# CompTIA Cloud Essentials+ - Quiz Questions with Answers

## 1.0: Cloud Concepts



**1.**

What is a concern regarding vertically scaling up?

**Cloud computing costs**

Bandwidth (network performance)

Storage consumption

Access to available resources

*Correct answer: Cloud computing costs*

*A significant challenge with vertical scaling is the rise in cloud computing costs. While resizing cloud-based virtual machines to add more CPUs and RAM can improve application performance, it can also increase the cost of running the VMs. Scale up only as necessary. Bandwidth, storage consumption, and access to available resources are incorrect. However, they may be of concern to other cloud computing characteristics.*

**2.**

In spite of your private cloud's outstanding effectiveness, it is in desperate need of an upgrade. What would be the BEST way to scale the cloud horizontally?

**Add more hosts**

Add RAM to a VM

Take away RAM from a VM

Add more VMs

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*Correct answer: Add more hosts*

*Adding additional hosts is referred to as horizontal scaling, which involves the addition of physical servers.*

*Adding additional VMs or changing RAM to a VM would merely shift resources without increasing the private cloud's overall size. Vertical scaling is a term that refers to the process of increasing or upgrading resources on a host, such as memory or CPU.*

**3.**

To establish a secure point-to-point connection via the Internet, which of the following cloud technologies is utilized?

- **VPN**
- RDP
- SSH
- HTTPS

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*Correct answer: VPN*

*Virtual private networks (VPNs) provide secure tunnels between two endpoints across an untrusted network, such as the internet. VPNs allow secure data transmission. The other options are incorrect. They are cloud protocols and services, but are not closely related to secure point-to-point connections.*

**4.**

Which cloud technology allows the creation of storage volumes from a collection of physical devices?

**SDS**

SDN

CDN

SSH

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*Correct answer: SDS*

*As opposed to traditional computing devices which are limited by the number of drives connections the computer has, cloud storage supports software-defined storage (SDS). SDS separates the actual storage of data from the logical control over drive configuration, making it independent of the underlying hardware platform. As a result, storage volumes can be built from a combination of physical storage devices.*

**5.**

Which cloud self-service access methods are BEST for automation?

- **API & CLI**
- API
- PowerShell
- CLI
- SDK
- PowerShell & CLI

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*Correct answer: API & CLI*

*Automation and reproducibility are facilitated by API and CLI access to cloud resources.*

**6.**

The act of increasing or decreasing CPU and RAM to improve application performance is referred to as:

**vertical scaling.**

horizontal scaling.

scaling out.

scaling in.

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*Correct answer: vertical scaling.*

*Vertical scaling is the act of increasing or decreasing CPU and RAM to improve application performance. Scaling up and scaling down are two concepts of vertical scaling. The act of increasing CPU and RAM to improve application performance is referred to as scaling up. The act of decreasing CPU and RAM when the application performance has returned to its normal baseline is referred to as scaling down. Horizontal scaling, scaling in, and scaling out are incorrect. Horizontal scaling is an option to add or remove a virtual machine in response to a changing application. Scaling out and scaling in are concepts of horizontal scaling.*

**7.**

The following features characterize what type of cloud storage?

- Files are stored as sectors on a drive
- Format of virtual machine disks
- VMs and servers use this type of storage
- Databases will store files on this type of storage
- Storage is in a hierarchical structure for retrieval

**Block storage**

Object storage

File storage

SSD storage

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*Correct answer: Block storage*

*Block storage is a type of storage in which all information is stored in equal-sized blocks on disks. It is more efficient and effective than file storage in general and is utilized in databases and virtual machines. The above-mentioned characteristics are those of block storage.*

## 8.

The process of tagging cloud resources with identifiers that allow them to be categorized and grouped into logical units is called:

**Resource tagging**

Bootstrapping

API

Maintenance

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*Correct answer: Resource tagging*

*By tagging resources, you will be able to identify which resource belongs to which department. Resource tagging applies a small amount of metadata to the resource for identification purposes.*

*Bootstrapping, API, and maintenance are incorrect. Bootstrapping is the use of incremental improvements. APIs are functions that can be called programmatically.*

**9.**

Apart from compression, what technologies can be leveraged to save businesses thousands of dollars per year in storage costs when dealing with massive data sets?

**Deduplication**

Capacity on demand

CDN

SDN

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*Correct answer: Deduplication*

*Deduplication conserves storage space by eliminating redundant copies of files. Deduplication ensures that only one copy of data is stored. For all other situations, a tiny pointer file pointing to the original will be produced. Additionally, compression conserves space by removing redundant data within a file but does not eliminate redundant copies.*

**10.**

In regard to SaaS cloud computing, which of the following is NOT a risk?

**Insufficient skills**

Data security

Internet connection to use and save data

Limited web apps available

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*Correct answer: Insufficient skills*

*As the vendor manages all aspects of Software as a Service (SaaS) deployments, you do not have to worry about insufficient skill sets among administrators.*

*All other options are risks associated with SaaS cloud computing.*

## 11.

Which network component would be utilized to provide direct connection between an on-premise network and cloud resources?

- **VPN**
- RDP
- SSH
- Load balancer

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*Correct answer: VPN*

*Virtual private networks (VPNs) provide secure tunnels between two endpoints across an untrusted network, such as the internet. VPNs allow secure data transmission. The other options are incorrect.*

## 12.

A cloud systems administrator configured autoscaling for an application. The configuration keeps a baseline minimum of three virtual machines running but can grow to seven virtual machines if a CPU threshold is met. In terms of scalability, what is it called when you add additional virtual machines to support a busy application?

- **Scaling out**
- Scaling in
- Scaling up
- Scaling down

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*Correct answer: Scaling out*

*Horizontal scaling is the act of adding or removing a virtual machine in response to a changing application. Scaling out and scaling in are two concepts of horizontal scaling. The act of adding a virtual machine in response to a busy application is referred to as scaling out. Scaling in, up, and down are incorrect. Scaling up and scaling down are concepts of vertical scaling. Scaling in is the opposite of scaling out.*

**13.**

After a complete interruption of mission-critical business functions, the data recovery team must restore normal company operations. Which policy or procedure should be followed by the team?

