**Learning Path 1: Cloud Concepts**

1. What Microsoft Azure object contains multiple datacenters that are connected by a low-latency network?

Select the correct option.

a. A geography

b. **A region (correct answer)**

c. An availability set

d. A pair

2. Availability sets are made up of which of the following?

Select all that apply.

a. **Update domains (correct answer)**

b. Region pairs

c. **Fault domains (correct answer)**

d. A geography

3. Which of the following statements about virtual machines (VMs) and containers is true?

Select all that apply.

a. All VMs share the same operating system instance.

b. VMs are isolated from the host hardware, while containers are not.

c. **All containers share the same operating system instance. (correct answer)**

d. **VMs and containers are isolated from the host hardware. (correct answer)**

4. Availability Zones allow customers to run mission-critical applications with what benefits?

Select all that apply.

a. **High availability (correct answer)**

b. **Low-latency replication (correct answer)**

c. Offsite backup

d. Live migration

5. What strategy employs a series of mechanisms to slow the advance of an attack aimed at acquiring

unauthorized access to data?

Select the correct option.

a. Ciphertext

b. Blob security

c. Network security layers

d. **Defense-in-depth (correct answer)**

6. Which layer of Defense-in-depth is focused on preventing network-based attacks?

Select the correct option.

a. Data layer

b. Identity and Access layer

c. **Perimeter layer (correct answer)**

d. Compute laye

7. What is cloud computing?

1. **Delivery of computing services over the internet.**
2. Delivery of storage services over the internet.
3. Delivery of websites accessible via the internet.
4. Cloud computing is the delivery of computing services over the internet.

8. Which cloud model uses some datacenters focused on providing cloud services to anyone that wants them, and some data centers that are focused on a single customer?

1. Public cloud
2. **Hybrid cloud**
3. Multi-cloud

The hybrid cloud model is a combination of public cloud and private cloud, using both datacenters dedicated solely to one customer and datacenters that are shared with the public.

9. According to the shared responsibility model, which cloud service type places the most responsibility on the customer?

1. **Infrastructure as a Service (IaaS)**
2. Software as a Service (SaaS)
3. Platform as a Service (PaaS)

IaaS places the most responsibility on the consumer, with the cloud provider being responsible for the basics of physical security, power, and connectivity.

10. Which type of scaling involves adding or removing resources (such as virtual machines or containers) to meet demand?

1. Vertical scaling
2. **Horizontal scaling**
3. Direct scaling

11. What is characterized as the ability of a system to recover from failures and continue to function?

1. **Reliability**
2. Predictability
3. Scalability

**Descriptive questions**

1. A client wants to deploy their web application and associated data to the cloud with minimal configuration.

Which cloud service type is suitable for this and why?

Answer: (**Should include the PaaS cloud service type as being suitable as it provides minimal configuration for deploying and publishing code**)

2. What important cloud attribute allows businesses and organizations to quickly grow their virtual machine infrastructure as their workloads increase, and how is it achieved?

Answer: (**Should include a statement on scalability and how it can be achieved through the use of virtual machine scale sets**)

3. What are the main differences between public and private clouds?

Answer: (**Should include a statement indicating a private cloud enables the owner to have full control over everything including hardware, while a public cloud is owned by the cloud vendor**)

4. A developer wants to deploy their application code to the cloud and needs access to the operating system to install custom software. Which is the best cloud service type to use in this case and why?

Answer: (**Should include a statement that indicates IaaS is the most suitable as it provides access to an underlying operating system to install custom software**)

5. What are the main differences between OpEx and CapEx? Give an example of each.

Answer: (**Should include a statement that says OpEx has no up-front costs and can scale to meet unpredictable demand. A simple OpEx example could be a web service running on PaaS instead of on-premises server hardware. Additionally, CapEx should be briefly defined as an up-front cost an organization may invoke to purchase physical assets such on-premise server hardware. An example of which could be a large Storage Area Network (SAN)** )

**Learning Path 2: Azure Architecture and Services**

Multiple choice questions

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b. Identity and Access layer

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d. Compute layer

**Descriptive questions**

1. What can a company do to help ensure data redundancy when using Azure Blob storage?

Answer: (**Should include a statement that describes Locally Redundant Storage (LRS) and Zone Redundant Storage options and the pros/cons of each**)

2. Describe what a resource group is on Azure and give an example of best practice when using a resource group.

Answer: (**Should include a statement that describes a resource group as a container of related resources for an Azure solution. It is best practice to add resources to the group that share the same lifecycle, such as a web application with data storage**)

3. Describe what an availability zone is on Azure and what availability zones are used for.

Answer: (**Should include a statement that describes an availability zone as a service that protects applications from datacenter failures. An example could be to ensure 99.99% SLA uptime of a web service if it deployed as part of an availability zone**)

4. What is the main benefit to a developer when using Azure Functions?

Answer: (**Should include a statement that says Azure Functions allow developers to run small pieces of code without worrying about any of the underlying application infrastructure – they are very quick to deploy and publish**)

5. In the context of the network layer in defense-in-depth, name and describe two actions that will help secure cloud resources.

Enter your answer in the following space.

Answer: (**Should include a statement that mentions two or more of the following: limit communication between resources, deny access by default, restrict inbound internet traffic, and implement secure connectivity to on-premise networks. Essentially the focus at this layer is limiting networking connectivity across cloud resources to reduce the risk of an attack spreading through the network**)

6. In what scenario would the Azure Blob immutable storage feature be useful?

Enter your answer in the following space.

Answer: (**Should include a statement that mentions sectors such as Healthcare or Finance where data modification is strictly regulated**)

**Learning Path 3: Management and Governance**

1. What defines the set of controls that are recommended for resources within a specified subscription or resource group?

Select the correct option.

a. Symmetric policy

b. Secure score

c. **Azure Policy (correct answer)**

d. Asymmetric policy

2. If you want to prevent accidental deletion of an Azure resource, which of the following options should you use?

Select the correct option.

a. MFA

b. Azure Tags

c. **Azure Resource Locks (correct answer)**

d. Azure Policy

3. Which feature of Azure would you use to help logically organize resources into a taxonomy?

Select the correct option.

a. Azure Resource Locks

b. Azure Advisor

c. Azure Policy

d. **Azure Tags (correct answer)**

4. The Azure Pricing Calculator provides:

Select the correct option.

a. A bill for the selected configurations of products and services used in the past month.

b. A means to save money by committing to selected configurations of products and services over one or three years.

c. **An estimate of the costs associated with selected configurations of products and services. (correct answer)**

d. A tool to compare on-premise costs to Azure products and services.

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