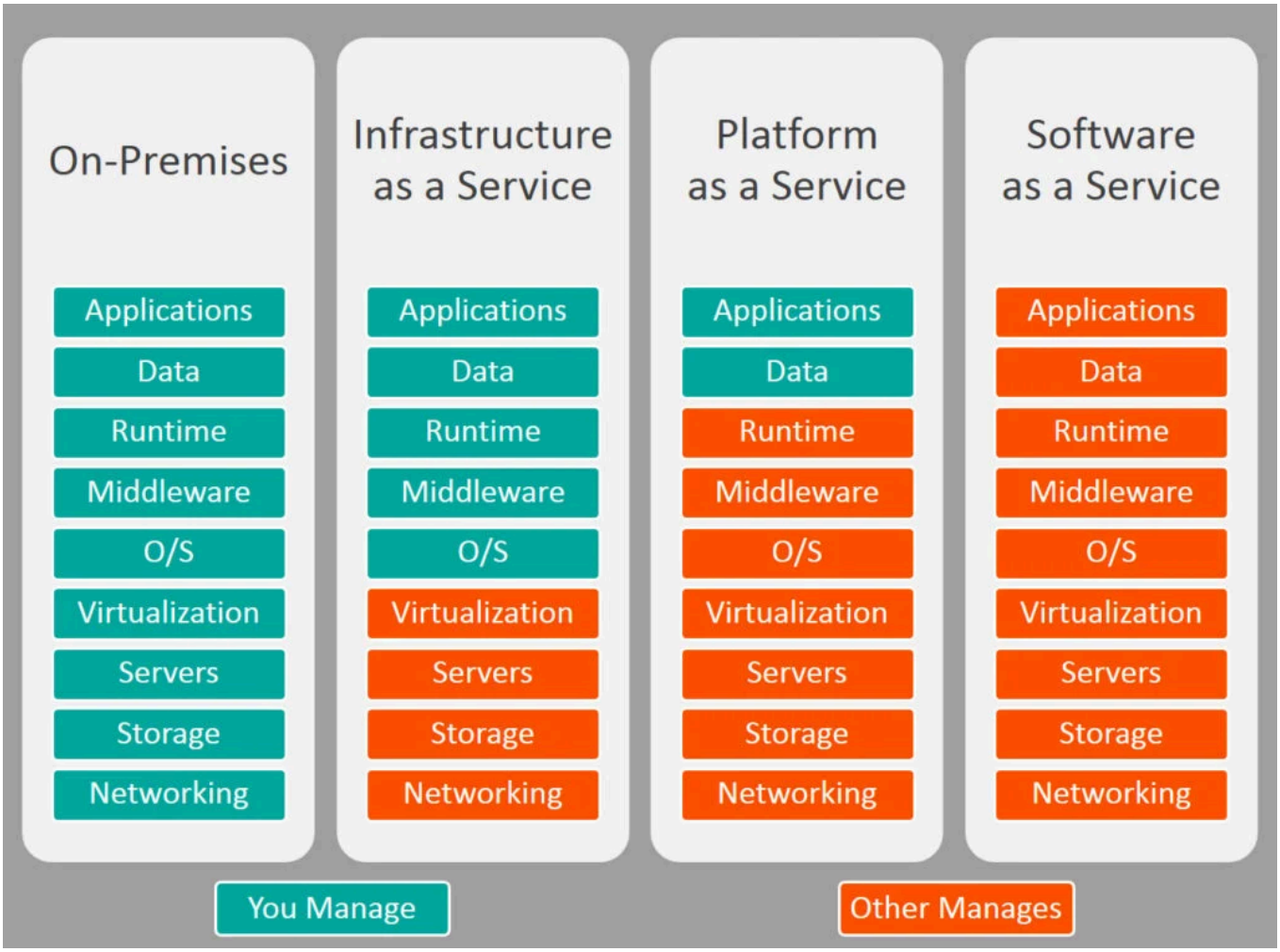
Explanation

Infrastructure as a service (IaaS) requires the greatest security effort on your part because you are responsible for securing the entire infrastructure, including virtual machines, networks, and storage. This means you need to manage security patches, firewall configurations, access controls, and data encryption at a granular level.

Overall explanation

IaaS (Infrastructure as a Service) is, in effect, where a cloud provider hosts the infrastructure components traditionally present in an on-premises data center including servers (operating systems), storage and networking hardware as well as the virtualization or hypervisor layer.

From a security perspective, this offering is probably the **closest** to traditional in-house IT infrastructure, (Indeed, many companies will effectively move existing server payloads to IaaS either partially or completely resulting in a hybrid solution.) and it will require much of the same security tools as a result.



Reference : https://www.tripwire.com/state-of-security/security-data-protection/cloud/secure-configuration-cloud-iaas-paas-saas/

Domain

Describe Cloud Concepts

Question 35 Skipped

A startup deploys a web app on Azure, using virtual machines and storage accounts across two regions. They aim to track spending and optimize costs by setting budgets and identifying resource usage trends. Which Azure cost management capabilities support these goals? (Select all that apply.)

Correct selection

- [ ] **Azure Cost Analysis**

Explanation

Azure Cost Analysis provides the startup with the ability to visualize their resource usage patterns, identify trends, and understand where their costs are coming from. This helps them make informed decisions about optimizing their resources and reducing unnecessary expenses.

☐ **Azure Blueprint**

Explanation

Azure Blueprint is a service that helps automate the deployment of Azure resources and ensure compliance with organizational standards. While it is a useful tool for managing resource deployments, it does not directly address the startup's need to track spending and optimize costs.

☐ **Azure Advisor**

Explanation

While Azure Advisor provides recommendations related to performance optimization, security, high availability, and cost optimization, it does not specifically focus on tracking spending or setting budgets. It provides advice for improving the overall resource efficiency, but it is not directly used for tracking or managing spending.

Correct selection

☐ **Azure Budgets**

Explanation

Azure Budgets allow the startup to set spending limits and receive alerts when the budget thresholds are reached. This helps them track spending and ensure they stay within their financial targets, ultimately optimizing costs.

Overall explanation

To help the startup track spending, optimize costs, and identify resource usage trends, the relevant **Azure cost management capabilities** would be:

Azure Budgets

- **Correct**. **Azure Budgets** allows users to set specific spending limits and track costs. It provides the ability to create budget alerts, helping the startup stay within their desired spending limits and receive notifications when they are approaching or exceeding their budget thresholds.

Azure Cost Analysis

- **Correct**. **Azure Cost Analysis** enables users to visualize **resource usage trends** and **spending patterns** over time. This tool helps identify where the most costs are being incurred, making it easier to spot inefficiencies and optimize costs.

Azure Advisor

- **Incorrect**. While **Azure Advisor** provides recommendations related to **performance optimization**, **security**, **high availability**, and **cost optimization**, it does not specifically focus on **tracking spending** or **setting budgets**. It provides advice for improving the overall resource efficiency, but it is not directly used for tracking or managing spending.

Azure Blueprint

- **Incorrect.** Azure Blueprint is a service that helps automate the deployment of Azure resources and ensure compliance with organizational standards. While it is a useful tool for managing resource deployments, it does not directly address the startup's need to track spending and optimize costs.

Domain

Describe Azure management and governance

Question 36 Skipped

A gaming company develops a multiplayer platform and needs a cloud solution that provides a managed development environment, including databases and middleware, while allowing their team to focus solely on coding game logic without worrying about server OS patches or hardware provisioning. Which cloud service types could they consider, and what benefits would they gain? (Select all that apply.)

Correct selection

☐ **PaaS, for a managed platform reducing administrative overhead**

Explanation

PaaS (Platform as a Service) would be a suitable option for the gaming company as it provides a managed platform that reduces administrative overhead. With PaaS, the company can focus on coding game logic while the cloud provider manages databases, middleware, and other infrastructure components, allowing for a more streamlined development process.

Correct selection

☐ **Agility, enabling faster development cycles**

Explanation

Agility is a key benefit that the gaming company would gain by using a cloud service type that enables faster development cycles. By leveraging a cloud solution that provides managed development environments, databases, and middleware, the company can accelerate their development process and focus on coding game logic, leading to quicker iterations and improvements in their multiplayer platform.

☐ **SaaS, for a pre-built application requiring no coding**

Explanation

SaaS (Software as a Service) is not the ideal choice for the gaming company as it provides pre-built applications that require no coding. Since the company is developing a multiplayer platform and needs to code game logic, a SaaS solution would not meet their requirements.

☐ **IaaS, for full control over virtual machines**

Explanation

IaaS (Infrastructure as a Service) would not be the best option for the gaming company in this scenario as it requires full control over virtual machines, including managing server OS patches and hardware provisioning. This would not align with their goal of focusing solely on coding game logic without worrying about server maintenance tasks.

Overall explanation

In this scenario, the gaming company is looking for a cloud solution that provides a **managed development environment**, including databases and middleware, while allowing the team to focus only on coding the game logic. The key goal is to **minimize administrative overhead**, such as managing the server OS or hardware provisioning, so the development team can concentrate on building and optimizing the game.

Let's analyze the options:

A) IaaS, for full control over virtual machines

- **IaaS (Infrastructure as a Service)** provides virtual machines, storage, and networking, allowing the user to have full control over the infrastructure. However, this option still requires the company to manage the **operating systems**, middleware, and updates, which goes against their goal of reducing administrative overhead. IaaS gives more flexibility but demands more responsibility from the development team, particularly with patching, security, and maintenance of the server environment.

  Not ideal for this scenario, as it doesn't align with the goal of minimizing administrative tasks.

B) PaaS, for a managed platform reducing administrative overhead

- **PaaS (Platform as a Service)** provides a fully managed environment that includes **middleware, databases, and development tools** needed for creating and running applications. PaaS allows the gaming company to focus on coding and deploying their game logic without worrying about hardware provisioning, server maintenance, OS patching, or managing the underlying infrastructure. This is the best fit for the company's needs, as it offers a managed platform that reduces the administrative burden. **Correct**. PaaS provides the managed environment the gaming company requires.

C) SaaS, for a pre-built application requiring no coding

- **SaaS (Software as a Service)** delivers fully developed software applications that are ready for use, such as email platforms or CRM systems. SaaS does not provide a development environment or allow for the creation of custom applications. Since the gaming company needs a platform to develop their game and write custom logic, **SaaS** is not applicable here. **Not applicable** to this scenario, as it doesn't provide a development environment.

D) Agility, enabling faster development cycles

- **Agility** refers to the ability to quickly adapt to changes and deliver features at a fast pace, which is often a benefit of using cloud services like PaaS. While **agility** is not a specific cloud service, it is a key benefit of using PaaS or other cloud models that reduce administrative overhead and provide a faster path from development to deployment. **Correct**. PaaS would indeed help the gaming company achieve agility by allowing them to focus on game logic while the cloud provider handles infrastructure and platform management.

Domain

Describe Cloud Concepts

Question 37 Skipped

A bank secures its Azure resources, requiring employees to sign in with corporate credentials and a phone verification only from trusted office locations, while granting developers VM management rights within a subscription. Which Azure features enforce these controls? (Select all that apply.)

Correct selection

☐ **Microsoft Entra ID**

Explanation

Microsoft Azure AD (Active Directory) is a cloud-based identity and access management service that provides authentication and authorization for the bank's Azure resources. It allows

the bank to manage user identities and control access to resources based on predefined policies.

☐ **Microsoft Entra B2C, for external customer access**

Explanation

Microsoft Azure AD B2C (Business to Customer) is designed for external customer access, not for internal employee access within the bank. It is used for managing customer identities and providing secure access to applications and services for external users.

Correct selection

☐ **Azure RBAC**

Explanation

Azure RBAC (Role-Based Access Control) enables the bank to grant developers VM management rights within a subscription. RBAC allows the bank to assign specific roles to users, granting them only the necessary permissions to perform their tasks without compromising security.

Correct selection

☐ **Microsoft Entra Conditional Access**

Explanation

Microsoft Azure Conditional Access allows the bank to enforce policies that require employees to sign in with corporate credentials and complete phone verification only from trusted office locations. This feature provides additional security by controlling access based on specific conditions set by the organization.

Overall explanation

The correct Azure features that enforce the described controls are:

- **Microsoft Entra Conditional Access**, for **location-based MFA** enforcement.
- **Azure RBAC**, for **role-based VM management**.
- **Microsoft Entra ID**, for **basic user authentication**.

- **Microsoft Entra ID** (formerly Azure AD) handles **identity management** and provides the foundation for **user authentication**. This ensures that employees sign in with their **corporate credentials**.

- **Microsoft Entra Conditional Access** allows for more granular control, such as requiring **MFA based on location** (in this case, trusted office locations).

- **Azure RBAC** ensures that the right users (in this case, developers) have **appropriate permissions** for managing specific resources like virtual machines within the subscription.

Domain

Describe Azure architecture and services

Question 38 Skipped

What are the two options for replicating data within the primary region in Azure Storage?

Correct answer

◯ **Locally redundant storage and zone-redundant storage.**

Explanation

Locally redundant storage replicates your data multiple times within the same data center to protect against local hardware failures. Zone-redundant storage replicates your data across multiple availability zones within the same region to ensure high availability and durability.

◯ **Geo-zone-redundant storage and locally redundant storage.**

Explanation

Geo-zone-redundant storage replicates your data across multiple availability zones within the same region to ensure high availability and durability. Locally redundant storage replicates your data multiple times within the same data center to protect against local hardware failures.

○ **Geo-redundant storage and zone-redundant storage.**

Explanation

Geo-redundant storage replicates your data to a secondary region for data durability, while zone-redundant storage replicates your data across multiple availability zones within the same region to protect against zone-level failures.

○ **Geo-redundant storage and geo-zone-redundant storage.**

Explanation

Geo-redundant storage is a replication option that copies your data to a secondary region hundreds of miles away from the primary region for data durability. Geo-zone-redundant storage replicates your data across multiple availability zones within the same region to protect against zone-level failures.

Overall explanation

Data in an Azure Storage account is always replicated **three** times in the primary region. Azure Storage offers two options for how your data is replicated in the primary region, locally redundant storage (LRS) and zone-redundant storage (ZRS).

Also, Azure Storage offers locally redundant storage (LRS) and zone-redundant storage (ZRS) as options for replicating data within the primary region.

Reference: https://learn.microsoft.com/en-us/training/modules/describe-azure-storage-services/3-redundancy

Domain

Describe Azure architecture and services

Question 39 Skipped

Which of these is NOT a valid Azure resource group constraint?

- ○ **A Resource group can contain resources located in different regions**

Explanation

This statement is valid. A resource group in Azure can indeed contain resources located in different regions. This feature enables users to organize and manage resources across multiple regions within a single resource group.

- ○ **A Resource group can contain resources that belong to different subscriptions**

Explanation

This statement is accurate. A resource group in Azure can contain resources that belong to different subscriptions. This capability allows for centralized management of resources across multiple subscriptions within the same resource group.

- ○ **A Resource group can be used to apply consistent policies to resources using another service.**

Correct answer

- ○ **A Resource group must be in the same region as its resources**

Explanation

A resource group in Azure does not have to be in the same region as its resources. It can contain resources located in different regions, allowing for flexibility in resource management.

Overall explanation

The option **"Resource group must be in the same region as its resources"** is NOT a valid constraint for Resource Groups.