**Disaster recovery plan**

Department specific policy

Incident Response policy

Access and control policy

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*Correct answer: Disaster recovery plan*

*The disaster recovery plan is the procedure utilized to resume normal business operations in the event that mission-critical business services are completely disrupted. When mission-critical business functions are fully lost as a result of an occurrence, the disaster recovery plan is activated.*

*All other options are policies and procedures that do not apply to this scenario.*

**14.**

Which of the following RAID levels would provide fault tolerance for more then 3 disks while consuming the SAME amount of disk space as a single disk?

- **RAID 5**
- RAID 1
- RAID 0
- RAID 1+0

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*Correct answer: RAID 5*

*RAID 5 makes use of distributed parity and striping. Parity is the information used to recover from errors, which means that even if one drive fails, the data remains intact. As a result, the parity information is used to reconstruct data that was lost when a disk in the array failed.*

*All other RAID options are incorrect because they do not provide disk striping with distributed parity.*

**15.**

Your organization may need to increase or decrease resources in response to a workload. You need to add resources to support a workload or improve the capability of an existing resource to manage an increase in demand. Additional resources do not have to be provided automatically. Which cloud functionality does this particular situation require?

**Scalability**

Elasticity

High availability

Fault tolerance

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*Correct answer: Scalability*

*In these circumstances, scalability is required. This feature allows for the expansion (scaling-up) or retraction (scaling-down) of the resources assigned to a workload. As demand grows, you can augment existing resources or skills to manage the increase (known as scaling up). Automatic scalability is not required. Elasticity, high availability, and fault tolerance are other cloud computing characteristics and advantages; however, they are incorrect.*

## 16.

When you create a new Azure VNet, virtual machines are automatically deployed into subnets inside that VNet and are capable of resolving names of other subnet resources as well as internet names.

Which network protocol enables this?

- **DNS**
- SSH
- HTTPS
- RDP

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*Correct answer: DNS*

*The network protocol that enables the resolving of names of other subnet resources as well as internet names is Domain Name System (DNS).*

*Secure Shell (SSH) is a protocol for managing Linux hosts. HTTPS is a protocol for connecting clients to web servers. RDP is a protocol for the management of Windows hosts.*

## 17.

An international security hardware and software solution provider needs to ensure all of its partners and resellers can access product offerings and technical documentation quickly and on-demand. What should the security solution provider implement to enable this?

**CDN**

SDN

SDS

VPN

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*Correct answer: CDN*

*The security solution provider should deploy a Content Delivery Network (CDN) to guarantee that all of its partners and resellers have immediate and on-demand access to product offerings and technical documentation from anywhere in the world. A CDN is similar to online content load balancing. It utilizes edge servers to duplicate data stored on the web server, delivering it to users located closer to the edge server than the web server.*

**18.**

Which of the following is another name for a Type 1 hypervisor?

**Bare metal hypervisor**

Hosted hypervisor

Virtual box hypervisor

Virtual PC

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*Correct answer: Bare metal hypervisor*

*A bare metal hypervisor is another name for Type 1 hypervisor. This is because the software runs directly on the hardware, or "metal", without an operating system.*

*Hosted hypervisor, virtual box hypervisor, and virtual PC are incorrect. Hosted hypervisor is another name for a Type 2 hypervisor. Virtualbox hypevisor and Virtual PC are brand names for Type 2 hypervisors.*

**19.**

Cloud customers are spared from needing detailed network hardware configuration knowledge when configuring cloud network components due to why type of networking?

**SDN**

SDS

CDN

SSH

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*Correct answer: SDN*

*Software-Defined Networking (SDN) enables the creation of virtual networks that do not require any hardware, similar to how a virtual machine does not require any one-to-one hardware relation. SDNs are theoretically a software layer that sits between user interfaces and the underlying networking devices. When configuring cloud-based network resources, users are not required to have device-specific technical knowledge.*

**20.**

Regarding customers of public cloud deployments, which of the following statements is TRUE?

**Public cloud customers have access to only service providers' off-the-shelf offerings.**

Public cloud customers are accountable for maintenance of the cloud infrastructure.

Public cloud customers have access to a service that is controlled by only their organization.

Public cloud customers incur significant capital expenditures.

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*Correct answer: Public cloud customers have access to only service providers' off-the-shelf offerings.*

*Any type of cloud environment that is available to the broader public is considered a public cloud deployment model. As a result, the customer is simply offered the CSP's services and infrastructure. In contrast, services that are controlled by only one organization are part of the private cloud. Maintenance of infrastructure is handled by the cloud provider, not the cloud customer. Cloud usage is associated with operating expenses but not typically significant capital expenses.*

**21.**

What type of storage media uses spinning disk platters and stores data magnetically?

- **HDD**
- SSD
- RAM
- Tape drive

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*Correct answer: HDD*

*A Hard Disk Drive (HDD) storage uses spinning disk platters and stores data magically. This type of storage media has moving parts. HDD are considered slower and more cost-effective than their counterparts.*

**22.**

How can cloud resources be accessed via self-service?

**All of these**

GUI

API

CLI

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*Correct answer: All of these*

*Most major cloud service providers offer access to cloud resources via GUI (Graphical User Interface), CLI (Command-Line Interface), and API (Application Programing Interface).*

**23.**

A system administrator defined a virtual network in the cloud and would like to configure it with limited or where no network traffic can enter or leave that virtual network. What would be the BEST way to configure the new virtual network?

**Configure firewall rules and modify the route table**

Set up a VLAN and firewall rules

Configure the network VMs to use multiple NICs.

Implement a site to site VPN

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*Correct answer: Configure firewall rules and modify the route table*

*The ideal method for setting the new virtual network is to configure incoming and outgoing firewall traffic rules, as well as to modify routing table entries to restrict traffic from being routed into or out of the network. While creating a VLAN, defining firewall rules, and deploying a site to site VPN are all possible possibilities, for the sake of simplicity and avoiding excessive resource consumption, these would not be the greatest configuration options for the virtual network. Provisioning the network's VMs with multiple NICs is not an appropriate approach.*

**24.**

A self-service portal in the cloud used to provision servers, storage, and databases is an example of which characteristic?

**On-demand access**

Pay-as-you-go

Scalability

Broad network access

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*Correct answer: On-demand access*

*A virtual environment can be created dynamically by utilizing on-demand cloud computing, allowing the consumer to continuously add and update resources via a web portal. On-demand access can also be referred to as self-service, as mentioned in the question.*

*Pay-as-you-go allows charges to cloud customers to be based on the time period and computing resources used by the cloud. Scalability allows the amount of computing resources being used to change in response to changing needs. Broad network access means the cloud can be accessed by a wide variety of devices.*

**25.**

The primary objective of disaster recovery is ensuring that data is available following the restoration of mission-critical services. Which of the following defines the maximum amount of acceptable data loss following disaster recovery?

**RPO**

RTO

MTTR

DRP

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*Correct answer: RPO*

*During disaster recovery, data loss is handled by comprehending the Recovery Point Objective (RPO). The maximum amount of data loss that can be suffered before the loss becomes too significant for an organization to endure is referred to as RPO. RPO is calculated on the basis of time. Whatever the RPO of the organization, a backup and recovery strategy should be developed and implemented to ensure that recovery attempts can restore data to a point that is less than the RPO of the organization.*

*RTO or Recovery Time Objective measures the maximum amount of acceptable downtime. MTTR or Mean Time to Repair measures the average time it takes to repair a service or component. DRP or Disaster Recovery Plan is a document that outlines processes in place during disaster recovery.*

## 26.

Which of the following ways is NOT how a business can reduce expenses using the cloud?

**Proprietary software**

Reserved instances

Spot instances

BYOL

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*Correct answer: Proprietary software*

*Proprietary software is software that is owned by an organization and is not freely available. This is contrasted with open-source software, i.e., freely available software.*

*Reserved instances reduce costs because they are offered by cloud providers at a steep discount in exchange for preplanning on the part of a cloud customer. Spot instances reduce costs because they are offered by cloud providers at a steep discount in exchange for time flexibility on the part of a cloud customer. Bring Your Own License (BYOL) reduces costs by eliminating the need to repay licensing fees.*

**27.**

If multiple clouds perform the same or specific tasks, this is known as a:

**multi-cloud.**

public cloud.

hybrid cloud.

community cloud.

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*Correct answer: multi-cloud.*

*Occasionally, cloud computing will refer to a multi-cloud environment. As the name implies, it refers to the deployment of many clouds within a single business. This is not synonymous with hybrid cloud, which refers to the use of several deployment models within a single cloud. Multi-cloud entails utilizing different clouds for distinct services.*

**28.**

Which of the following would be most likely to involve chargeback?

**Private clouds**

Public clouds

SSD

Win32 APIs

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*Correct answer: Private clouds*

*Private clouds are often priced under a chargeback structure. Chargeback involves departments in an organization being charged for their usage of the cloud. This can be accomplished with resource tagging.*

**29.**

What is the MAIN benefit of a Content Delivery Network (CDN)?

**Speed**

Enhanced control over network traffic

Distributed tasks

Network topology

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*Correct answer: Speed*

*Speed makes your website faster by serving files from a location closer to the user. CDNs shorten the path between the user and the content, or the server that hosts the content. End-points of the CDN are located close to each area where users congregate to minimize the time required for each user to access the website.*

**30.**

How are dynamic allocation and re-allocation implemented in cloud computing to handle demand requirements?

**Elasticity and resource pooling**

Availability and scalability

Pay-as-you-go and broad network access

Metered usage and self-service

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*Correct answer: Elasticity and resource pooling*

*Elasticity and resource pooling are the mechanisms through which cloud computing implements dynamic allocation and re-allocation to meet demand requirements. In the cloud, elasticity is the dynamic provisioning and deprovisioning of resources to meet demand. The cloud providers' resources are seen as a large pool that can be divided up among clients as needed. This is called rapid elasticity.*

*Availability, scalability, pay-as-you-go, metered usage, self-service, and broad network access are cloud characteristics but are not the best options.*

**31.**

To improve performance and resilience against disk failure, how do cloud service providers configure their dedicated Storage Area Networks (SANs)?

**RAID**

GRS

SDS

Managed disks

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*Correct answer: RAID*

*To improve performance and resilience against disk failure, cloud service providers configure their dedicated Storage Area Networks (SANs) to use RAID. Redundant Array of Independent Disks (RAID) is the grouping of multiple physical disks to enhance data redundancy and/or disk performance. RAID comes in many levels, most common being RAID 0, RAID 1, RAID 5.*

## 32.

Which of the following is a defined set of processes that outlines how an organization recovers and safeguards its information technology infrastructure in the event of a disaster?

**DRP**

MTTR

RPO

RTO

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*Correct answer: DRP*

*A DRP (disaster recovery plan) describes an organization's recovery strategy in the aftermath of a catastrophic incident. A DRP is thorough and may be applied to a single information technology system or asset. The DRP outlines specific actions to take in order to resume company activities as soon as feasible.*

*MTTR, RPO, and RTO are incorrect. Mean time to repair (MTTR) is the average amount of time it takes to get a downed service functioning again. Recovery point objective (RPO) is the maximum amount of acceptable data loss. Recovery time objective (RTO) is the maximum amount of acceptable down time.*

**33.**

Cloud storage runs on a solution that features scalability, transparency, a standard interface and diverse storage type support. What storage technology is being referred to?

**SDS**

SDN

CDN

SSH

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*Correct answer: SDS*

*A good Storage-Defined Storage (SDS) solution will have the following features:*

- *Customers should be able to scale both the quantity of storage available to them and the underlying hardware without experiencing any performance concerns or downtime. Client scalability should be automatic.*
- *The amount of storage space is available and the cost of the storage should be transparent to administrators.*
- *Management and maintenance of SDS should be easy for administrators.*
- *SDS should support applications written for object, file or block storage.*

**34.**

Your organization needs to select a storage solution for the structured databases they are moving to the cloud but still need to be able to quickly access. What is the BEST cloud storage option?

**Hot block storage**

Cold block storage

Hot object storage

Cold object storage

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*Correct answer: Hot block storage*

*Block storage is the optimal choice for cloud databases. For structured data, block storage is faster, while object storage is better for unstructured data. Hot storage is designed to be constantly accessible. It is more expensive than cold storage but provides significantly faster access. As a result, hot block storage is the optimal cloud storage solution for your organization's cloud databases.*

## 35.

A cloud systems administrator configured autoscaling for an application. The configuration is set to add additional CPU to the virtual machine if the CPU threshold hits 80%.