While it's recommended that resources in a resource group be located in the same region for optimal performance, it's not a strict requirement. Resources in a resource group can span different regions, and this can be useful for achieving high availability and disaster recovery scenarios, as well as for optimizing data access for users in different geographic locations.

Other options:

- **Resource group can contain resources located in different regions:** This is a valid Azure resource group constraint. As mentioned above, resources in a resource group can span different regions.

- **Resource group can contain resources that belong to different subscriptions:** This is also a valid Azure resource group constraint. A single resource group can contain resources that belong to different subscriptions, which is useful for managing resources across multiple subscriptions.

- **Resource group can be used to apply consistent policies to resources:** This is also a valid Azure resource group constraint. Azure Policy can be used to apply governance policies to all resources in a resource group, ensuring consistent compliance across resources.

Reference: https://learn.microsoft.com/en-us/azure/azure-resource-manager/management/overview

Domain

Describe Azure management and governance

Question 40 Skipped

A gaming company uses Azure Cost Management to set a $5,000 monthly spending cap and receive alerts when nearing it, expecting this to automatically halt resource usage. Does this reflect an accurate use of Azure cost management capabilities?

Correct answer

◯ **No**

◯ **Yes**

Overall explanation

The correct answer is: **No**

Azure **Cost Management** allows you to set **spending alerts** and **budgets**, but **it does not automatically halt resource usage** when the budget limit is reached. While the gaming company can receive alerts when they are nearing their **$5,000 monthly spending cap**, **Azure Cost Management** does not have the functionality to **automatically stop or pause resources** once the budget limit is hit.

To actually **halt resource usage** or take more automated actions (such as shutting down resources when the budget is exceeded), you would need to use additional tools or configure **Azure Automation** or **Azure Policy** to enforce these actions.

Key points:

- **Azure Budgets** can send notifications or alerts when your spending is approaching or exceeding your set limit, but it will not **stop resources**.
- **Azure Automation** or other mechanisms are required if you want to **automatically scale down or stop resources** based on a budget threshold.

Domain

Describe Azure management and governance

Question 41 Skipped

Please fill the blank field(s) in the statement with the right words.

A startup launches a web application and opts for a cloud model that eliminates the need for upfront hardware purchases, instead charging based on actual resource consumption. This aligns with the cloud computing benefit known as __ expenditure avoidance.

Correct answer

capital

Explanation

This aligns with the cloud computing benefit known as **capital expenditure avoidance**. By using a cloud model, the startup avoids large upfront investments in hardware and infrastructure, instead paying for resources based on actual usage, which is a key advantage of cloud computing.

Resources

Capex vs. Opex

Domain

Describe Cloud Concepts

Question 42 Skipped

Which of the following services can be used to store unstructured/semi-structured data in Azure?

Correct selection

☐ **Azure File Storage**

Explanation

Azure File Storage is a fully managed file share service in Azure that can be used to store unstructured data that needs to be accessed by multiple virtual machines or applications. It provides a file system interface for easy access and sharing of files.

Correct selection

☐ **Azure Table Storage**

Explanation

Azure Table Storage is a NoSQL data store that can be used to store semi-structured data. It is suitable for storing large amounts of structured data that may not require complex relationships or queries.

☐ **Azure Queue Storage**

Explanation

Azure Queue Storage is a service in Azure that is used to store messages that can be accessed asynchronously by applications. It is not typically used for storing unstructured data, but rather for queuing messages for communication between different components of an application.

Correct selection

☐ **Azure Blob Storage**

Explanation

Azure Blob Storage is a service in Azure that allows you to store large amounts of unstructured data, such as text or binary data. It is ideal for storing images, videos, documents, and other types of files that do not fit into traditional databases.

Overall explanation

The Azure services that can be used to store unstructured data are: **Azure Blob Storage, Azure Table Storage and Azure File Storage.**

Azure Table Storage can also be used to store unstructured data in Azure. Azure Table Storage is a NoSQL key-value store that can be used to store structured and semi-structured data, as well as unstructured data such as large text and binary data. Azure Table Storage allows you to store large amounts of data in a flexible schema that can evolve over time, making it a good choice for storing unstructured data that does not fit well into a fixed schema.

Azure File Storage can also be used to store unstructured data in Azure. Azure File Storage is a fully managed file share service that can be used to store and share unstructured data, such as documents, media files, and logs. Azure File Storage provides the standard SMB (Server Message Block) file share protocol, which allows you to easily mount file shares from multiple VMs in the same region or across regions. This makes it a good choice for scenarios where you need to share unstructured data between multiple VMs or applications.

Azure Blob Storage is a massively scalable object storage service that allows you to store and access large amounts of unstructured data, such as text and binary data, images, and videos. It's commonly used for data storage, backup and recovery, and data archiving.

Incorrect -

Azure Queue Storage, on the other hand, is not suitable for storing unstructured data. It is designed for reliably queuing and processing messages between different components of a distributed application, rather than for storing large amounts of unstructured data.

Reference: https://learn.microsoft.com/en-us/azure/storage/common/storage-introduction

Domain

Describe Azure architecture and services

Question 43 Skipped

A healthcare provider uses Microsoft Defender for Cloud to monitor VMs, expecting free assessments and paid threat detection if a datacenter outage occurs. Is this an accurate depiction of Defender for Cloud's capabilities?

- ○ **Yes**

Correct answer

◯ **No**

Overall explanation

Microsoft Defender for Cloud provides several capabilities, but the description given is not entirely accurate:

1. **Free Assessments:**
   - **Microsoft Defender for Cloud** does offer **free security assessments** for your Azure resources, including virtual machines (VMs). These assessments are part of the **Cloud Security Posture Management (CSPM)**, where it evaluates the security state of your resources and provides recommendations.
2. **Paid Threat Detection:**
   - The **paid capabilities** of **Microsoft Defender for Cloud** are related to **Advanced Threat Protection** (ATP), which includes threat detection for specific resources such as VMs, storage accounts, databases, and more. However, the **paid features** are not tied specifically to datacenter outages but are meant to detect and protect against **threats** like malware, unauthorized access, and other security risks.
3. **Datacenter Outages:**
   - **Microsoft Defender for Cloud** is not specifically designed for **datacenter outage detection**. It focuses more on **threat detection**, **security posture management**, and providing **security alerts**. While it can monitor for certain anomalies that may be related to availability or performance (such as through integrations with services like Azure Monitor), datacenter outages are typically covered under **Azure's availability and uptime SLAs**, not specifically through Defender for Cloud.

Therefore, the healthcare provider's expectation that Defender for Cloud will only trigger paid threat detection if a datacenter outage occurs is **incorrect**.

Domain

Describe Azure management and governance

Question 44 Skipped

A media company hosts a streaming service on Azure, expecting uninterrupted playback during a live event. They deploy resources across three physically separate data centers in the East US region to mitigate a single facility's failure. Which Azure feature ensures this resilience?

- ○ **Azure Datacenters, providing global load balancing**

Explanation

Azure Datacenters provide global load balancing and distribute traffic across multiple data centers worldwide. While this feature helps with load distribution and performance optimization, it does not directly ensure resilience in the scenario described where resources are deployed across physically separate data centers in the East US region.

- ○ **Region Pairs, syncing data between East US and West US**

Explanation

Region Pairs are used for geo-redundancy and disaster recovery by syncing data between paired regions. However, in this scenario, the company has deployed resources across physically separate data centers within the same region (East US) to ensure resilience, so Region Pairs syncing data between East US and West US is not the correct choice.

Correct answer

- ○ **Availability Zones, isolating resources within East US**

Explanation

Availability Zones provide physically separate and independent data centers within an Azure region, offering high availability and resilience to ensure uninterrupted playback during a live event. By deploying resources across three physically separate data centers in the East US region, the media company can mitigate a single facility's failure and ensure continuous service.

- ○ **Virtual Machine Scale Sets, auto-scaling compute capacity**

Explanation

Virtual Machine Scale Sets are used for auto-scaling compute capacity based on demand. While this feature helps with managing and scaling virtual machines, it does not directly address the resilience requirements of ensuring uninterrupted playback during a live event by mitigating failures in a single facility.

Overall explanation

In this scenario, the media company is aiming for **resilience** by deploying resources across three physically separate data centers within the **East US** region to mitigate the failure of a single facility. The **Azure feature** that ensures this resilience is: **Availability Zones, isolating resources within East US**

Explanation:

- **Availability Zones** are designed to provide **fault tolerance** within a specific **Azure region**. Each **Availability Zone** is a physically separate data center with independent power, cooling, and networking, designed to ensure that if one zone fails, the other zones in the region can continue to operate.
- By deploying resources across **three Availability Zones** within the **East US region**, the media company ensures that if one zone experiences a failure, the others will continue to function, maintaining **uninterrupted playback** for their streaming service.

Why the other options are less appropriate:

Region Pairs, syncing data between East US and West US:

- **Region Pairs** are used for **disaster recovery** and **data redundancy** across **geographically separate regions**. They are not meant for resilience within a single region, which is what the media company is aiming for in this scenario. The company is deploying across multiple data centers within **East US**, not across two regions.

Azure Datacenters, providing global load balancing:

- **Azure Datacenters** are the physical locations where resources are hosted, but they are not the specific feature that ensures fault tolerance. **Global load balancing** is a separate service that helps distribute traffic across different

regions, but it does not provide the physical **isolation** needed for resilience in the **East US** region.

Virtual Machine Scale Sets, auto-scaling compute capacity:

- While **Virtual Machine Scale Sets** (VMSS) help with **auto-scaling** and handling varying levels of demand, they do not directly provide the **physical isolation** needed for resilience against the failure of a single data center. VMSS can scale compute resources but does not ensure **fault tolerance** at the physical data center level.

Domain

Describe Azure architecture and services

Question 45 Skipped

Your compliance team has contacted you and stated that a certain VM running a mission critical database (with confidential data) should not be able to connect to other applications and VMs. How would you accomplish this?

○ **Deploy the VM to a brand new resource group**

Explanation

This choice is incorrect because deploying the VM to a new resource group does not inherently restrict its communication with other applications and VMs. Resource groups are logical containers for Azure resources and do not have a direct impact on network communication. The key to achieving the required isolation is through network configuration using subnets and NSGs.

Correct answer

○ **Deploy the VM to a certain subnet and restrict traffic using a Network Security Group (NSG).**

Explanation

This choice is correct because by deploying the VM to a specific subnet and applying a Network Security Group (NSG) to that subnet, you can control the inbound and outbound traffic to and from the VM. By configuring the NSG rules, you can restrict the VM's communication with other applications and VMs, ensuring the confidentiality of the data.

◯ **No need to do anything as a VM cannot communicate with other services.**

Explanation

This choice is incorrect because a VM in Azure can communicate with other services and VMs unless specific measures are taken to restrict its network access. By default, VMs can communicate with other resources within the same virtual network or across virtual networks if peering or VPN connections are established.

◯ **Use an Azure Load Balancer**

Explanation

This choice is incorrect because an Azure Load Balancer is used to distribute incoming network traffic across multiple VM instances. It is not designed to restrict the communication of a specific VM with other applications and VMs. Using a load balancer in this scenario would not address the compliance requirement of isolating the VM.

Overall explanation

Azure Virtual Network (VNet) is the fundamental building block for your private network in Azure. VNet enables many types of Azure resources, such as Azure Virtual Machines (VM), to securely communicate with each other, the internet, and on-premises networks. VNet is similar to a traditional network that you'd operate in your own data center, but brings with it additional benefits of Azure's infrastructure such as scale, availability, and isolation.

Subnets: Subnets enable you to segment the virtual network into one or more sub-networks and allocate a portion of the virtual network's address space to each subnet. You can then deploy Azure resources in a specific subnet. Just like in a traditional network, subnets allow you to segment your VNet address space into segments that are appropriate for the organization's internal network. This also improves address allocation efficiency. You can secure resources within subnets using Network Security Groups. For more information, see Security groups.

You can filter network traffic between subnets using either or both of the following options:

1) Security groups: Network security groups and application security groups can contain multiple inbound and outbound security rules that enable you to filter traffic to and from resources by source and destination IP address, port, and protocol. To learn more, see Network security groups or Application security groups.

2) Network virtual appliances: A network virtual appliance is a VM that performs a network function, such as a firewall, WAN optimization, or other network function. To view a list of available network virtual appliances that you can deploy in a virtual network, see Azure Marketplace.

Reference: https://docs.microsoft.com/en-us/azure/virtual-network/virtual-networks-overview

Domain

Describe Azure architecture and services

Question 46 Skipped

Yes or No:

A resource can connect to resources in other resource groups.

Correct answer

◯ **Yes**

Explanation

Yes, a resource can connect to resources in other resource groups in Azure. This can be achieved by configuring appropriate network settings, such as virtual network peering or using Azure Virtual Network Gateways, to establish communication between resources in different resource groups.

◯ **No**

Overall explanation

From the official documentation :

A resource can connect to resources in other resource groups. This scenario is common when the two resources are related but don't share the same lifecycle. For example, you can have a web app that connects to a database in a different resource group.

More about resource groups:

Resource groups

There are some important factors to consider when defining your resource group:

- All the resources in your group should share the same lifecycle. You deploy, update, and delete them together. If one resource, such as a server, needs to exist on a different deployment cycle it should be in another resource group.
- Each resource can only exist in one resource group.
- Some resources can exist outside of a resource group. These resources are deployed to the subscription, management group, or tenant. Only specific resource types are supported at these scopes.
- You can add or remove a resource to a resource group at any time.
- You can move a resource from one resource group to another group. For more information, see Move resources to new resource group or subscription.
- A resource group can contain resources that are located in different regions.
- A resource group can be used to scope access control for administrative actions.
- A resource can interact with resources in other resource groups. This interaction is common when the two resources are related but don't share the same lifecycle (for example, web apps connecting to a database).

Reference : https://docs.microsoft.com/en-us/azure/azure-resource-manager/management/overview#resource-groups

Domain

Describe Azure architecture and services

Question 47 Skipped

A manufacturing firm extends Azure governance to on-premises servers and Kubernetes clusters in AWS, applying consistent policies and monitoring hybrid workloads. Which Azure features support this hybrid management? (Select all that apply.)

Correct selection

☐ **Azure Monitor**

Explanation

Azure Monitor provides a centralized platform for monitoring and managing the performance and health of applications and resources across hybrid environments, including on-premises servers and Kubernetes clusters in AWS. It enables the manufacturing firm to monitor their hybrid workloads effectively.

☐ **Microsoft Purview**

Explanation

Microsoft Purview is a data governance service that helps organizations discover and govern their data assets across on-premises, multi-cloud, and SaaS environments. While it is a valuable tool for data governance, it is not specifically designed for managing hybrid workloads across different cloud providers like Azure Arc, Azure Policy, and Azure Monitor.

Correct selection

☐ **Azure Arc**

Explanation

Azure Arc enables organizations to extend Azure services and management to any infrastructure, including on-premises servers and Kubernetes clusters in AWS. It allows for consistent governance, security, and monitoring of hybrid workloads across different environments.

Correct selection

☐ **Azure Policy**

Explanation

Azure Policy allows organizations to enforce policies and compliance standards across all Azure resources, including on-premises servers and Kubernetes clusters in AWS. By using Azure Policy, the manufacturing firm can ensure consistent policies are applied to their hybrid workloads.

Overall explanation

The correct Azure features that support hybrid management for the manufacturing firm are:

Azure Arc, for managing non-Azure resources

- **Correct**. **Azure Arc** extends Azure management to **on-premises servers**, **Kubernetes clusters**, and **other non-Azure resources** (like those running in AWS or other clouds). It enables the firm to apply Azure governance tools and practices to resources outside of Azure, ensuring a consistent approach to management across hybrid environments.

Azure Policy, for enforcing hybrid compliance

- **Correct**. **Azure Policy** allows you to define and enforce compliance policies across **Azure** and **non-Azure resources** (when using Azure Arc). This feature ensures that resources in hybrid environments, such as on-premises servers and AWS-hosted Kubernetes clusters, comply with the same governance rules as Azure resources.

Azure Monitor, for tracking performance across environments

- **Correct**. **Azure Monitor** provides **centralized monitoring** across all Azure resources, as well as **hybrid environments**. It can track the performance of both Azure-based resources and on-premises servers or Kubernetes clusters in AWS, offering a unified view of performance metrics and health status across the entire infrastructure.

Microsoft Purview, for data classification in Azure only

- **Incorrect**. **Microsoft Purview** is a data governance solution that focuses on **data classification, management, and compliance** within **Azure** environments. While it is great for **Azure-only resources**, it doesn't extend to **on-premises** or **non-Azure resources** unless those resources are connected to **Azure**. So, it doesn't provide the same hybrid management capabilities as the other options.

Domain

Describe Azure management and governance

Question 48 Skipped

Which Azure Service allows you to create, assign and manage policies to enforce different rules and stay compliant with your Service Level Agreements (SLAs)?

○ **Azure Trust Portal**

Explanation

Azure Trust Portal is not a valid Azure service. It does not exist in the Azure ecosystem and therefore cannot be used for creating, assigning, and managing policies to enforce rules and compliance with SLAs.

○ **Azure Security Center**

Explanation

Azure Security Center is a unified security management system that helps you to strengthen your security posture and protect against threats. While it includes policy management capabilities, it is not the primary service focused on creating, assigning, and managing policies for compliance like Azure Policy.

◯ **Azure Blueprints**

Explanation

Azure Blueprints are used for deploying a repeatable set of resources that follow a specific pattern or requirements. While Azure Blueprints can help in enforcing standards and compliance, they are not specifically designed for creating, assigning, and managing policies like Azure Policy.

Correct answer

◯ **Azure Policy**

Explanation

Azure Policy is the correct choice as it allows you to create, assign, and manage policies to enforce different rules and stay compliant with your Service Level Agreements (SLAs). It helps you to ensure that your resources in Azure comply with your organization's standards and requirements.

Overall explanation

Azure Policy helps to enforce organizational standards and to assess compliance at-scale. Through its compliance dashboard, it provides an aggregated view to evaluate the overall state of the environment, with the ability to drill-down to the per-resource, per-policy granularity. It also helps to bring your resources to compliance through bulk remediation for existing resources and automatic remediation for new resources.

Common use cases for Azure Policy include implementing **governance** for resource consistency, regulatory compliance, security, cost, and management. Policy definitions for these common use cases are already available in your Azure environment as built-ins to help you get started.

References : https://docs.microsoft.com/en-us/azure/governance/policy/overview

Domain

Describe Azure management and governance

Question 49 Skipped

Which of the following is NOT a cost saving solution?

Correct answer

◯ **Load balance your virtual machines to manage incoming traffic**

Explanation

Load balancing virtual machines to manage incoming traffic is not primarily a cost-saving solution. While load balancing helps distribute traffic efficiently and improve application performance, its main purpose is to enhance availability and reliability rather than directly reducing costs.

◯ **Choosing an appropriate instance type for a VM**

Explanation

Choosing an appropriate instance type for a VM is essential for optimizing performance and cost efficiency. By selecting the right instance type based on workload requirements, you can avoid over-provisioning resources and reduce unnecessary expenses.

◯ **Using a Pay as you go Subscription**

Explanation

Using a Pay as you go Subscription means paying for services based on actual usage, which can be cost-effective for fluctuating workloads. It allows flexibility in scaling resources up or down as needed, potentially saving costs compared to fixed subscriptions.

◯ **Use Azure Reserved Virtual Machine instances**

Explanation

Using Azure Reserved Virtual Machine instances involves committing to a one- or three-year term to receive a discount on the VM usage cost. This can lead to significant cost savings compared to pay-as-you-go pricing, especially for steady-state workloads.

Overall explanation

Load balancing is used for **PERFORMANCE OPTIMISATION** and not cost saving.

Load balancing refers to evenly distributing load (incoming network traffic) across a group of backend resources or servers.

Azure Load Balancer operates at layer 4 of the Open Systems Interconnection (OSI) model. It's the single point of contact for clients. Load balancer distributes inbound flows that arrive at the load balancer's front end to backend pool instances. These flows are according to configured load-balancing rules and health probes. The backend pool instances can be Azure Virtual Machines or instances in a virtual machine scale set.

A **public load balancer** can provide outbound connections for virtual machines (VMs) inside your virtual network. These connections are accomplished by translating their private IP addresses to public IP addresses. Public Load Balancers are used to load balance internet traffic to your VMs.

An **internal (or private) load balancer** is used where private IPs are needed at the frontend only. Internal load balancers are used to load balance traffic inside a virtual network. A load balancer frontend can be accessed from an on-premises network in a hybrid scenario.

Reference: https://docs.microsoft.com/en-us/azure/load-balancer/load-balancer-overview

Domain

Describe Azure architecture and services

Question 50 Skipped

Which of the following would you use if you want to keep track of the performance or issues related to your specific VM or container instances, databases, your applications?

- ○ **Azure Advisor**

Explanation

Azure Advisor is a service that provides personalized recommendations to help you optimize your Azure resources for high availability, security, performance, and cost. While it offers valuable insights and best practices for resource optimization, it is not designed for tracking the performance or issues of specific VMs, containers, databases, or applications.

Correct answer

◯ **Azure Monitor**

Explanation

Azure Monitor is the correct choice for keeping track of the performance and issues related to your specific VM or container instances, databases, and applications. It provides monitoring and insights into the health, performance, and availability of your resources in Azure, allowing you to proactively identify and address any issues.

◯ **Azure Service Health**

Explanation

Azure Service Health is focused on providing personalized guidance and support when Azure service issues affect you. It helps you stay informed about service health events that may impact your resources, but it does not provide detailed performance monitoring or issue tracking for specific VMs, containers, databases, or applications.

◯ **Azure Sentinel**

Explanation

Azure Sentinel is a cloud-native security information and event management (SIEM) service that provides intelligent security analytics and threat detection across your entire Azure environment. While it is essential for monitoring security-related events and threats, it is not the primary tool for tracking the performance or issues of specific VMs, containers, databases, or applications.

Overall explanation

From the Official Azure Documentation:

If you want to keep track of the performance or issues related to your specific VM or container instances, databases, your applications, and so on, you want to visit Azure Monitor and create reports and notifications to help you understand how your services are performing or diagnose issues related to your Azure usage.

Reference: https://docs.microsoft.com/en-ca/learn/modules/monitoring-fundamentals/3-analyze-decision-criteria

Domain

Describe Azure management and governance

Question 51 Skipped

A cloud admin receives real-time alerts about a regional Azure outage affecting their app's VMs, using a tool that tracks service issues and planned maintenance. Does this describe the purpose of Azure Service Health?

- ○ **No**

Correct answer

- ○ **Yes**

Explanation

Yes, this describes the purpose of Azure Service Health accurately. Azure Service Health provides personalized guidance and support when issues affect Azure services that your organization relies on. It offers real-time notifications and historical status information about service issues and planned maintenance events that may impact the availability of your resources.

Overall explanation

Yes, this describes the purpose of **Azure Service Health**.

Azure Service Health is a tool that provides **real-time alerts and notifications** about the health and status of Azure services and resources, including:

- **Service issues** (such as outages)
- **Planned maintenance**
- **Health advisories**

In the scenario described, the cloud admin receives real-time alerts about a **regional outage affecting their app's VMs**, which is exactly what **Azure Service Health** is designed to do. It helps administrators stay informed about ongoing issues in Azure regions or services that could impact their applications and infrastructure.

Domain

Describe Azure management and governance

Question 52 Skipped

Consider a scenario where a financial institution opts for a cloud deployment model that ensures all hardware is physically isolated from other tenants, hosted in a data center they own, yet still leverages cloud-like virtualization and self-service capabilities. Which model aligns with this intricate setup?

○ **Public cloud, offering shared but isolated resources**

Explanation

Public cloud typically offers shared resources, where multiple tenants share the same hardware infrastructure. While resources can be isolated using virtualization and security measures, the scenario described requires all hardware to be physically isolated, which is not a characteristic of a public cloud deployment model.

○ **Community cloud, designed for industry collaboration**

Explanation

Community cloud is designed for industry collaboration, where multiple organizations with similar interests share a common cloud infrastructure. While it offers shared resources among

a specific community, it does not guarantee the level of physical isolation described in the scenario where all hardware is physically separated from other tenants.

Correct answer

◯ **Private cloud, providing dedicated infrastructure**

Explanation

Private cloud deployment model provides dedicated infrastructure for a single organization, ensuring that all hardware is physically isolated from other tenants. This aligns with the scenario described where a financial institution wants to have complete control over their hardware while still benefiting from cloud-like virtualization and self-service capabilities.

◯ **Hybrid cloud, blending on-premises and public resources**

Explanation

Hybrid cloud involves a combination of on-premises and public cloud resources, allowing organizations to leverage both environments based on their needs. However, in the scenario described, the financial institution opts for a deployment model where all hardware is physically isolated in a data center they own, which is more aligned with a private cloud model.

Overall explanation

In this scenario, the financial institution is looking for a **cloud deployment model** where:

- **Hardware is physically isolated** from other tenants, meaning the infrastructure is dedicated to them.
- The hardware is **hosted in a data center they own**.
- The institution still **leverages cloud-like virtualization** and **self-service capabilities**, which are typical of cloud environments.

Let's analyze the options:

A) Public cloud, offering shared but isolated resources

- In a **public cloud** model, the resources (hardware and infrastructure) are shared among multiple tenants. While there may be **logical isolation** between different tenants (through techniques like virtualization), **physical isolation**is not a feature of the public cloud. In this case, the financial institution's need for **physical isolation** and **owning the data center** means this option is **not a good fit**. **Incorrect**.

B) Private cloud, providing dedicated infrastructure

- A **private cloud** is a cloud environment where the infrastructure is **dedicated to a single organization**. This model can be hosted either on-premises or in a third-party data center. Since the financial institution is hosting its cloud environment in a **data center they own** and requires **physical isolation**, the **private cloud** is the ideal choice. A private cloud can also offer **cloud-like features** such as virtualization, scalability, and self-service capabilities while maintaining the necessary **security and isolation**. **Correct**.

C) Hybrid cloud, blending on-premises and public resources

- A **hybrid cloud** combines **on-premises infrastructure** (private cloud) with **public cloud services**. While this model can provide flexibility and the ability to scale resources between the private and public cloud, the scenario specifically describes a **private infrastructure** (owned by the financial institution) without mention of integrating public cloud resources. Therefore, a hybrid cloud doesn't align with this setup. **Incorrect**.

D) Community cloud, designed for industry collaboration

- A **community cloud** is a shared infrastructure that is used by multiple organizations with similar concerns, such as security or compliance needs (e.g., healthcare or government entities). The financial institution described here needs an environment **dedicated to them**, not one shared with other organizations. This makes the **community cloud** less suitable. **Incorrect**.

Conclusion:

The **private cloud** deployment model best fits the scenario described. It offers **dedicated infrastructure** that can be hosted in the institution's own data center, while still providing **cloud-like capabilities** such as virtualization and self-service, ensuring both **physical isolation** and the flexibility of cloud features.

Domain

Describe Cloud Concepts

Question 53 Skipped

A research institute needs to run complex simulations requiring custom-configured virtual machines with specific operating systems and libraries, which their IT team must fully manage. They also want to avoid the delays of procuring physical servers. Which cloud service type best suits their need for control and flexibility in this context?

○ **Function as a Service, for event-driven processing**

Explanation

Function as a Service (FaaS) is designed for event-driven processing where code is executed in response to specific events. It does not provide the level of control and customization required by the research institute to manage custom-configured virtual machines with specific operating systems and libraries for running complex simulations.

○ **Platform as a Service, for a managed coding environment**

Explanation

Platform as a Service (PaaS) offers a managed coding environment where developers can build, deploy, and manage applications without worrying about the underlying infrastructure. While it provides some level of flexibility, it does not meet the requirement of fully managing custom-configured virtual machines with specific operating systems and libraries.

○ **Software as a Service, for ready-to-use tools**

Explanation

Software as a Service (SaaS) provides ready-to-use applications and tools without the need for managing underlying infrastructure. It does not offer the level of control and flexibility required by the research institute to fully manage custom-configured virtual machines with specific operating systems and libraries.

Correct answer

◯ **Infrastructure as a Service, for customizable compute resources**

Explanation

Infrastructure as a Service (IaaS) provides customizable compute resources, including virtual machines, storage, and networking, that can be fully managed by the IT team. This cloud service type offers the control and flexibility needed by the research institute to run complex simulations with custom-configured virtual machines.

Overall explanation

In this scenario, the research institute requires **custom-configured virtual machines (VMs)** with specific operating systems and libraries that their **IT team must fully manage**. They also want to **avoid delays in procuring physical servers**. This points to a cloud service model that offers **maximum control and flexibility** in configuring the underlying infrastructure.

Let's analyze each option:

A) Software as a Service (SaaS), for ready-to-use tools

- **SaaS** provides fully developed applications that are ready to use without requiring customization or management of the underlying infrastructure. While this option is useful for software like email or CRM systems, it does not allow for the level of control or customization the research institute requires, especially with respect to custom virtual machines and specific configurations.

  Incorrect. SaaS does not provide the level of control needed for custom virtual machine configurations.

B) Platform as a Service (PaaS), for a managed coding environment

- **PaaS** offers a managed platform for building and deploying applications, but it abstracts away much of the underlying infrastructure, including operating systems and servers. While PaaS can be great for developers needing to deploy applications quickly without managing the environment, it is not the right fit for a scenario where the research institute needs full control over the virtual machines, operating systems, and libraries.

Incorrect. PaaS is more abstracted and doesn't offer the level of control the institute needs for fully managing VMs.

C) Infrastructure as a Service (IaaS), for customizable compute resources

- **IaaS** provides the **most control over virtual machines** and infrastructure. With IaaS, the research institute can **customize the VMs** with specific operating systems and libraries, and their IT team can **fully manage** them, including installing and configuring software, performing maintenance, and handling OS patches. Additionally, they can avoid delays in procuring physical hardware, as IaaS allows for on-demand provisioning of resources.

  Correct. IaaS offers the flexibility and control needed for the research institute's custom VM requirements.

D) Function as a Service (FaaS), for event-driven processing

- **FaaS** is designed for event-driven, serverless computing, where you deploy small, stateless functions that execute in response to events (e.g., a trigger from a database or an API call). While FaaS is great for lightweight tasks and scalable event-driven applications, it does not provide the level of control or customization needed for running complex simulations with custom-configured virtual machines.

  Incorrect. FaaS is not suited for the institute's needs, as it focuses on small, event-driven units of work rather than managing complex virtual machines.