In terms of scalability, what is it called when you increase CPU once it meets a certain threshold?

- **Scaling up**
- Scaling down
- Scaling in
- Scaling out

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*Correct answer: Scaling up*

*Vertical scaling is the act of increasing or decreasing CPU and RAM to improve application performance. Scaling up and scaling down are two concepts of vertical scaling. The act of increasing CPU to improve application performance when it meets a certain threshold is referred to as scaling up.*

*Scaling down, in, and out are incorrect. Scaling in and out are concepts of horizontal scaling. Scaling down is the opposite of scaling up.*

## 36.

Your organization intends to leverage the PaaS model in order to create new software applications, deploy new virtual machines, and utilize Microsoft 365. Which of the following is NOT an advantage of the PaaS model?

**Most flexible cloud model**

No CapEx

Applications run without having to configure servers

Customized vendor development tools

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*Correct answer: Most flexible cloud model*

*Platform as a Service (PaaS) has platform constraints. Because you do not have complete control over the hardware chosen by the vendor, there may be limitations, making this not the most flexible cloud option.*

*The following are advantages in a PaaS model:*

- *No CapEx*
- *Applications run without having to configure the servers*
- *Customizable vendor development tools*

## 37.

A cloud systems administrator configured autoscaling for an application. The configuration keeps a minimum of three virtual machines running but can grow to seven virtual machines if a CPU threshold is met.

In terms of scalability, what is it called when you increase additional virtual machines to support a busy application?

- **Scaling out**
- Scaling in
- Scaling up
- Scaling down

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*Correct answer: Scaling out*

*Horizontal scaling is the act of adding or removing a virtual machine in response to a changing application. Scaling out and scaling in are two concepts of horizontal scaling. The act of increasing virtual machines when a CPU threshold is met is referred to as scaling out.*

*Scaling in, up, and down are incorrect. Scaling up and scaling down are concepts of vertical scaling. Scaling in is the opposite of scaling out.*

**38.**

An administrator creates a username and password for a Mac user to access a Windows computer via RDP. What is the first step to get the user connected?

**Download the RDP client app from the Mac App Store**

Sign in via the native RDP app on the Mac computer

Configure firewall settings on the Mac, so the user can access resources

Nothing, they can just connect

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*Correct answer: Download the RDP client app from the Mac App Store.*

*Prior to signing in using Remote Desktop Protocol, the Mac user must download the Microsoft Windows Remote Desktop application from the Mac App Store. All other settings are incorrect and will not enable the Mac user to connect to RDP.*

**39.**

Elasticity within a cloud refers to the ability of the cloud's resources to expand or shrink in response to the client's changing needs. What mechanism does the cloud use to accomplish this?

**Resource pooling**

Self-service

Rapid elasticity

Ubiquitous access

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*Correct answer: Resource Pooling*

*Cloud services must be elastic, which means they must be able to expand or shrink on demand. Cloud computing enables this through the use of resource pooling. The cloud provider's resources are viewed as a single large pool that can be distributed as needed across clients. Rapid elasticity, self-service, and ubiquitous access are incorrect. Rapid elasticity is a function of immediately acquiring additional resources from the resource pool. Self-service and ubiquitous access are related cloud computing characteristics.*

**40.**

Which of the following is the target time period during which recovery should take place?

**RTO**

RPO

MTTR

MTD

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*Correct answer: RTO*

*The Recovery Time Objective (RTO) specifies the time period during which recovery should occur. It should be lower than the maximum tolerable downtime in order to allow for additional time. The Maximum Tolerated Downtime (MTD) is the longest period of time during which you can operate without a resource. The Recovery Point Objective (RPO) is determined by the amount of data lost, not by the amount of time. It is the greatest quantity of information you are willing to lose in an outage.*

*While backups are linked to the RPO, they are also linked to the RTO, which determines the maximum amount of downtime that a service or data may sustain. Bear in mind how they interact, the time required to restore data (RTO) and the frequency with which backups should be conducted (RPO).*

## 41.

There are numerous service models available on the market. They are all variants and combinations of the three most prevalent service models: IaaS, PaaS, and SaaS. What cloud service model tracks the performance of applications, devices, or services within a cloud network?

**MaaS**

CaaS

DBaaS

BPaaS

ITaaS

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*Correct answer: MaaS*

*Monitoring as a Service (MaaS) is a cloud-based service that enables central monitoring of a broad range of devices and software solutions. DBaaS, BPaaS, ITaaS and CaaS are other cloud service models; however, they are incorrect.*

*Note: Candidates are encouraged to review the CompTIA Cloud Essentials+ Acronyms list and attain a working knowledge of all the listed acronyms as a part of a comprehensive exam preparation program.*

**42.**

Storage media is referred to as:

- **nonvolatile.**
- volatile.
- structured.
- unstructured.

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*Correct answer: nonvolatile.*

*Storage media is referred to as nonvolatile. In other words, its data preservation is independent of the computer's steady supply of electricity and is retained when the computer is shut off. In comparison, data stored in random access memory (RAM) is said to be volatile since its retention is contingent on the continuous supply of electricity to the computer and is wiped when the computer is turned off. Both memory and storage media are adjustable in the cloud.*

**43.**

Which of the following statements about the deployment of community clouds is TRUE?

**Customers should share comparable needs**

All controls belong to one organization

Higher costs than private cloud

Public users have access

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*Correct answer: Customers should share comparable needs*

*Community cloud deployments usually address organizations with the same computing needs, most often in the same industry and driven by industry regulations and compliance needs.*

**44.**

Which of the following is a piece of software or hardware that builds and manages virtual machines and enables the simultaneous operation of numerous operating systems on a single physical machine?

- **Hypervisor**
- Virtualization
- Virtual computer
- Host

*Correct answer: Hypervisor*

*A hypervisor is the software component that generates and manages virtual computers, allowing for the coexistence of different operating systems on a single physical machine.*

*The host refers to the physical machine. Virtualization refers to the process of using a hypervisor. Virtual computers, also known as virtual machines, run on the hypervisor.*

**45.**

The following features characterize what type of cloud storage?