Domain

Describe Cloud Concepts

Question 54 Skipped

In the context of Azure subscriptions, what does an Azure free trial subscription provide? (Select all that apply)

Correct selection

☐ **Credit to spend within the first 30 days of sign-up**

Explanation

Azure free trial subscriptions offer users a credit to spend within the first 30 days of sign-up, enabling them to try out different Azure services and functionalities without immediate financial commitment.

☐ **Unlimited access to all Azure services**

Explanation

Unlimited access to all Azure services is not a feature of an Azure free trial subscription. While users have access to a variety of products and services, there are limitations and restrictions based on the trial terms and conditions.

Correct selection

☐ **Access to a number of Azure products free for 12 months**

Explanation

An Azure free trial subscription provides access to a number of Azure products free for 12 months, allowing users to explore and test various services without incurring costs during the trial period.

Correct selection

☐ **Access to more than 25 products that are always free**

Explanation

An Azure free trial subscription provides access to more than 25 products that are always free, giving users the opportunity to experiment with a range of services that do not incur charges beyond the trial period.

Overall explanation

Access to a number of Azure products free for 12 months - This is correct because an Azure free trial subscription provides access to several Azure products for free during the first 12

months.

Credit to spend within the first 30 days of sign-up - This is correct as the Azure free trial subscription offers credit to spend within the first 30 days after sign-up, which allows users to explore and use various Azure services during that period.

Unlimited access to all Azure services - This is incorrect because the Azure free trial subscription does not provide unlimited access to all Azure services. It offers a limited set of free services, usage allowances, and credits to spend within a specified timeframe.

Access to more than 25 products that are always free - This is correct because, in addition to the free services available during the trial period, the Azure free trial subscription provides access to more than 25 products that are always free, based on resource and region availability. These products can be used without any additional costs even after the trial period is over.

Reference: https://learn.microsoft.com/en-us/training/modules/describe-cost-management-azure/2-describe-factors-affect-costs-azure

Domain

Describe Azure management and governance

Question 55 Skipped

A startup has deployed a set of Virtual Machines which are critical for their day-to-day operations. They need to ensure their availability even if a single data center goes down.

One of their interns has suggested that deploying the VMs through a Scale Set would solve the problem. Do you agree?

○ Yes

Explanation

Scale Sets are designed to automatically scale the number of VM instances based on demand or a defined schedule. While they can help with ensuring availability and load balancing, they do not inherently provide fault tolerance across multiple data centers. Therefore, deploying

VMs through a Scale Set may not solve the problem of ensuring availability if a single data center goes down.

Correct answer

◯ **No**

Explanation

Deploying Virtual Machines through a Scale Set does not inherently provide the ability to ensure availability across multiple data centers. Scale Sets focus on scaling VM instances within a single data center or region, rather than across multiple data centers. Therefore, relying solely on a Scale Set for fault tolerance in the event of a data center failure may not be sufficient for the startup's needs.

Overall explanation

This answer does not specify that the scale set will be configured across multiple data centers so this solution does not meet the goal.

Azure virtual machine scale sets let you create and manage a group of load balanced VMs. The number of VM instances can automatically increase or decrease in response to demand or a defined schedule. Scale sets provide high availability to your applications, and allow you to centrally manage, configure, and update many VMs.

Virtual machines in a scale set can be deployed across multiple update domains and fault domains to maximize availability and resilience to outages due to data center outages, and planned or unplanned maintenance events.

Reference: https://docs.microsoft.com/en-us/azure/virtual-machine-scale-sets/availability

Domain

Describe Azure architecture and services

Question 56 Skipped

Availability for all Azure services is calculated over a _____ billing cycle.

Correct answer

- ◯ **monthly**

Explanation

Monthly billing cycles are commonly used to calculate the availability of Azure services. This duration allows for a more accurate and meaningful assessment of the service's uptime and reliability over a reasonable period, making it a suitable choice for availability calculations.

- ◯ **weekly**

Explanation

Weekly availability calculations would not provide a comprehensive overview of the service's uptime and reliability over a longer period. It is not practical to assess the availability of Azure services on a weekly basis due to the short duration of the cycle.

- ◯ **quarterly**

Explanation

Quarterly billing cycles are longer than monthly cycles but still not as frequent as needed to monitor the availability of Azure services effectively. Quarterly calculations may not provide timely insights into the service's performance and reliability.

- ◯ **yearly**

Explanation

Yearly billing cycles would be too long to effectively monitor and evaluate the availability of Azure services. Waiting a full year to assess the service's uptime could result in delayed identification and resolution of any potential issues.

Overall explanation

From the official Azure docs:

Availability for all Azure services is calculated over a **monthly** billing cycle. Click here to download SLA for most Microsoft Azure Services.

Reference : https://azure.microsoft.com/en-us/support/legal/sla/summary/

Domain

Describe Azure management and governance

Question 57 Skipped

A government agency collaborates with other public sector entities to deploy a shared cloud environment tailored to stringent security standards, while also seeking to benefit from pooled resources. Which characteristics align with the cloud deployment model they are likely adopting? (Select all that apply.)

Correct selection

☐ **It supports compliance with industry-specific regulations**

Explanation

This choice is correct because one of the key characteristics of a shared cloud environment for public sector entities is its ability to support compliance with industry-specific regulations, such as stringent security standards and data protection requirements. This ensures that the shared cloud environment meets the necessary regulatory requirements for the collaborating organizations.

☐ **Infrastructure is fully managed by a third-party provider**

Explanation

This choice is incorrect because in a shared cloud environment, the infrastructure is typically managed by the organizations sharing the resources, not by a third-party provider. This allows the entities to have more control over the security and compliance of the environment.

Correct selection

☐ **Resources are shared among a specific group with common needs**

Explanation

This choice is correct because the shared cloud environment is tailored to meet the specific needs of a group of public sector entities. By sharing resources, they can benefit from cost savings and efficient resource utilization while maintaining stringent security standards.

☐ **It offers the broadest accessibility to the general public**

Explanation

This choice is incorrect because a shared cloud environment tailored to stringent security standards for public sector entities is not designed to offer broad accessibility to the general public. It is more focused on meeting the specific needs and security requirements of the collaborating organizations.

Overall explanation

Based on the scenario provided, the government agency is collaborating with other public sector entities to deploy a shared cloud environment tailored to stringent security standards while benefiting from pooled resources. This closely aligns with a **Community Cloud Deployment Model**.

Here's how each characteristic applies:

A) Resources are shared among a specific group with common needs.

- This characteristic **accurately describes the Community Cloud model**. In this deployment model, resources are shared by organizations with common interests, such as government entities or businesses within a particular sector. The shared resources help reduce costs and meet common requirements, such as stringent security standards. Correct.

B) Infrastructure is fully managed by a third-party provider

- This characteristic typically refers to **public clouds** or **third-party-managed private clouds**. However, in the **Community Cloud** model, infrastructure management can either be handled by a third-party provider or by the organizations themselves, depending on the setup. While third-party management is possible, it's not an essential defining characteristic of the Community Cloud. **Partially correct**, but not a defining characteristic.

C) It offers the broadest accessibility to the general public

- This characteristic aligns with the **Public Cloud** deployment model, where services are offered to anyone on the internet and are accessible to the general public. The **Community Cloud**, however, is more restrictive and only allows access to organizations with similar needs, such as government agencies or specific sectors. **Incorrect**. This is characteristic of a **Public Cloud**, not a Community Cloud.

D) It supports compliance with industry-specific regulations

- This is **true for the Community Cloud model**, especially in scenarios where the cloud environment is tailored to meet the specific regulatory or compliance needs of a particular group. For government agencies, this could include compliance with privacy laws, data sovereignty requirements, or specific industry standards (e.g., HIPAA for healthcare or FISMA for federal government agencies).

Domain

Describe Cloud Concepts

Question 58 Skipped

A startup has deployed a set of Virtual Machines which are critical for their day-to-day operations. They need to ensure their availability even if a single data center goes down.

One of their interns has suggested that deploying these VMs to multiple resource groups would solve the problem. Do you agree?

Correct answer

◯ **No**

Explanation

No, deploying Virtual Machines to multiple resource groups will not ensure availability in case of a data center failure. To achieve high availability, the VMs should be deployed across multiple Azure regions or availability zones. This will help distribute the workload and ensure that the services remain accessible even if one data center experiences an outage.

◯ **Yes**

Explanation

Deploying Virtual Machines to multiple resource groups does not guarantee high availability in case of a data center failure. Resource groups are logical containers for Azure resources and are used for management and billing purposes. Placing VMs in different resource groups does not provide redundancy or fault tolerance across data centers.

Overall explanation

A resource group is a logical container for Azure resources. When you create a resource group, you specify which location to create the resource group in.

However, when you create a virtual machine and place it in the resource group, the virtual machine can still be in a different location (different datacenter).

Therefore, creating multiple resource groups, even if they are in separate datacenters does not ensure that the services running on the virtual machines are available if a single data center fails. What you really need is high availability and deploying the VM to multiple Regions and AZs.

References: https://docs.microsoft.com/en-us/azure/azure-resource-manager/management/overview#resource-groups

Domain

Describe Azure architecture and services

Question 59 Skipped

A multinational corporation is evaluating cloud deployment models to host a customer-facing application. They require strict data residency compliance in certain regions, integration with legacy on-premises systems, and the ability to leverage third-party managed infrastructure for non-sensitive workloads. Which cloud deployment models could meet these diverse needs? (Select all that apply.)

☐ **Public cloud**

Explanation

Public cloud may not be the best option for the multinational corporation in this scenario as it may not provide the strict data residency compliance required for certain regions. Public cloud services are typically shared among multiple organizations and may not offer the level of control needed for compliance with specific data residency regulations.

☐ **Community cloud**

Explanation

Community cloud may not be the best fit for the multinational corporation's needs as it is typically shared among organizations with similar interests or requirements. While it can offer some level of data residency compliance and shared infrastructure, it may not provide the flexibility and integration capabilities required for this scenario.

Correct selection

☐ **Hybrid cloud**

Explanation

Hybrid cloud is a suitable option for the multinational corporation as it allows them to leverage both public and private cloud environments. This model enables the organization to meet data residency compliance requirements by keeping sensitive data on-premises or in a private cloud, while also utilizing third-party managed infrastructure for non-sensitive workloads.

Correct selection

☐ **Private cloud**

Explanation

Private cloud can meet the strict data residency compliance requirements as it allows the organization to have dedicated infrastructure that can be located in specific regions. This deployment model also provides the integration with legacy on-premises systems that the corporation requires.

Overall explanation

A private cloud supports dedicated, compliant infrastructure (data residency), while a hybrid cloud integrates on-premises systems with third-party cloud resources. Public cloud alone lacks integration with legacy systems, and community cloud is too niche for this scope.

Reference: https://azure.microsoft.com/en-us/resources/cloud-computing-dictionary/what-are-private-public-hybrid-clouds

Domain

Describe Cloud Concepts

Question 60 Skipped

True or False:

Microsoft Entra ID can restrict access attempts to only those coming from known devices.

○ False

Correct answer

○ **True**

Explanation

True. Microsoft Entra ID enables organizations to enforce access policies based on the user's identity and the device they are using. By restricting access attempts to only known devices, organizations can enhance security and control access to their resources more effectively.

Overall explanation

From the Official Azure Documentation:

Azure AD provides services such as:

- **Authentication**

  This includes verifying identity to access applications and resources. It also includes providing functionality such as self-service password reset, multifactor authentication, a custom list of banned passwords, and smart lockout services.

- **Single sign-on**

  SSO enables you to remember only one username and one password to access multiple applications. A single identity is tied to a user, which simplifies the security model. As users change roles or leave an organization, access modifications are tied to that identity, which greatly reduces the effort needed to change or disable accounts.

- **Application management**

  You can manage your cloud and on-premises apps by using Azure AD. Features like Application Proxy, SaaS apps, the My Apps portal (also called the *access panel*), and single sign-on provide a better user experience.

- **Device management**

  Along with accounts for individual people, Azure AD supports the registration of devices. Registration enables devices to be managed through tools like Microsoft Intune. It also allows for device-based Conditional Access policies to restrict access attempts to only those coming from known devices, regardless of the requesting user account.

Reference: https://docs.microsoft.com/en-ca/learn/modules/secure-access-azure-identity-services/3-what-is-azure-active-directory

Domain

Describe Azure architecture and services

Question 61 Skipped

You have managed an App that you developed and deployed On-Prem for a long time, but would now like to move it to Azure and be relieved of all the manual administration and maintenance. Which of the following buckets would be most suitable for your use case?

○ **Database as a Service (Daas)**

Explanation

Database as a Service (DaaS) provides database management and hosting services over the internet. While DaaS can help offload the management of your database, it may not address the broader requirements of moving your entire App to Azure and being relieved of all manual administration and maintenance. For your use case, a more comprehensive solution like PaaS would be more suitable.

○ **Software as a service (Saas)**

Explanation

Software as a Service (SaaS) would not be the most suitable option for your use case as it involves using software applications over the internet that are managed by a third-party provider. Since you want to move your existing App to Azure and be relieved of manual administration and maintenance, SaaS may not provide the level of control and customization you require.

Correct answer

○ **Platform as a service (Paas)**

Explanation

Platform as a Service (PaaS) would be the most suitable option for your use case. PaaS provides a platform and environment for developers to build, deploy, and manage applications

without the complexity of infrastructure management. By using PaaS in Azure, you can focus on developing and running your App without worrying about the underlying infrastructure.

○ **Infrastructure as a Service (Iaas)**

Explanation

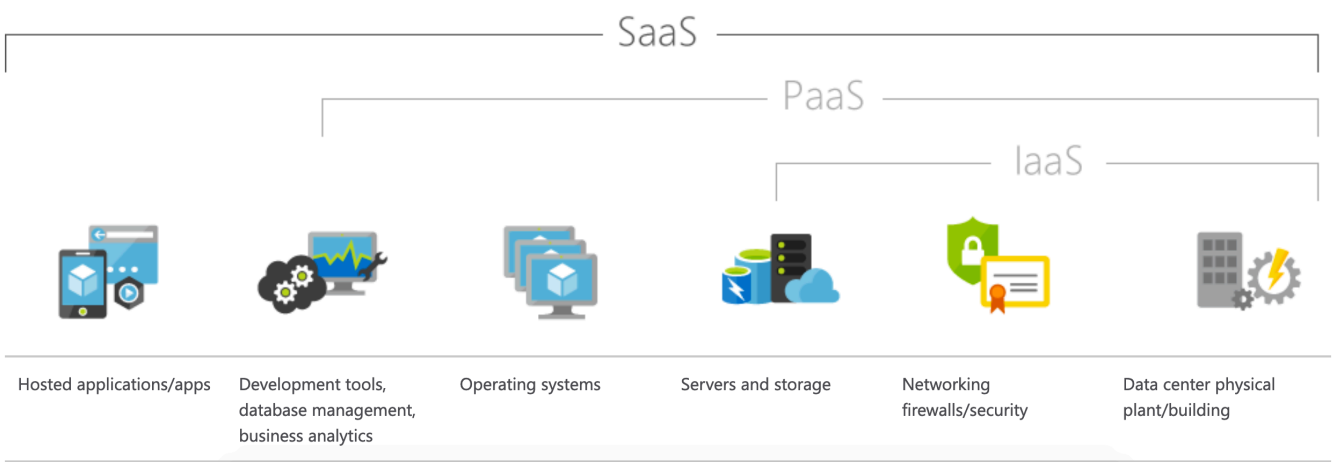
Infrastructure as a Service (IaaS) involves renting virtualized hardware resources over the internet. While IaaS provides more control over the infrastructure compared to SaaS, it still requires manual administration and maintenance of the operating system, middleware, and applications. Since you want to be relieved of manual administration and maintenance, IaaS may not be the best choice for your use case.

Overall explanation

Platform as a service (PaaS) is a complete development and deployment environment in the cloud, with resources that enable you to deliver everything from simple cloud-based apps to sophisticated, cloud-enabled enterprise applications. You purchase the resources you need from a cloud service provider on a pay-as-you-go basis and access them over a secure Internet connection.

Like IaaS, PaaS includes infrastructure—servers, storage, and networking—but also middleware, development tools, business intelligence (BI) services, database management systems, and more. PaaS is designed to support the **complete** web application lifecycle: building, testing, deploying, managing, and updating.

PaaS allows you to **avoid** the expense and complexity of buying and managing software licenses, the underlying application infrastructure and middleware, container orchestrators such as Kubernetes, or the development tools and other resources. You manage the applications and services you develop, and the cloud service provider typically manages everything else.



Since we need to reduce the overhead effort of managing everything, and create our own solution, PaaS is the best option!

References : https://azure.microsoft.com/en-us/overview/what-is-paas/

Domain

Describe Cloud Concepts

Question 62 Skipped

A retail chain collaborates with suppliers and engages customers via an Azure-hosted portal. Suppliers use their own corporate credentials to access inventory data, while customers sign in with social media accounts. Which Azure feature manages these identities?

☐ **Azure RBAC**

Explanation

Azure RBAC (Role-Based Access Control) is not the correct choice for managing identities in this scenario. While RBAC is used to control access to Azure resources based on roles assigned to users, it does not handle the authentication and identity management of external suppliers and customers accessing the Azure-hosted portal.

Correct selection

☐ **Microsoft Entra B2B**

Explanation

Microsoft Azure B2B (Business-to-Business) is the correct choice as it allows the retail chain to collaborate with suppliers by providing access to inventory data using their corporate credentials. This feature enables secure access to resources for external users without the need for creating new identities.

Correct selection

☐ **Microsoft Entra B2C**

Explanation

Microsoft Azure B2C (Business-to-Consumer) is the correct choice as it allows customers to sign in with their social media accounts on the Azure-hosted portal. This feature provides a seamless authentication experience for customers and allows the retail chain to manage customer identities easily.

☐ **Microsoft Entra Domain Services**

Explanation

Microsoft Azure Domain Services is not the correct choice for managing identities in this scenario. This feature is used to integrate on-premises Active Directory with Azure and does not directly handle external supplier or customer identities for collaboration and engagement.

Overall explanation

The correct answers are:

Microsoft Entra B2B, for supplier collaboration

- **Correct**. **Microsoft Entra B2B** (Business-to-Business) allows organizations to securely collaborate with external partners (like suppliers) by enabling them to sign in using their **own corporate credentials** (e.g., Active Directory or other

identity providers). In this case, suppliers are accessing the retail chain's portal with their own credentials, which aligns with **Microsoft Entra B2B**.

Microsoft Entra B2C, for customer social logins

- **Correct**. **Microsoft Entra B2C** (Business-to-Consumer) allows organizations to manage **external identities** for consumers, enabling them to sign in using social media accounts or other identity providers. In this case, customers are signing in with social media accounts, which aligns with **Microsoft Entra B2C**.

Why the other options are incorrect:

- **Microsoft Entra Domain Services, for external domain sync**: **Microsoft Entra Domain Services** is used for domain-join scenarios and supporting legacy applications in the cloud, but it does not manage **external identities** or provide access for suppliers or customers. It's not intended for collaborating with external identities like in this scenario.

- **Azure RBAC, for external user permissions**: **Azure RBAC** (Role-Based Access Control) is used to assign permissions to Azure resources (e.g., virtual machines, storage), but it does not handle **external identity management** for users logging in via social media or corporate credentials. **RBAC** is more about access control and permission assignment to Azure resources, not managing external identities.

Domain

Describe Azure architecture and services

Question 63 Skipped

A university tracks Azure costs for its research labs, labelling VMs by department, analyzing usage spikes during experiments, and recommending VM resizing to cut expenses. Which Azure tools or features support this cost management strategy? (Select all that apply.)

Correct selection

- [ ] **Azure Cost Analysis**

Explanation

Azure Cost Analysis provides the university with detailed insights into their Azure spending, including usage spikes during experiments. It allows for the visualization of cost data, identification of cost-saving opportunities, and the ability to optimize resource allocation based on usage patterns.

☐ **Azure Pricing Calculator**

Explanation

The Azure Pricing Calculator is a tool that helps estimate the cost of Azure services based on specific configurations and usage patterns. While it can be useful for forecasting expenses, it does not directly support the university's cost management strategy of tracking costs by department, analyzing usage spikes, and recommending VM resizing.

Correct selection

☐ **Tags**

Explanation

Tags in Azure allow the university to label VMs by department, making it easier to track costs and allocate expenses accordingly. By using tags, the university can categorize resources and analyze spending patterns based on different criteria.

Correct selection

☐ **Azure Advisor**

Explanation

Azure Advisor provides recommendations to the university on how to optimize their Azure resources, including resizing VMs to cut expenses. It offers best practices and cost-saving suggestions based on usage patterns and resource configurations, aligning with the university's cost management strategy.

Overall explanation

The Azure tools and features that support this cost management strategy are:

Tags, for departmental cost allocation

- **Correct**. **Tags** are used to label Azure resources, such as **VMs**, by specific categories like department or project. This allows the university to allocate costs to the respective departments or research labs, making it easier to track and manage spending for each unit.

Azure Cost Analysis, for usage trend insights

- **Correct**. **Azure Cost Analysis** helps visualize and analyze **usage trends** over time. By using this tool, the university can spot **usage spikes** during experiments, understand when resources are being consumed most, and identify potential inefficiencies or areas for optimization.

Azure Pricing Calculator, for resizing cost estimates

- **Incorrect**. The **Azure Pricing Calculator** is typically used to **estimate the costs** of Azure resources before deployment, based on configuration and usage choices. It does not provide insights or estimates for resizing existing resources. Instead, it helps in planning costs upfront.

Azure Advisor, for optimization recommendations

- **Correct**. **Azure Advisor** provides **optimization recommendations**, including suggestions for resizing **VMs** based on actual usage and performance data. This can help the university identify underutilized VMs that could be resized to reduce costs.

Domain

Describe Azure management and governance

Question 64 Skipped

A logistics firm builds a hybrid network connecting its on-premises datacenter to Azure, requiring encrypted public internet access and high-speed private connectivity for sensitive data. Which Azure networking services support this? (Select all that apply.)

Correct selection

☐ **ExpressRoute**

Explanation

ExpressRoute offers high-speed private connectivity between on-premises datacenters and Azure. It provides dedicated, private connections that do not traverse the public internet, ensuring secure and reliable communication for sensitive data transfers.

☐ **Azure DNS**

Explanation

Azure DNS is a domain name system (DNS) service for translating domain names to IP addresses, but it does not provide the encrypted public internet access or high-speed private connectivity needed for connecting on-premises datacenters to Azure in a hybrid network setup.

Correct selection

☐ **Azure VPN Gateway**

Explanation

Azure VPN Gateway provides encrypted public internet access for connecting on-premises datacenters to Azure securely. It allows for secure communication over the public internet using VPN protocols, making it suitable for hybrid network setups requiring encrypted connectivity.

☐ **Virtual Network Peering**

Explanation

Virtual Network Peering allows connecting virtual networks within Azure, but it does not provide the necessary encrypted public internet access or high-speed private connectivity required for a hybrid network connecting on-premises datacenters to Azure.

Overall explanation

In this scenario, the logistics firm is building a **hybrid network** connecting its **on-premises datacenter** to **Azure**. The requirements include **encrypted public internet access** and **high-speed private connectivity for sensitive data**.

Let's analyze which **Azure networking services** would best support these needs:

Azure VPN Gateway, for encrypted public connections

- **Correct**. The **Azure VPN Gateway** enables secure and encrypted **public internet connections** between an **on-premises network** and **Azure**. It uses **IPsec/IKE** protocols to ensure the **encryption** of traffic over the **internet**. This service supports the requirement for secure **encrypted access** over the **public internet**.

ExpressRoute, for private, high-speed links

- **Correct**. **ExpressRoute** provides a **private, high-speed** connection between the **on-premises datacenter** and **Azure**, bypassing the public internet. It's ideal for handling **sensitive data** since it ensures **private** and **secure communication** with **high performance**. This meets the firm's need for **private connectivity** with Azure for sensitive data.

Virtual Network Peering, for inter-VNet connectivity

- **Incorrect**. **Virtual Network Peering** allows **Azure VNets** to communicate with each other, but it does not apply to the hybrid network connection between an on-premises network and Azure. It is more relevant for connecting **multiple VNets** within Azure rather than linking **on-premises** networks to Azure via VPN or ExpressRoute.

Azure DNS, for domain name resolution

- **Incorrect**. **Azure DNS** is a **domain name resolution** service that helps resolve domain names to IP addresses within Azure. While it's essential for managing DNS in Azure, it does not directly support **encrypted public connections** or **private connectivity** for data transfer between on-premises and Azure. It does not meet the firm's networking needs in this scenario.

Domain

Describe Azure architecture and services

Question 65 Skipped

What is the primary purpose of redundancy in Azure Storage?

○ **To improve data processing speed for applications.**

Explanation

Redundancy in Azure Storage is not primarily aimed at improving data processing speed for applications. While redundancy may indirectly contribute to performance by ensuring data availability, its main focus is on maintaining data integrity and availability in case of failures.

Correct answer

◯ **To provide high availability and durability in the face of failures.**

Explanation

The primary purpose of redundancy in Azure Storage is to provide high availability and durability by replicating data across multiple storage locations. This helps ensure that data remains accessible and intact even in the face of failures or outages.

○ **To increase the storage capacity of Azure resources.**

Explanation

Redundancy in Azure Storage is not primarily used to increase storage capacity. While redundancy may involve replicating data across multiple storage locations, its main purpose is

not to expand storage capacity.

○ **To protect against data corruption and unauthorized access.**

Explanation

While protecting against data corruption and unauthorized access is an important aspect of Azure Storage, the primary purpose of redundancy is to ensure high availability and durability in the event of failures. Redundancy helps maintain data integrity and accessibility.

Overall explanation

From the official documentation: Azure Storage always stores multiple copies of your data so that it's protected from planned and unplanned events such as transient hardware failures, network or power outages, and natural disasters. Redundancy ensures that your storage account meets its availability and durability targets even in the face of failures. Redundancy in Azure Storage ensures that data is **protected** from planned and unplanned events, providing high availability and durability even in the event of hardware failures, outages, or disasters.

Reference: https://learn.microsoft.com/en-us/training/modules/describe-azure-storage-services/3-redundancy

Domain

Describe Azure architecture and services

Question 66 Skipped

A retailer runs an e-commerce platform on Azure, facing cost overruns from auto-scaling VMs, high outbound data transfers to Asia, and premium storage tiers. Which factors are driving these Azure costs? (Select all that apply.)

Correct selection

☐ **Resource type**

Explanation

Resource type plays a significant role in driving Azure costs as different types of resources have varying pricing structures. For example, premium storage tiers are more expensive than standard storage tiers, leading to higher costs for the retailer's e-commerce platform.

☐ **Subscription type**

Explanation

Subscription type can also impact Azure costs, but it is not directly mentioned in the scenario. Different subscription types offer various pricing options and discounts, so choosing the right subscription plan based on the retailer's needs can help manage costs effectively.

Correct selection

☐ **Data egress**

Explanation

Data egress, or outbound data transfers, can contribute to increased Azure costs, especially if there is a high volume of data being transferred to regions like Asia. The cost of data egress can vary based on the amount of data transferred, so optimizing data transfer practices can help reduce costs.

Correct selection

☐ **Usage patterns**

Explanation

Usage patterns, such as auto-scaling VMs and high usage of premium storage tiers, can drive up Azure costs. Understanding and optimizing usage patterns, such as adjusting auto-scaling settings or utilizing more cost-effective storage options, can help the retailer reduce costs and better manage their Azure expenses.

Overall explanation

The factors driving the **Azure costs** for the retailer, based on the scenario described, are:

Resource type

- **Correct**. The **resource type** directly influences Azure costs. For example, using **premium storage tiers** and **auto-scaling VMs** (which may scale up unexpectedly during traffic spikes) can increase costs significantly. The type of storage and virtual machine size selected can impact both the **operating cost** and the **performance** of the infrastructure.

Data egress

- **Correct**. **High outbound data transfers** (data egress) to **Asia** are a significant cost driver. Azure charges for **data egress** (the cost of transferring data out of Azure to other locations), especially when transferring large amounts of data to regions outside the data center's region. This can be particularly costly when there's high traffic to distant regions.

Subscription type

- **Incorrect**. The **subscription type** typically does not directly affect the **cost** of the resources being used unless the organization is on a plan that offers specific discounts, such as an **Enterprise Agreement (EA)** or **reserved capacity pricing**. However, in this case, the scenario does not mention anything about the subscription type, and thus, it is not the primary factor driving the costs here.

Usage patterns

- **Correct**. **Usage patterns** play a big role in **Azure costs**, especially when it comes to **auto-scaling**. If the platform sees sudden surges in traffic or inconsistent usage patterns, the system may auto-scale **virtual machines (VMs)** up to larger sizes or more instances to handle the load, resulting in **higher resource consumption** and thus increased costs. Irregular usage can cause spikes in costs that could be avoided with better forecasting and auto-scaling configuration.

Domain

Describe Azure management and governance

Question 67 Skipped

You are designing a solution to improve the resiliency of your application in Azure. Which of the following would you choose to ensure your application remains available during planned maintenance events?

○ **Availability Sets**

Explanation

Availability Sets in Azure help ensure high availability by distributing virtual machines across multiple physical servers within a datacenter. While they can help with unplanned downtime, they do not provide protection against planned maintenance events.

Correct answer

○ **Availability Zones**

Explanation

Availability Zones in Azure provide redundancy within a region by distributing resources across multiple datacenters. This ensures that even during planned maintenance events affecting one datacenter, your application remains available in another datacenter within the same region.

○ **Azure Container Registry**

Explanation

Azure Container Registry is a service used to store and manage container images for Azure deployments. While it is essential for containerized applications, it does not directly contribute to ensuring application availability during planned maintenance events.

○ **Scale Sets**

Explanation

Scale Sets in Azure help with scaling out virtual machines to meet increasing demand. While they can improve performance and scalability, they do not specifically address the resiliency needs during planned maintenance events.

Overall explanation

Availability Zones are a high-availability offering from Microsoft Azure that provide a fault-tolerant architecture for applications. Availability Zones are physically separate data centers within an Azure region, each with their own power, cooling, and networking infrastructure.

By deploying virtual machines and other resources across multiple Availability Zones, you can ensure that your application remains available even in the event of a data center outage or other disruption. Availability Zones provide redundancy and isolation, which helps protect your application from both planned and unplanned downtime.