- Stores files individually like a normal file system
- No hierarchy like a normal file system
- Not designed for frequent file changes
- Accessed via HTTP or Web call

**Object storage**

File storage

Block Storage

SSD Storage

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*Correct answer: Object storage*

*Object storage is a type of cloud storage in which each piece of data is kept as an object with a unique identifier and associated metadata. Object storage is utilized for unstructured data, such as images and movies, as well as for large data archives, such as computer databases. The characteristics listed above are those of object storage.*

**46.**

Which three options are applicable to the private cloud?

A. Combinations of hybrid clouds working together
B. Are scalable and provide elasticity
C. Incorporating both a hybrid and public cloud
D. Reduced maintenance needs
E. Mitigate public cloud concerns
F. Uses virtualization

**B, E, and F**

A, C, and D

D, E, and F

A, D, and E

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*Correct answer: B, E, and F*

*The three options that apply to private clouds are:*

- *Are scalable and provide elasticity*
- *Can mitigate public cloud concerns*
- *Uses virtualization*

*Reduced maintenance needs applies to public clouds. Combining public clouds and hybrid clouds would make a larger hybrid cloud.*

**47.**

How are VNets or VPCs isolated from the rest of the public cloud?

**Subnets**

ACLs

Route tables

Firewalls

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*Correct answer: Subnets*

*Cloud service providers designate their cloud virtual networks with their own nomenclature. Microsoft Azure refers to VNets, whereas Amazon Web Services refers to Virtual Private Clouds (VPCs). Both VNets and VPCs feature one or more subnets that are utilized for isolation, similar to an on-premises physical network switch that may be partitioned into several VLANs.*

**48.**

Your company wants to upgrade development tools for its in-house applications to the cloud. The requirement is that the company ONLY wants to invest in their developers, developer tools, and applications being built. Which cloud service model should you recommend for this requirement?

**PaaS**

IaaS

CaaS

SaaS

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*Correct answer: PaaS*

*Consumers can install their own applications on a cloud platform using the Platform as a Service (PaaS) service model. The CSP provides the operating system and physical hardware required. This enables consumers to rapidly create their own apps without purchasing the required physical resources and operating system(s). The PaaS model includes the provisioning of computer services, operating systems, networking, storage, and all necessary hardware.*

**49.**

How is disk throughput measured?

**IOPS**

Memory

Data size

Bandwidth

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*Correct answer: IOPS*

*The throughput of a disk is expressed in terms of input/output operations per second (IOPS). IOPS is a unit of measurement that is used to quantify the quantity of data that can be stored on a disk. Increased IOPS results in improved performance but at a higher cost in the cloud.*

**50.**

To avoid downtime, what is a proactive strategy for avoiding single points of failure?

**Redundancy**

High availability

Compression

Deduplication

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*Correct answer: Redundancy*

*Redundancy is a proactive strategy for avoiding single points of failure. Redundancy is a critical component of any strategy for avoiding downtime and ensuring availability, particularly in the cloud.*

*High availability is incorrect because it refers to the overall end goal of redundancy and other DDoS mitigation strategies. Compression and reduplication are incorrect because they refer to storage techniques.*

**51.**

Cloud service providers monitor customer use and charge accordingly. What does this illustrate?

**Pay-as-you-go**

Self-service

High availability

Broad network access

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*Correct answer: Pay-as-you-go*

*Cloud service providers monitor their clients' usage and subsequently bill them for the services they consume. This is a practice known as pay-as-you-go.*

*Self-service and broad network access are other characteristics of the cloud not associated with pay-as-you-go, and are incorrect. High availability refers to aspects of cloud design.*

**52.**

You opted for PaaS from your cloud service provider. Which of the following would you NOT expect the cloud service provider to include in their services?

**Applications**

Operating system

Networking

Storage

Hardware

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*Correct answer: Applications*

*Consumers can install their own applications on a cloud platform using the Platform as a Service (PaaS) service model. The CSP provides the operating system and physical hardware required. This enables consumers to rapidly create their own apps without purchasing the required physical resources and operating system(s). The PaaS model includes the provisioning of computer services, operating systems, networking, storage, and all necessary hardware.*

**53.**

What type of storage media uses flash memory instead of spinning disks?

- **SSD**
- HDD
- RAM
- Tape drive

*Correct answer: SSD*

*SSDs (solid-state drives), unlike hard disk drives (HDDs), use flash memory rather than spinning disk platters. SSDs are supposed to be quieter and speedier than HDDs. SSDs are more expensive in the cloud than HDDs.*

*RAM and tape drive are incorrect. RAM is even faster than SSD but not permanent. Tape drives (which are not on the exam) are even slower than HDD.*

**54.**

What network solution has AT LEAST two network connections, allows the creation of rules to restrict network data, and comes in two types network-based and host-based?

**Firewall**

Load balancer

IPS

NIDS

*Correct answer: Firewall*

*A firewall is a hardware or software solution that serves as a network's security fortress. Firewalls filter network traffic based on defined rules and access control lists. There are two types of firewalls: network-based designed to protect a whole network infrastructure and host-based, designed to protect a single computer. Most network-based firewalls have at least two network connections: one to the public (Internet) and one to the internal network (private). Host-based firewalls are almost always software solutions.*

**55.**

As with HTTPs, RDP secures connections between the client and the virtual machine using what?

- **Encryption**
- Bandwidth
- SSH
- VPN

---

*Correct answer: Encryption*

*Like HTTPs, RDP uses encryption to secure communications between the client and virtual instance. HTTPs also secures network transmissions between the client and the server. All other options are incorrect and do not support the need for a secure connection when it comes to RDP.*

**56.**

A virtual machine is a computer that does not have a direct one-to-one hardware relation. What is the name of the same concept using networking?

**SDN**

SDS

CDN

SSH

---

*Correct answer: SDN*

*Software-Defined Networking (SDN) enables the creation of virtual networks that do not require any hardware, similar to how a virtual machine does not require any one-to-one hardware relation. SDNs are theoretically a software layer that sits between user interfaces and the underlying networking devices. When configuring cloud-based network resources, users are not required to have device-specific technical knowledge.*

**57.**

What is a Content Delivery Network (CDN)?

**A distributed server network**

A network link

Network topology

A server node

---

*Correct answer: A distributed server network*

*A Content Delivery Network (CDN) is a distributed server network that serves users with temporarily saved or cached versions of website material based on their geographic location.*

**58.**

What type of storage is based on the concept of a filing cabinet?