Other options -

- **Availability Sets** are a feature of Microsoft Azure that help ensure that virtual machines are distributed across multiple fault domains and update domains within a single data center or region. This helps protect against hardware failures and other disruptions by ensuring that virtual machines are not all located in the same physical rack or power source. However, Availability Sets do not provide any inherent protection against data center-wide outages, which can occur due to issues such as network outages, power failures, or natural disasters. In such cases, all virtual machines in the affected data center or region may become unavailable.

- **Scale Sets** is not necessarily the best choice for ensuring availability during planned maintenance events because it only provides horizontal scalability by adding or removing virtual machines based on demand, but does not inherently provide any availability benefits beyond what is provided by the underlying infrastructure.

  Scale Sets are a feature of Microsoft Azure that provide automatic scaling of a set of virtual machines based on demand. This helps ensure that the application can handle varying levels of traffic and usage, but does not necessarily provide inherent resiliency against planned maintenance events or other types of disruptions.

- **Azure Container Registry** is a managed private Docker registry service that enables you to store and manage container images in Azure. While it provides benefits such as secure storage, authentication, and geo-replication of

container images, it is not directly related to ensuring availability during planned maintenance events.

Reference: https://learn.microsoft.com/en-us/azure/reliability/availability-zones-overview

Domain

Describe Azure architecture and services

Question 68 Skipped

An IT manager plans a cloud migration and needs to estimate expenses. One tool forecasts monthly Azure costs based on selected services and regions, while another compares long-term savings against an on-premises setup. Which statement BEST contrasts the Pricing Calculator and TCO Calculator?

- The TCO Calculator focuses on short-term Azure pricing, while Pricing Calculator assesses total ownership

Explanation

The TCO Calculator actually looks at the total cost of ownership (TCO) over a longer period, typically years, when comparing the costs of running workloads on Azure versus on-premises. On the other hand, the Pricing Calculator provides detailed estimates of Azure service costs on a monthly basis. Therefore, the statement that the TCO Calculator focuses on short-term Azure pricing is incorrect.

- The TCO Calculator sets spending budgets, while Pricing Calculator tracks usage trends

Explanation

The TCO Calculator is not primarily focused on setting spending budgets but rather on comparing the overall costs of running workloads in the Azure cloud versus on-premises setups. On the other hand, the Pricing Calculator is used to estimate monthly Azure costs based on selected services and regions, tracking usage trends rather than setting spending budgets. Therefore, the statement that the TCO Calculator sets spending budgets, while the Pricing Calculator tracks usage trends, is not correct.

○ **The Pricing Calculator predicts on-premises costs, while TCO estimates Azure usage**

Explanation

The Pricing Calculator is specifically designed to estimate the costs of using Azure services on a monthly basis, while the TCO Calculator is focused on comparing the long-term savings of using Azure cloud services versus maintaining an on-premises setup. Therefore, the statement that the Pricing Calculator predicts on-premises costs is not accurate.

Correct answer

○ **The Pricing Calculator details Azure service costs, while TCO compares cloud vs. on-premises**

Explanation

The Pricing Calculator is used to provide a breakdown of the costs associated with using specific Azure services in different regions, helping users estimate their monthly expenses. In contrast, the TCO Calculator is used to compare the total cost of ownership of running workloads in the Azure cloud versus on-premises setups, highlighting potential long-term savings. This makes the statement that the Pricing Calculator details Azure service costs, while TCO compares cloud vs. on-premises, the most accurate.

Overall explanation

The best answer is: **The Pricing Calculator details Azure service costs, while TCO compares cloud vs. on-premises**

Explanation:

- **Pricing Calculator**: This tool is used to **forecast monthly Azure costs** based on the selection of services and regions. It helps estimate how much specific Azure services will cost based on usage, regions, and configurations, making it ideal for **estimating costs for a planned cloud setup**.
- **TCO Calculator (Total Cost of Ownership Calculator)**: This tool helps you **compare the long-term savings of using Azure vs. an on-premises infrastructure**. It considers the cost of maintaining on-premises infrastructure (including hardware, personnel, and other expenses) and compares it with the

estimated costs of using Azure. This helps in understanding how migrating to the cloud can result in savings over time.

Why the other options are incorrect:

- **The Pricing Calculator predicts on-premises costs, while TCO estimates Azure usage**:
  - **Incorrect**. The **Pricing Calculator** forecasts **Azure costs**, not on-premises costs. The **TCO Calculator**compares **cloud** (Azure) with **on-premises** setups.

- **The TCO Calculator focuses on short-term Azure pricing, while Pricing Calculator assesses total ownership**:
  - **Incorrect**. The **TCO Calculator** looks at **long-term savings** and compares **Azure** with an **on-premises setup**, not short-term pricing. The **Pricing Calculator** estimates the **total cost of Azure services** based on usage and configurations.

- **The TCO Calculator sets spending budgets, while Pricing Calculator tracks usage trends**:
  - **Incorrect**. Neither the **TCO Calculator** nor the **Pricing Calculator** is specifically designed to set **spending budgets** or **track usage trends**. The TCO Calculator compares costs between **on-premises** and **Azure**, and the Pricing Calculator estimates **service-specific costs** in Azure.

Domain

Describe Azure management and governance

Question 69 Skipped

Your organization has deployed a Virtual Machine in Azure with the Standard_D2s_v3 VM size. The Virtual Machine is running a resource-intensive workload, and you want to optimize costs. Which of the following could be an effective way to achieve this?

○ **Use a different Azure region with lower VM pricing.**

Explanation

Using a different Azure region with lower VM pricing may help reduce costs, but it may not directly optimize costs for the specific workload running on the Virtual Machine. Enabling automatic scaling based on workload demands would be a more targeted approach to cost optimization in this scenario.

◯ **Use a larger VM size to improve performance**

Explanation

Using a larger VM size to improve performance may increase costs rather than optimizing them. It is important to consider the workload requirements and choose the appropriate VM size to avoid unnecessary expenses.

◯ **Use a smaller VM size to reduce costs**

Explanation

Using a smaller VM size can indeed reduce costs, but it may not be the most effective way to optimize costs while running a resource-intensive workload. It is crucial to balance performance and cost when selecting the VM size.

Correct answer

◯ **Enable automatic scaling to adjust VM size based on workload**

Explanation

Enabling automatic scaling to adjust the VM size based on workload can be an effective way to optimize costs. This allows the VM to dynamically scale up or down based on resource demands, ensuring optimal performance while minimizing unnecessary expenses.

Overall explanation

The correct answer is **'Enable automatic scaling to adjust VM size based on workload'** as it could be an effective way to optimize costs for the Virtual Machine in Azure. Automatic scaling allows you to automatically adjust the number of Virtual Machine instances and the size of the instances based on demand, which can help you save costs by avoiding overprovisioning.

Using a larger VM size : This would increase costs as its more expensive to use a larger VM size.

Using a smaller VM size: This could reduce performance and may not be suitable for a resource-intensive workload.

Using a different Azure region with lower VM pricing: This may not be a practical solution if the workload requires a specific region for compliance or latency reasons.

Domain

Describe Azure architecture and services

Question 70 Skipped

A marketing firm tags its Azure storage accounts with “Campaign=Spring2025” to filter costs by initiative, expecting this to automatically reduce expenses during low-activity periods. Does this accurately describe the purpose of tags in Azure cost management?

Correct answer

◯ **No**

Explanation

Tags in Azure cost management are primarily used for tracking and organizing resources, not for automatically reducing expenses during low-activity periods. While tagging storage accounts with labels like "Campaign=Spring2025" can help with cost allocation and analysis, tags themselves do not have the functionality to actively manage or adjust costs based on activity levels.

◯ **Yes**

Explanation

Tags in Azure cost management are used to categorize and organize resources for tracking and reporting purposes. While tagging storage accounts with specific labels like "Campaign=Spring2025" can help filter costs by initiative, it does not automatically reduce

expenses during low-activity periods. Tags do not have the capability to directly impact or adjust costs based on usage levels.

Overall explanation

While **tags** in Azure are useful for organizing and categorizing resources (such as filtering costs by initiative, project, or department), they do **not** automatically affect **costs** or **resource behavior**.

In this case, while the marketing firm can use the tag **“Campaign=Spring2025”** to track and filter costs related to that specific initiative, **tags themselves do not impact resource usage or automatically reduce expenses** during low-activity periods. Tags are purely for **organizational and reporting purposes**; they help categorize resources and provide a way to track cost allocation, but they do **not** directly influence how or when resources are utilized.

If the firm wants to reduce expenses during low-activity periods, they would need to implement **resource scaling**, **automation**, or **shut down resources** during those times, not rely on tags to automatically adjust the resource usage.

Domain

Describe Azure management and governance

Question 71 Skipped

In which of the following scenarios, would an IaaS deployment make the most sense?

- ○ **For setting a development framework**

Explanation

Setting up a development framework is better suited for PaaS offerings, as they provide pre-configured development environments, tools, and services that streamline the development process. PaaS platforms are designed to support application development and deployment without the need to manage underlying infrastructure, making them more efficient for development tasks.

○ **For analytics or business intelligence**

Explanation

IaaS is not typically the best choice for analytics or business intelligence scenarios, as these often require specialized services and platforms that are better suited for PaaS (Platform as a Service) or SaaS (Software as a Service) offerings. These higher-level services provide more advanced capabilities and tools for data processing and analysis.

○ **For finance and expense tracking**

Explanation

Finance and expense tracking applications may benefit from a combination of IaaS and PaaS services, depending on the specific requirements. While IaaS can provide the necessary infrastructure for hosting the application and storing data, PaaS offerings may offer specialized services for data processing, analysis, and reporting that can enhance the functionality and performance of finance applications.

Correct answer

○ **For a lift-and-shift migration**

Explanation

IaaS (Infrastructure as a Service) is often the best choice for a lift-and-shift migration scenario where existing on-premises applications need to be moved to the cloud without significant changes. It provides virtualized computing resources, such as virtual machines, storage, and networking, to replicate the existing infrastructure setup in the cloud.

Overall explanation

From the official docs: **Infrastructure as a service (IaaS)** is the most flexible category of cloud services, as it provides you the maximum amount of control for your cloud resources. In an IaaS model, the cloud provider is responsible for maintaining the hardware, network connectivity (to the internet), and physical security. You're responsible for everything else: operating system installation, configuration, and maintenance; network configuration; database and storage configuration; and so on. With IaaS, you're essentially renting the hardware in a cloud datacenter, but what you do with that hardware is up to you.

Some common scenarios where IaaS might make sense include:

- Lift-and-shift migration: You're standing up cloud resources similar to your on-prem datacenter, and then simply moving the things running on-prem to running on the IaaS infrastructure.
- Testing and development: You have established configurations for development and test environments that you need to rapidly replicate. You can stand up or shut down the different environments rapidly with an IaaS structure, while maintaining complete control.

Reference: https://learn.microsoft.com/en-us/training/modules/describe-cloud-service-types/2-describe-infrastructure-service

Domain

Describe Cloud Concepts

Question 72 Skipped

Azure _____ are unique physical buildings—located all over the globe—that house a group of networked computer servers.

○ **Availability Zones**

Explanation

Availability Zones in Azure are unique physical locations within an Azure region. They are made up of one or more datacenters and provide high availability and resiliency for applications and data.

○ **Regions**

Explanation

Regions in Azure are geographic areas that contain at least one or more datacenters. They are specific areas within a geography where Azure services are deployed.

○ **Geographies**

Explanation

Geographies in Azure are a grouping of Azure regions that have specific data residency and compliance boundaries. They are made up of two or more regions that are located within the same geopolitical boundaries and are typically separated by at least 300 miles.

Correct answer

○ **Datacenters**

Explanation

Datacenters are the correct choice as they are the physical buildings where networked computer servers are housed. They are spread across different regions and geographies to ensure redundancy and availability.

Overall explanation

From the official Azure docs:

Azure datacentres are unique physical buildings—located all over the globe—that house a group of networked computer servers.

What is an Azure region?

An Azure region is a set of datacenters, deployed within a latency-defined perimeter and connected through a dedicated regional low-latency network.

With more global regions than any other cloud provider, Azure gives customers the flexibility to deploy applications where they need. An Azure region has discrete pricing and service availability.

What is an Azure datacenter?

Azure datacenters are unique physical buildings—located all over the globe—that house a group of networked computer servers.

What are Azure Availability Zones?

Azure Availability Zones are unique physical locations within an Azure region and offer high availability to protect your applications and data from datacenter failures. Each zone is made up of one or more datacenters equipped with independent power, cooling, and networking.

The physical separation of availability zones within a region protects apps and data from facility-level issues. Zone-redundant services replicate your apps and data across Azure Availability Zones to protect from single points of failure.

References: https://azure.microsoft.com/en-gb/global-infrastructure/regions/

Domain

Describe Azure architecture and services

Question 73 Skipped

In which scenario is geo-redundant storage (GRS) recommended for Azure Storage?

○ **When cost optimization is the top priority.**

Explanation

Geo-redundant storage (GRS) is not primarily recommended for cost optimization. While it does provide redundancy and data protection, it may not be the most cost-effective option compared to other storage replication options in Azure.

○ **When data needs to be replicated asynchronously across availability zones.**

Explanation

Geo-redundant storage (GRS) replicates data asynchronously across regions, not availability zones. It ensures data redundancy and protection across different geographic locations for disaster recovery purposes.

○ **When read access to the secondary region is essential.**

Explanation

Geo-redundant storage (GRS) does not prioritize read access to the secondary region. It focuses on data redundancy and protection rather than immediate access to the secondary location.

Correct answer

◯ **When protection from regional disasters is required.**

Explanation

Geo-redundant storage (GRS) is recommended when protection from regional disasters is required. It replicates data to a secondary region located hundreds of miles away from the primary region, providing a high level of data durability and availability in case of regional disasters.

Overall explanation

Geo-redundant storage (GRS) copies data synchronously within a single region and then asynchronously to a **secondary** region, providing durability and protection against regional disasters.

Reference: https://learn.microsoft.com/en-us/training/modules/describe-azure-storage-services/3-redundancy

Domain

Describe Azure architecture and services

Question 74 Skipped

An e-commerce company experiences unpredictable traffic surges during holiday sales, requiring their cloud infrastructure to dynamically provision additional servers and then release them post-event to minimize costs. Amidst this, they realize their provider's ability to instantly adapt resources is a defining feature. Which cloud computing benefit is most critical to their success in this scenario?

Correct answer

◯ **Elasticity, allowing automatic resource scaling**

Explanation

Elasticity, allowing automatic resource scaling, is the most critical benefit in this scenario. It enables the cloud infrastructure to dynamically provision additional servers during traffic surges and release them after the event, minimizing costs by scaling resources based on demand.

◯ **Agility, enabling rapid deployment of new features**

Explanation

Agility, enabling rapid deployment of new features, is important for quickly responding to market demands and introducing new functionalities. However, in the scenario described, the critical need is for the cloud infrastructure to dynamically provision additional servers and release them post-event to minimize costs, which aligns more with the concept of elasticity.

◯ **Predictability, ensuring consistent performance**

Explanation

Predictability, ensuring consistent performance, is essential for maintaining stable operations and meeting service level agreements. However, in the context of the e-commerce company's scenario with unpredictable traffic surges during holiday sales, the ability to instantly adapt resources through elasticity is more critical for success.

◯ **Economy of scale, reducing per-unit costs**

Explanation

Economy of scale, reducing per-unit costs, is beneficial for optimizing costs in cloud computing by taking advantage of bulk purchasing and shared resources. While cost-efficiency is important, the immediate need in the scenario is the ability to dynamically scale resources, making elasticity the most critical benefit.