**File storage**

Block storage

Object storage

Cloud storage

---

*Correct answer: File storage*

*File storage is based on the file cabinet concept. Each file has a unique name when the folder and subfolder in which it is stored are included. Operating systems include built-in file systems for file management. Among other file systems, Windows uses the New Technology File System (NTFS), Macs utilize the Apple File System (APFS), and Linux utilizes the fourth extended file system (ext4).*

**59.**

To develop or create cloud resources is referred to as:

- **Provision**
- Pipeline
- DevOps
- QA

*Correct answer: Provision*

*When you build or create new cloud resources, you provision them. Elasticity refers to the dynamic provisioning and deprovisioning of resources in the cloud to meet demand.*

## 60.

What component MUST cloud service providers (CSPs) handle in accordance with the idea of shared responsibility?

**Hardware security**

Software security

Data security

Software installation

---

*Correct answer: Hardware security*

*In any cloud service model hosted by a cloud service provider (CSP), the underlying hardware is under control of the CSP and, as such, the responsibility for managing those items falls upon the CSP.*

*Software security, data security, and software installation are incorrect. Cloud customer service providers often play some role in securing software and data, as well as installing software.*

**61.**

Of the following, which is a BEST practice organizations need to follow in order to protect their cloud environment?

**Adopt a shared responsibility model**

Distribute tasks and workloads

Run security monitoring tools

Operating system maintenance

---

*Correct answer: Adopt a shared responsibility model*

*Best practices in operating applications and services in cloud settings requires an understanding of the organization's and cloud provider's shared security and compliance responsibilities. The other choices are security practices organizations should take; however, they are not the best practice that organizations need to follow in order to protect their cloud environment.*

## 62.

An end user requires assistance in discovering a web server on the internet. Which network service enables this?

- **DNS**
- SSO
- SSD
- CDN

---

*Correct answer: DNS*

*Domain name service (DNS) transforms host names to IP addresses. This information enables end users to locate a web server on the internet.*

*Single sign-on (SSO) is a security protocol that gives a user permission to enter multiple different applications following a single authentication event. A solid state drive (SSD) is a type of computer storage technology. Content delivery networks (CDNs) are caching servers that are placed in proximal locations to reduce latency.*

**63.**

What is a broad phrase that refers to any cloud-based information technology service that is delivered via a network?

**XaaS**

SaaS

IaaS

PaaS

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*Correct answer: XaaS*

*Anything as a Service (XaaS) refers to any cloud-based information technology service that is bundled into a functional package.*

*SaaS, IaaS, and PaaS are incorrect. Software-as-a-Service (SaaS) is only the provisioning of software. Infrastructure-as-a-Service (Iaas) is only the provisioning of infrastructure. Platform-as-a-Service (PaaS) is only the provisioning of platforms.*

## 64.

You work for a managed service provider as a professional services consultant. A client inquires as to why a cloud service provider dictates the location of the resources.

What are the CSP's two primary justifications for doing so?

**The CSP can meet the maximum SLA and provide a higher level of security**

The software developed by the CSP must run in a specific location

The CSP can only work with specific clients

The CSP needs to borrow its customers' infrastructure

---

*Correct answer: The CSP can meet the maximum SLA and provide a higher level of security*

*If you have cloud-based resources, the cloud service provider (CSP) determines how those resources are distributed throughout its infrastructure. Even if you acquire dedicated services, the CSP determines their location. This is due to two factors. To begin, the CSP must maintain control in order to meet the SLA, which can be accomplished by distributing workload across available capacity to attain the maximum service level. Second, the CSP is able to give an increased level of security. At the data center level, cloud resources are not recognizable.*

## 65.

Which resource is NOT typically pooled?

**Identity and access**

Network bandwidth

Processing power (CPU)

Memory (RAM)

---

*Correct answer: Identity and access*

*Cloud services must be elastic, which means that they must be able to grow or shrink in response to demand. Through the utilization of resource pooling, cloud computing enables this. The cloud provider's resources are considered as a single huge pool from which clients can draw resources as needed.*

*Pooled resources often include the following:*

- *Network bandwidth*
- *Storage*
- *Computing power (CPU)*
- *Memory (RAM)*

*Identity and access are not poolable resources; they are a security management approach.*

**66.**

Which cloud computing attribute is BEST exemplified by users accessing cloud storage via a secure container on their mobile device or an application on their desktop computer?

**Broad network access**

Scalability

Elasticity

Self-service

*Correct answer: Broad Network Access*

*Broad network access refers to the ability to use any sort of device to access IT solutions over a network. Depending on the cloud service, the device may require a web browser or a particular application.*

**67.**

Which of the cloud technologies below MINIMIZES the amount of storage space required by deleting unnecessary file copies?

**Deduplication**

Compression

Block storage

Object storage

---

*Correct answer: Deduplication*

*By deleting unnecessary copies of files, deduplication conserves storage space. Additionally, compression saves space by eliminating redundancy within a file but doesn't remove redundant copies. While block storage is more efficient than file storage, it does not eliminate duplicate files or data.*

## 68.

Any business that provides consumers with IT infrastructure, developer, and software services across a network is an example of a:

**CSP**

CDN

CRM

CMS

---

*Correct answer: CSP*

*Cloud service providers (CSPs) provide cloud consumers with IT infrastructure, developer, and software services via a network that corresponds to cloud computing characteristics such as metered consumption and self-service.*

*CDN (content delivery network) is a service used to enhance cloud service provider delivery. CRM (customer relationship management) can be offered through a cloud service provider without a cloud service provider. CMS (content management system) is a software system that manages web content.*

**69.**

Which of the following processes transforms data to a format that needs fewer bits to transmit the same amount of data?

**Compression**

Caching

Load balancing

Bandwidth

---

*Correct answer: Compression*

*Compression is the process of reducing the size of data flowing across a network by converting it to a format that uses fewer bits for the same transmission. It is used to conserve storage space and reduce the amount of data communicated across the network.*

*Caching stores data in memory for quicker access, often part of cloud networks. Load balancing sends traffic to underused servers to prevent backlogs. Bandwidth is a measure of the amount of data that can be sent or received.*

**70.**

Using a secure container on their mobile device and a web browser on their laptop, the organization wishes to ensure that users may access corporate-provided cloud storage from any location. What is this a representation of?