Overall explanation

Elasticity refers to the ability of a cloud environment to dynamically adjust its resource allocation based on real-time demand. This is particularly important for businesses like e-commerce companies that may experience sudden traffic surges (e.g., during holiday sales or special promotions). Elasticity allows the cloud to automatically add or remove resources (such as servers, storage, and network bandwidth) as needed, ensuring the system can handle peak loads without over-provisioning resources during normal periods. This helps reduce costs and ensures high availability.

Azure Documentation on Elasticity: Azure provides automatic scaling capabilities that help ensure resources are scaled according to the fluctuating demand, enabling businesses to respond in real-time to traffic spikes. Azure offers several services like **Virtual Machine Scale Sets**, **Azure App Service**, and **Azure Functions** to help scale applications.

- **Azure Virtual Machine Scale Sets** enable the automatic scaling of virtual machines in response to traffic.

  Reference: Virtual Machine Scale Sets - Overview
-
- **Azure App Service** allows apps to scale up or out automatically based on performance metrics like CPU utilization or request count.

  Reference: Scaling Azure App Service

- **Azure Functions** provide a serverless model, where resources are automatically allocated based on the execution demand, scaling instantly.

  Reference: Azure Functions - Overview

By leveraging **Elasticity**, the e-commerce company can ensure that its infrastructure automatically adapts to changing traffic demands, without the need for manual intervention or upfront provisioning of unnecessary resources.

Domain

Describe Cloud Concepts

Question 75 Skipped

A gaming company monitors its Azure-hosted game, collecting logs from VMs, setting alerts for high CPU usage, and analyzing app crashes to improve performance. Which Azure Monitor components support this? (Select all that apply.)

Correct selection

☐ **Application Insights**

Explanation

Application Insights is a feature of Azure Monitor that helps the gaming company monitor the performance and usage of their game application. It provides insights into app crashes, performance bottlenecks, and user interactions, allowing them to optimize the game for better user experience.

☐ **ARM Templates**

Explanation

ARM Templates are used for deploying and managing Azure resources through Infrastructure as Code. While they are essential for automating resource deployment, they do not directly support monitoring, logging, or analyzing performance data like Log Analytics, Azure Monitor Alerts, and Application Insights do.

Correct selection

☐ **Azure Monitor Alerts**

Explanation

Azure Monitor Alerts enable the gaming company to set up alert rules based on metrics, logs, and activity log events. This allows them to receive notifications when CPU usage exceeds a certain threshold, helping them proactively address performance issues and improve the game's overall performance.

Correct selection

☐ **Log Analytics**

Explanation

Log Analytics is a centralized log management solution in Azure Monitor that allows the gaming company to collect, analyze, and visualize logs from their VMs. It helps in monitoring the performance of the game by providing insights into system behavior and identifying issues that impact CPU usage and app crashes.

Overall explanation

The correct Azure Monitor components that support the described scenario are:

Log Analytics, for querying VM logs

- **Correct**. **Log Analytics** is part of **Azure Monitor** and is used to collect, analyze, and query log data from resources like **VMs**, applications, and other services. It allows the gaming company to gather logs for performance insights and troubleshooting, such as identifying issues related to **VM logs**.

Azure Monitor Alerts, for CPU threshold notifications

- **Correct**. **Azure Monitor Alerts** enables the setup of custom **alerts** for various conditions like **high CPU usage**. The gaming company can use this to set a threshold for CPU utilization on their VMs, triggering notifications when the limit is exceeded.

Application Insights, for app crash diagnostics

- **Correct**. **Application Insights** is a feature of **Azure Monitor** that provides deep insights into application performance, including the ability to monitor and diagnose issues such as **app crashes**. This is highly relevant for the gaming company to track and improve the stability of their game.

ARM Templates, for monitoring configuration

- **Incorrect**. **ARM Templates** (Azure Resource Manager Templates) are used for **deploying** and **managing resources** in Azure through code. They are not directly involved in monitoring or collecting performance data. They are more about infrastructure configuration rather than performance monitoring.

Domain

Describe Azure management and governance

Question 76 Skipped

_____ enables a user to log in one time and use that credential to access multiple resources and applications from different providers.

○ **Domain Name Service (DNS)**

Explanation

Domain Name Service (DNS) is a system that translates domain names into IP addresses to locate resources on the internet. It is not related to enabling a user to log in once and access multiple resources from different providers.

Correct answer

○ **Single Sign On (SSO)**

Explanation

Single Sign On (SSO) allows a user to log in once and access multiple resources and applications from different providers without the need to log in again for each resource. It provides a seamless and secure user experience by eliminating the need for multiple credentials.

○ **Passwordless**

Explanation

Passwordless authentication is a method of logging in without using a password, typically using biometrics, security keys, or other forms of authentication. While it improves security and user experience, it is not specifically designed to enable a user to access multiple resources with a single login.

○ **Multi-factor Authentication (MFA)**

Explanation

Multi-factor Authentication (MFA) is a security measure that requires users to provide multiple forms of verification before accessing a resource. While it enhances security, it does not provide the convenience of logging in once and accessing multiple resources without additional logins.

Overall explanation

From the Official Azure Documentation:

SSO enables you to remember only one username and one password to access multiple applications. A single identity is tied to a user, which simplifies the security model. As users change roles or leave an organization, access modifications are tied to that identity, which greatly reduces the effort needed to change or disable accounts.

Reference: https://docs.microsoft.com/en-ca/learn/modules/secure-access-azure-identity-services/3-what-is-azure-active-directory

Domain

Describe Azure architecture and services

Question 77 Skipped

Please fill the blank field(s) in the statement with the right words.

An architect defines a multi-tier app's resources in JSON files, enabling repeatable deployments across dev and prod environments without manual configuration. This approach uses Azure's __ as code methodology.

Correct answer

infrastructure

Explanation

The approach described, where the architect defines a multi-tier app's resources in **JSON files** to enable **repeatable deployments** across different environments (such as dev and prod), uses the **Infrastructure as Code (IaC)** methodology. In this case, **Azure Resource Manager (ARM) Templates** are being used to define and deploy the resources in a **declarative** manner, automating the provisioning process.

IaC allows for defining, provisioning, and managing infrastructure using code, which eliminates the need for manual configuration and ensures consistency across different environments.

Domain

Describe Azure management and governance

Question 78 Skipped

How is the cost of network traffic in Azure affected?

- ○ **By the type of subscription**

Explanation

The cost of network traffic in Azure is not directly influenced by the type of subscription. While different subscription types may have varying costs associated with Azure services, the cost of network traffic is primarily determined by factors like data transfer volume and distance between data centers.

○ **By resource type**

Explanation

The cost of network traffic in Azure is not directly affected by the resource type being used. While different resources may have varying costs associated with their usage, the cost of network traffic itself is more dependent on factors like data transfer volume and distance.

Correct answer

○ **By geography**

Explanation

The cost of network traffic in Azure is affected by geography, as data transfer costs can vary based on the distance between the Azure regions where the data is being transferred. Transferring data between regions that are geographically closer may incur lower costs compared to regions that are farther apart.

○ **By the number of users**

Explanation

The cost of network traffic in Azure is not directly affected by the number of users accessing the resources. The cost is primarily determined by other factors such as data transfer volume and distance between data centers.

Overall explanation

The cost of network traffic in Azure is affected by **geography**. Data transfer costs can vary depending on the zones, which are geographical groupings of Azure regions for billing purposes. The cost of moving data within a region or between regions can differ, impacting the overall cost of network traffic.

Other options -

By the number of users: While the number of users may affect the overall amount of network traffic, the cost is not directly determined by the number of users. Instead, it is determined by the amount of data transferred and the geographical zones involved.

By resource type: The cost of network traffic is related to the amount of data transferred and the zones involved, not the specific Azure resources being used. While the type of resources may have an impact on the amount of data transferred, the cost of network traffic itself is not directly influenced by the resource type.

By the type of subscription: The type of subscription may affect the overall cost of Azure services, including usage allowances, but it doesn't directly determine the cost of network traffic. Network traffic costs are determined by the amount of data transferred and the geographical zones involved.

Reference: https://learn.microsoft.com/en-us/training/modules/describe-cost-management-azure/2-describe-factors-affect-costs-azure

Domain

Describe Azure management and governance

Question 79 Skipped

Please fill the blank field(s) in the statement with the right words.

A financial firm restricts its Azure storage accounts from being deleted by unauthorized users during an audit, applying a safeguard that prevents accidental removal. This protection is provided by Azure __ locks.

Correct answer

resource

Explanation

Azure **Resource Locks** provide a safeguard to **prevent accidental or unauthorized modification or deletion** of resources. In the case described, the financial firm applies a lock

to **Azure storage accounts** to ensure that they cannot be deleted or modified during the audit process. This is typically done by using a **Delete lock**, which prevents the deletion of a resource, or a **Read-only lock**, which prevents any modifications to the resource.

- **Delete lock**: Ensures that resources cannot be accidentally deleted.
- **Read-only lock**: Ensures that resources cannot be modified.

These locks help maintain the integrity and security of critical resources during important activities, such as audits, by preventing unwanted changes or deletions.

Domain

Describe Azure management and governance

Question 80 Skipped

An IT team manages a hybrid Azure environment, enforcing a rule that all VMs must use a specific OS version across cloud and on-premises servers. Which Azure tool ensures this consistent configuration?

○ Azure Arc

Explanation

Azure Arc is a service that extends Azure management and services to any infrastructure, including on-premises, multi-cloud, and edge environments. While it provides capabilities for managing resources outside of Azure, it does not specifically focus on enforcing configuration rules like ensuring consistent OS versions across VMs.

Correct answer

○ **Azure Policy**

Explanation

Azure Policy is the correct choice as it helps enforce rules and policies for resources in Azure. By creating a policy that mandates the use of a specific OS version for all VMs, the IT team can

ensure consistent configuration across cloud and on-premises servers in a hybrid environment.

○ **Azure Monitor**

Explanation

Azure Monitor is a service for collecting, analyzing, and acting on telemetry data from applications and infrastructure. While it helps with monitoring and troubleshooting, it does not have the specific functionality to enforce configuration rules for consistent OS versions across VMs in a hybrid environment.

○ **Azure Resource Manager**

Explanation

Azure Resource Manager is a management service that allows you to create, update, and delete resources in your Azure account. While it helps with resource management and deployment, it does not specifically enforce configuration rules like ensuring consistent OS versions across VMs in a hybrid environment.

Overall explanation

Azure Policy is a governance tool that allows organizations to enforce specific rules and regulations across **both cloud and on-premises resources**. In this case, the IT team can use **Azure Policy** to ensure that all virtual machines (VMs), whether in Azure or on-premises, meet a specific **OS version** requirement. Azure Policy helps enforce compliance with organizational standards by auditing resources and taking actions when they don't comply with the defined policies.

Azure Policy can ensure that only **specific OS versions** are allowed for VMs and can be configured to **audit** or **enforce** compliance across both cloud and on-premises environments (especially when using **Azure Arc** for hybrid management).

Why the other options are incorrect:

- **Azure Resource Manager, deploying standardized templates**: **Azure Resource Manager (ARM)** is primarily used for organizing and managing Azure resources and deploying resources through templates. While it helps

standardize deployment, it does not enforce policies to ensure compliance across both cloud and on-premises environments.

- **Azure Arc, extending management to on-premises servers**: **Azure Arc** allows you to manage **on-premises** and **multicloud resources** from within the Azure portal, but it doesn't directly enforce compliance like Azure Policy does. Azure Arc extends Azure services to hybrid environments but does not enforce specific OS versions.

- **Azure Monitor, tracking VM performance metrics**: **Azure Monitor** is used to track the performance and health of Azure resources but does not directly enforce configuration rules like Azure Policy. It helps with **monitoring** and **diagnostics**, not configuration compliance.

Domain

Describe Azure management and governance

Question 81 Skipped

Is data transfer between Azure services located in two regions free?

○ Yes

Explanation

This statement is incorrect. Data transfer between Azure services located in two regions is not free. Azure charges for data transfer between regions based on the amount of data transferred.

Correct answer

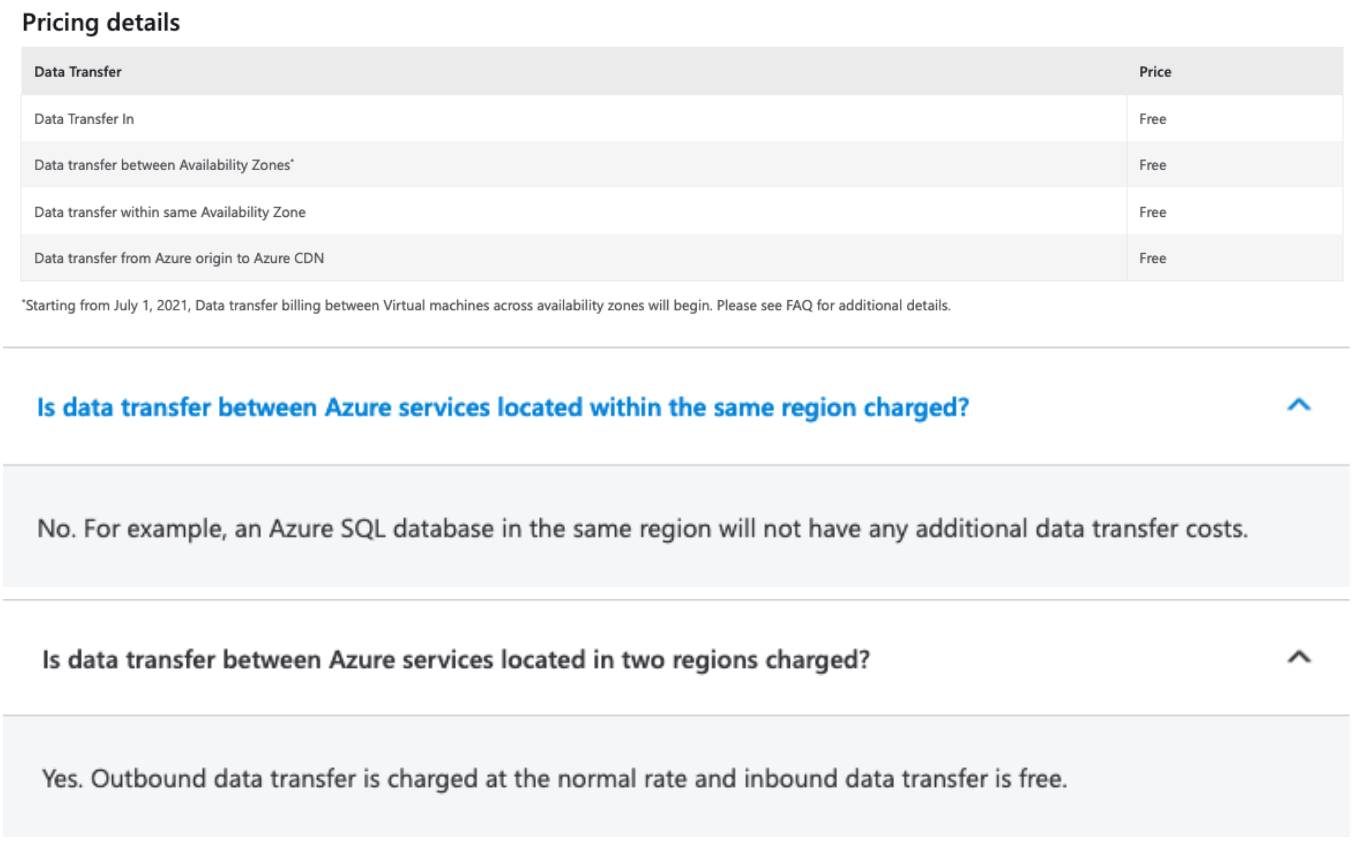
○ No

Explanation

This statement is correct. Data transfer between Azure services located in two regions is not free. Azure charges for data transfer between regions based on the amount of data transferred.