**Broad network access**

Elasticity

Self-service

Availability

*Correct answer: Broad network access*

*Broad network access refers to the ability to use any sort of device to access IT solutions or resources over a network. Broad network access refers to the capacity of users to obtain the data they require when and how they choose. It is also occasionally referred to as ubiquitous access.*

**71.**

In a cloud computing scenario, who is responsible for securing public cloud provisioned hosts?

**Cloud service provider**

Cloud service customer

VPN provider

Software development team

---

*Correct answer: Cloud service provider*

*Public cloud hosts are inaccessible to cloud customers and they are the responsibility of cloud service providers (CSPs).*

*Public cloud customers and their software development teams are not responsible for securing host machines. VPN providers do not themselves secure host machines but are used with host machines.*

**72.**

In the cloud, what refers to an outlined set of procedures running additional systems and replicating storage to alternative geographic locations when a network or system becomes unavailable?

**DRP**

DBaaS

DNS

GDPR

*Correct answer: DRP*

*The ability of a network or system to revert to normal operation following a disaster is part of a disaster recovery plan (DRP). This is accomplished by the use of extra systems and the replication of storage to alternate geographic locations. Natural catastrophes, cyber attacks, hardware or software failures, and human mistakes are only a few examples of calamities.*

*Database as a service (DBaaS) describes cloud-based databases. Domain Name System (DNS) resolves names to IP addresses. GDRP is a law regulating cloud computing in the European Union.*

**73.**

When it comes to on-demand pricing, which of the following statements is FALSE?

**On-demand pricing is the most cost-effective pricing model if instances are utilized 24/7.**

Pay-as-you-go is referred to as on-demand pricing.

By default, instances that are created in the cloud use pay-as-you-go (on-demand) pricing model.

On-demand pricing is intended for short run or proof-of-concept instances.

---

*Correct answer: On-demand pricing is the most cost-effective pricing model if instances are utilized 24/7.*

*When instances are used 24/7, on-demand or pay-as-you-go pricing is the most expensive pricing strategy. On-demand pricing is intended for use in limited quantities or as a proof-of-concept. By default, instances that are generated in the cloud are charged on a pay-as-you-go (or "on-demand") basis.*

**74.**

A start-up wants to set up email without having to place a server on-premises. What cloud service model would help meet the start-up's goal?

**SaaS**

PaaS

IaaS

BPaaS

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*Correct answer: SaaS*

*The Software as a Service (SaaS) model provides software applications, including apps such as Microsoft 365 e-mail and Google Mail. The other "as a service" offerings do not meet the start-ups goal.*

**75.**

A cloud systems administrator configured autoscaling for an application. The configuration is set to add additional CPU to the virtual machine if the CPU threshold hits 80% and to decrease CPU if the CPU threshold returns to 25%. In terms of scalability, what is it called when you decrease CPU when it meets a certain threshold?

**Scaling down**

Scaling up

Scaling in

Scaling out

---

*Correct answer: Scaling down*

*Vertical scaling is the act of increasing or decreasing CPU and RAM to improve application performance. Scaling up and scaling down are two concepts of vertical scaling. The act of decreasing CPU if the threshold returns to a normal defined range is called scaling down. Scaling up, in, and out are incorrect. Scaling in and out are concepts of horizontal scaling. Scaling up is the opposite of scaling down.*

## 76.

The following benefits refer to what network service in the cloud?

- The internet is not used to transport network traffic.
- The bandwidth of a network is predictable.
- Compared to the internet, network throughput is higher.
- It is more cost-effective than a high-speed internet connection.

**Direct connect**

Load balancing

Software-defined networking

VDI

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*Correct answer: Direct Connect*

*Direct connect is a dedicated private network connection from your on-premises network to the public CSP. This is referred to as ExpressRoute in Microsoft Azure and Direct Connect in Amazon Web Services. The above-mentioned are some of the potential benefits of connecting to the public cloud via a dedicated network circuit.*

## 77.

There are numerous service models available on the market. They are all variants and combinations of the three most prevalent service models: IaaS, PaaS, and SaaS.

What cloud service model provides business processes such as payroll and e-commerce?

**BPaaS**

DBaaS

CaaS

ITaaS

MaaS

---

*Correct answer: BPaaS*

*BPaaS (Business Processes as a Service) is a cloud-based software solution serving common business needs such as payroll and e-commerce. DBaaS, CaaS, ITaaS, and MaaS are other cloud service models, but are incorrect.*

*Note: Candidates are encouraged to review the CompTIA Cloud Essentials+ Acronyms list and attain a working knowledge of all the listed acronyms as a part of a comprehensive exam preparation program.*

**78.**

What is a feature of cloud storage that offers elasticity and rapid provisioning?

**Capacity on demand**

Content delivery network

Storage-defined storage

Pay-as-you-go

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*Correct answer: Capacity on demand*

*Capacity on demand is a characteristic of cloud storage that enables flexibility and quick provisioning. Capacity on demand relates to the capability to scale up or down cloud storage, data, analytics processing, or application performance automatically. If you want additional storage capacity, it is immediately accessible. You just pay for the additional storage space that you consume.*

**79.**

Of the following cloud service models, which offer(s) dynamic provisioning and DECREASE(S) the amount of on-premises hardware needed?

**IaaS & PaaS**

SaaS

CSP

PaaS & SaaS

---

*Correct answer: IaaS & PaaS*

*Cloud service models such as IaaS and PaaS enable dynamic provisioning and reduce the amount of administrative resources required. IaaS can dynamically scale up or down in response to client needs. The CSP manages and provisions the IaaS virtual infrastructure hardware. The PaaS cloud service model essentially extends the IaaS concept by adding elements such as an operating system (OS) and software development tools. The CSP maintains the hardware platforms, allowing software engineers to focus only on application development.*

## 80.

The act of adding or removing a virtual machine in response to a changing application is referred to as:

- **horizontal scaling.**
- vertical scaling.
- scaling up.
- scaling down.