Overall explanation

Outbound data transfer is charged at the normal rate and inbound data transfer is free.



Pricing details

Data Transfer	Price
Data Transfer In	Free
Data transfer between Availability Zones*	Free
Data transfer within same Availability Zone	Free
Data transfer from Azure origin to Azure CDN	Free

*Starting from July 1, 2021, Data transfer billing between Virtual machines across availability zones will begin. Please see FAQ for additional details.

Is data transfer between Azure services located within the same region charged?

No. For example, an Azure SQL database in the same region will not have any additional data transfer costs.

Is data transfer between Azure services located in two regions charged?

Yes. Outbound data transfer is charged at the normal rate and inbound data transfer is free.

References: https://azure.microsoft.com/en-us/global-infrastructure/regions/
https://azure.microsoft.com/en-us/pricing/details/bandwidth/

Domain

Describe Azure management and governance

Question 82 Skipped

Yes or No:

In order to move a VM from one region to another, one must be prepared for a brief downtime.

- ○ **No**

Correct answer

◯ **Yes**

Explanation

Yes, in order to move a VM from one region to another, there will be a brief downtime as the VM needs to be stopped, migrated to the new region, and then started again. During this process, the VM will not be accessible, resulting in downtime for any services running on the VM.

Overall explanation

From the official documentation:

Virtual Machines are resources and can be moved to a new region.

For VMs, **replica** VMs are created in the target region. The source VM is shut down, and some downtime occurs (usually minutes).

Reference: https://learn.microsoft.com/en-us/azure/resource-mover/tutorial-move-region-virtual-machines

Domain

Describe Azure architecture and services

Question 83 Skipped

What information can you input into the TCO calculator to estimate the cost difference between your current datacenter and Azure? (Select all that apply)

Correct selection

☐ **Power costs**

Explanation

Including power costs in the TCO calculator helps in estimating the overall operational expenses associated with running workloads in your current datacenter versus Azure. This information is essential for a comprehensive cost analysis and decision-making process.

Correct selection

☐ **IT labor costs**

Explanation

Factoring in IT labor costs into the TCO calculator enables you to evaluate the impact of personnel expenses on the total cost of ownership when comparing your current datacenter to Azure. Understanding labor costs is important for assessing the financial implications of migrating to the cloud.

Correct selection

☐ **Current infrastructure configuration**

Explanation

Inputting the current infrastructure configuration into the TCO calculator allows you to estimate the cost of running the same workload in Azure compared to your current datacenter. This information is crucial for understanding the potential cost savings or differences when migrating to Azure.

☐ **Subscription type**

Explanation

Subscription type is not a valid input for estimating the cost difference between your current datacenter and Azure using the TCO calculator. While subscription type may influence pricing in Azure, it is not directly related to comparing the overall cost implications of running workloads in your current environment versus Azure.

Overall explanation

- **Current infrastructure configuration -** Correct, the TCO calculator allows you to input your current infrastructure configuration, including servers, databases, storage, and outbound network traffic.

- **Power costs -** Correct, the TCO calculator lets you add assumptions about power costs in your current environment to estimate the cost difference between on-premises and Azure.

- **IT labor costs -** Correct, the TCO calculator allows you to include assumptions about IT labor costs to help estimate the cost difference between your current environment and Azure.

- **Subscription type -** Incorrect, the TCO calculator focuses on comparing on-premises infrastructure costs with Azure Cloud infrastructure costs. Subscription type is not part of the input for the TCO calculator.

Reference: https://learn.microsoft.com/en-us/training/modules/describe-cost-management-azure/3-compare-pricing-total-cost-of-ownership-calculators

Domain

Describe Azure management and governance

Question 84 Skipped

You plan to provision Infrastructure as a Service (IaaS) resources in Azure.

Which of the following is an example of IaaS in Azure?

Correct answer

◯ **Azure Virtual Machine**

Explanation

Azure Virtual Machine is an example of Infrastructure as a Service (IaaS) in Azure. It allows users to provision and manage virtual machines in the cloud, giving them full control over the operating system, applications, and networking configuration.

○ **Azure HDInsight**

Explanation

Azure HDInsight is a Platform as a Service (PaaS) offering in Azure that provides managed Apache Hadoop, Spark, and other big data frameworks. It is not an example of Infrastructure as a Service (IaaS) as it abstracts the underlying infrastructure from the user.

○ **Azure Machine Learning**

Explanation

Azure Machine Learning is a Platform as a Service (PaaS) offering in Azure that provides machine learning capabilities. It is not an example of Infrastructure as a Service (IaaS) as it abstracts the underlying infrastructure from the user.

○ **Azure Event Hubs**

Explanation

Azure Event Hubs is a Platform as a Service (PaaS) offering in Azure that provides a scalable event processing service. It is not an example of Infrastructure as a Service (IaaS) as it abstracts the underlying infrastructure from the user.

Overall explanation

An Azure virtual machine is an example of Infrastructure as a Service (**IaaS**).

Azure Machine Learning, Azure Event Hubs, Azure HDInsight are all examples of **Platform as a Service** (**Paas**)

References:

https://azure.microsoft.com/en-gb/overview/what-is-iaas/

https://azure.microsoft.com/en-gb/overview/what-is-paas/

https://techcommunity.microsoft.com/t5/educator-developer-blog/getting-started-with-windows-azure-series-1-overview/ba-p/378385

Domain

Describe Cloud Concepts

Question 85 Skipped

A company deploys a web application on a cloud platform and is reviewing responsibilities with their provider. They manage the application code and data, while the provider handles the physical hardware and virtualization layer. Which aspects of the shared responsibility model are evident in this scenario?

Correct answer

◯ **The provider ensures the availability of the underlying infrastructure**

Explanation

The provider ensures the availability of the underlying infrastructure is evident in this scenario. The provider is responsible for ensuring that the physical hardware and virtualization layer are available and functioning properly to support the customer's web application.

◯ **The customer is responsible for securing the physical data center**

Explanation

Wrong - Customers don’t secure physical data centers; that’s the provider’s role.

◯ **The provider secures the application and its data**

Explanation

Wrong - Application and data security are the customer’s responsibility, not the provider’s.

○ **The customer manages the operating system and patching**

Explanation

OS management depends on the service type (e.g., IaaS vs. PaaS); here, it's unspecified but implied as PaaS, where the provider handles it.

Domain

Describe Cloud Concepts

Question 86 Skipped

An IT manager compares cloud pricing models for a new project. One option charges based on actual CPU usage per minute, while another requires prepaying for a year of reserved capacity at a discount. Which comparison BEST reflects these pricing models?

○ **Consumption-based guarantees lower costs, while reserved capacity ensures high availability**

Explanation

Wrong: Consumption-based costs vary, not always lower; availability isn't tied to pricing.

○ **Consumption-based offers predictability, while reserved capacity offers flexibility**

Explanation

Wrong: Consumption-based isn't predictable; reserved capacity isn't flexible.

Correct answer

○ **Reserved capacity reduces costs for consistent workloads, while consumption-based suits variable demand**

Explanation

This comparison accurately reflects the differences between reserved capacity and consumption-based pricing models. Reserved capacity is more cost-effective for workloads with consistent usage patterns as it allows prepayment at a discounted rate, while consumption-based pricing is better suited for variable demand scenarios where actual usage determines costs. Therefore, this choice is correct in highlighting the cost-saving benefits of reserved capacity for consistent workloads and the flexibility of consumption-based pricing for variable demand.

◯ **Reserved capacity is usage-driven, while consumption-based is fixed-cost**

Explanation

Wrong: Reverses the definitions; reserved is fixed, consumption is usage-driven.

Overall explanation

The best comparison between the two cloud pricing models is: **Reserved capacity reduces costs for consistent workloads, while consumption-based suits variable demand.**

Here's why:

- **Consumption-based pricing**: This model charges based on actual resource usage, such as **CPU usage per minute**. It's ideal for **variable or unpredictable demand**, as the organization only pays for what they use. This model provides flexibility and is cost-effective for workloads that don't have consistent resource needs.

- **Reserved capacity pricing**: This model requires the organization to **prepay for a year of reserved capacity at a discount**. It is most suitable for **consistent workloads** that require predictable resources over time. By reserving capacity in advance, businesses can save money compared to paying for on-demand usage, making it more cost-effective for predictable, long-term needs.

Why the other options aren't as ideal:

- **Consumption-based offers predictability, while reserved capacity offers flexibility**: This is incorrect because **consumption-based pricing** is variable and less predictable, while **reserved capacity** offers more predictability by locking in resources at a discounted rate.

- **Consumption-based guarantees lower costs, while reserved capacity ensures high availability**: While **consumption-based pricing** may lead to lower costs for variable workloads, it doesn't necessarily guarantee lower costs. **Reserved capacity** doesn't directly ensure high availability—it focuses more on cost savings for predictable workloads.

- **Reserved capacity is usage-driven, while consumption-based is fixed-cost**: This is incorrect because **reserved capacity** is not usage-driven—it's based on a commitment to a specific amount of resources for a certain period (e.g., a year), whereas **consumption-based** pricing is indeed usage-driven.

Domain

Describe Cloud Concepts

Question 87 Skipped

A healthcare provider uses Azure to manage patient data, needing to ensure compliance with privacy regulations across all resources and unify governance for data stored in Azure SQL and external SaaS apps. Which Azure tools address these governance needs? (Select all that apply.)

Correct selection

☐ **Azure Policy**

Explanation

Azure Policy is a service in Azure that allows organizations to create, assign, and manage policies to enforce compliance with corporate standards and regulations. It can be used to govern data stored in Azure SQL and external SaaS apps by defining and enforcing rules and regulations.

Correct selection

☐ **Microsoft Purview**

Explanation

Microsoft Purview is a data governance tool in Azure that helps organizations discover, classify, and manage sensitive data across on-premises, cloud, and SaaS applications. It provides a unified view of data assets and helps ensure compliance with privacy regulations.

☐ **Azure Arc**

Explanation

Azure Arc is a tool that extends Azure management and services to any infrastructure, including on-premises, multi-cloud, and edge environments. While it provides unified management, it is not specifically designed to address data governance needs for Azure SQL and external SaaS apps.

☐ **Azure Resource Manager**

Explanation

Azure Resource Manager is the deployment and management service in Azure that allows users to create, update, and delete resources in a resource group. While it helps with resource management, it does not directly address data governance needs for Azure SQL and external SaaS apps.

Overall explanation

The Azure tools that address the healthcare provider's governance and compliance needs are:

Microsoft Purview, for unified data governance and compliance

- **Correct**. **Microsoft Purview** is a unified data governance solution that helps organizations manage and govern data across their entire data estate, both on-premises and in the cloud. It includes capabilities for ensuring **compliance**with **privacy regulations** (such as GDPR, HIPAA) by providing data discovery, classification, and sensitive data management. This would help the healthcare

provider ensure compliance with privacy regulations for **patient data**stored in Azure SQL and external SaaS apps.

Azure Policy, for enforcing resource compliance rules

- **Correct**. **Azure Policy** is used to define and enforce governance rules and ensure compliance with organizational standards. This tool allows the healthcare provider to create policies that **enforce compliance** across Azure resources, ensuring that they follow privacy regulations and security standards. It can be used to enforce rules related to data residency, encryption, and other compliance-related requirements.

Azure Arc, for managing on-premises servers

- **Incorrect**. **Azure Arc** is primarily used for managing **on-premises** and **multicloud** resources and extends Azure services and management to **non-Azure** environments (such as on-premises servers, Kubernetes clusters, or external clouds). While it may be part of a broader governance strategy, it is not directly related to **unifying governance for data stored in Azure SQL and external SaaS apps**.

Azure Resource Manager, for deploying resource templates

- **Incorrect**. **Azure Resource Manager (ARM)** is used for managing and organizing Azure resources (such as virtual machines, storage accounts, and networks) through resource groups and **templates**. While it plays an essential role in **resource management**, it does not directly focus on **data governance** or ensuring **compliance with privacy regulations**.

Domain

Describe Azure management and governance

Question 88 Skipped

Please fill the blank field(s) in the statement with the right words.

A sysadmin accesses a web-based interface to monitor Azure VMs, create storage accounts, and review cost reports, all from a single pane of glass. This centralized management is enabled by the Azure __.

Correct answer

portal

Explanation

The correct answer is: **Azure Portal**

The **Azure Portal** provides a **web-based interface** that serves as a **centralized management platform** for accessing and managing Azure resources. It allows sysadmins to monitor virtual machines (VMs), create and configure storage accounts, review cost reports, and perform a variety of other tasks—all from a single, unified dashboard, often referred to as a **single pane of glass**.

Domain

Describe Azure management and governance

Question 89 Skipped

Yes or No:

Every Azure region is composed of a set of datacenters.

○ **No**

Correct answer

○ **Yes**

Explanation

Yes, every Azure region is indeed composed of a set of datacenters. These datacenters are strategically located around the world to provide redundancy, scalability, and high availability

for Azure services and resources. Each region consists of multiple datacenters to ensure data resilience and minimize downtime.

Overall explanation

A region is a set of **datacenters** deployed within a latency-defined perimeter and connected through a dedicated regional low-latency network. Each Azure region has a minimum of `three` availability zones.

What is an Azure region?

An Azure region is a set of datacenters, deployed within a latency-defined perimeter and connected through a dedicated regional low-latency network.

With more global regions than any other cloud provider, Azure gives customers the flexibility to deploy applications where they need. An Azure region has discrete pricing and service availability.

What is an Azure datacenter?

Azure datacenters are unique physical buildings—located all over the globe—that house a group of networked computer servers.

What are Azure Availability Zones?

Azure Availability Zones are unique physical locations within an Azure region and offer high availability to protect your applications and data from datacenter failures. Each zone is made up of one or more datacenters equipped with independent power, cooling, and networking.

The physical separation of availability zones within a region protects apps and data from facility-level issues. Zone-redundant services replicate your apps and data across Azure Availability Zones to protect from single points of failure.

Reference: https://azure.microsoft.com/en-us/global-infrastructure/

Domain

Describe Azure architecture and services

Question 90 Skipped

Please fill the blank field(s) in the statement with the right words.

A finance team applies metadata labels to Azure resources, enabling them to allocate expenses to specific departments and projects for better cost tracking. This leverages the Azure feature known as __.

Correct answer

tags

Explanation

The Azure feature being leveraged in this scenario is: **Azure Tags**

- **Azure Tags** are used to apply **metadata labels** to Azure resources, which allows organizations to categorize and organize resources based on specific criteria (e.g., department, project, cost center).
- These tags can be used for **cost allocation**, **management**, and **reporting** purposes. In this case, the finance team is applying tags to track and allocate expenses to specific departments and projects, improving cost transparency and management.

Domain

Describe Azure management and governance