---

*Correct answer: horizontal scaling.*

*Horizontal scaling is the act of adding or removing a virtual machine in response to a changing application. Scaling out and scaling in are two concepts of horizontal scaling. The act of adding a virtual machine in response to a busy application is referred to as scaling out. The act of removing the virtual machine when the application has returned to its normal baseline is referred to as scaling in. Vertical scaling, scaling up, and scaling down are incorrect. Vertical scaling is an option to increase or decrease performance. Scaling up and scaling down are concepts of vertical scaling.*

## 81.

Your client is interested in migrating their workloads to the cloud. You must assist in the selection of a storage system that supports metadata tags on individual items. What is the BEST option for your client?

**Object storage**

Raw storage

Block storage

File storage

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*Correct answer: Object storage*

*While block storage is ideal for big, organized data sets that require frequent access and updates, it struggles with metadata, which is required to make sense of unstructured data. The best option for unstructured data is object storage. Each storage unit in object storage is an object, which may or may not be connected with metadata describing the item. This simplifies the organization and retrieval of data. A business can simplify the categorization and retrieval of unstructured data by utilizing object storage.*

## 82.

What is the ADVANTAGE of a PaaS solution over a SaaS solution?

**Control over code and flexibility**

Control over content

Control over the resources

Ease of implementation

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*Correct answer: Control over code and flexibility*

*The content that can be added to cloud environments can usually be controlled. The Platform as a Service (PaaS) offers a middle ground between platform control, operating system control, and code control. Cloud service consumers specify the specific code used in the implementation, which adds complexity but also allows customization.*

**83.**

A business maintains a 100 GB database. Additionally, the cloud administrator has provisioned an additional 100 GB of storage to ensure database replication in the event of a failure. What concept does the administrator's ability to rapidly add additional storage allude to?

**Capacity on demand**

Content delivery network

Software-defined storage

Deduplication

---

*Correct answer: Capacity on demand*

*Capacity on demand is a characteristic of cloud storage that enables flexibility and quick provisioning. Capacity on demand relates to the capability to scale up or down cloud storage, data, analytics processing, or application performance automatically. If you want additional storage capacity, it is immediately accessible. You just pay for the additional storage space that you consume.*

**84.**

Which of the following is measured in data loss, not time?

**RPO**

RTO

MMTR

MTD

---

*Correct answer: RPO*

*The Recovery Point Objective (RPO) is determined by the amount of data lost, not by the amount of time. It is the greatest quantity of information you are willing to lose in an outage. The Maximum Tolerated Downtime (MTD) is the longest period of time during which you can operate without a resource. The Recovery Time Objective (RTO) specifies the time period during which recovery should occur. It should be lower than the maximum tolerable downtime in order to allow for additional time.*

*While backups are linked to the RPO, they are also linked to the RTO, which determines the maximum amount of downtime that a service or data may sustain. Bear in mind how they interact, the time required to restore data (RTO) and the frequency with which backups should be conducted (RPO).*

## 85.

Which of the following types of hypervisor is also referred to as bare metal?

- **Type 1**
- Type 2
- Type 3
- Type 4

*Correct answer: Type 1*

*Type 1 hypervisors rely exclusively on hardware (bare metal) and therefore do not require an existing operating system. Frequently, they are referred to as bare metal hypervisors.*

*Type 2 hypervisors run on an existing operating system. Type 3 hypervisor and Type 4 hypervisor are not standard terms.*

## 86.

The Windows operating system installed by a cloud customer in a VM on a public cloud contains a newly detected security flaw and must be updated. Who is responsible for fixing this security flaw?

**Cloud tenant**

Cloud service provider

Both the cloud service provider and the cloud tenant

Windows

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*Correct answer: Cloud tenant*

*The cloud tenant is responsible for updating VM software. This is part of the shared responsibility model. The shared responsibility model places the obligation for cloud security, which includes both services and infrastructure such as computing and storage, on the CSP. Cloud consumers are responsible for ensuring that the security of the cloud is maintained, such as managing the operating system, enforcing access control policies, and protecting client data.*

## 87.

Your corporation has thousands of servers that are used in a variety of departments. You are moving all of your servers to the cloud. Once your migration is complete, your business requires a method for searching for and efficiently locating all servers and resources associated with a certain department.

What will satisfy the criteria of your organization?

**Resource tagging**

Data encryption

Spot instance

Geo-redundancy

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*Correct answer: Resource tagging*

*Resource tagging is the process of assigning identifiers to cloud resources that enables them to be classified and organized into logical units. Resource tagging allows for the addition of metadata or additional data labels to cloud resources, such as identifying individual virtual machines as belonging to a department or even a project. Resource tagging enables more efficient data search.*

*Data encryption, spot instance, and geo-redundancy are incorrect. Data encryption is the use of ciphertext. Spot instances are the use of discount cloud computers. Geo-redundancy is a technique of setting data in multiple locations.*

## 88.

Managed databases remove the underlying infrastructure complexity from the cloud customer. This is often referred to as:

**DBaaS**

XaaS

MaaS

CaaS

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*Correct answer: DBaaS*

*A Database as a Service (DBaaS) solution handles all of the underlying intricacies of database management, allowing cloud users to concentrate on using the database.*

*Anything-as-a-Service (XaaS) is incorrect because it refers to the as-a-service IT business model including DBaaS. Metal-as-a-Service (MaaS) is incorrect because it refers to cloud provisioning of bare metal servers. Content-as-a-service (CaaS) is incorrect because it refers to using the cloud to deliver content.*

**89.**

Based on previous incidents, a company has determined that two hours is the maximum amount of time its service may be offline without irreparable damage. What time period does this cover?

**RTO**

DRP

MTTR

DoS

*Correct answer: RTO*

*A recovery time objective (RTO) defines how long the system or services can be down before being restored in the event of a disaster or outage. RTO is also known as the maximum allowable downtime. RTOs may vary by system.*

*DRP or disaster recovery plan is an outline of processes and procedures in the event of an outage. MTTR or mean time to repair is the average time to restore functionality to a downed system or service. DoS or Denial of Service is a form of cyberattack that can render a service unreachable.*

**90.**

You need to find a solution to allow users working remotely to connect securely to an Azure cloud deployed database. Which would be the MOST secure solution?

**Client-to-site VPN**

Internet traffic

Site-to-site VPN

Branch-to-branch VPN

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*Correct answer: Client-to-site VPN*

*A client-to-site VPN, also known as a point-to-site VPN, establishes an encrypted tunnel between an individual device and a VPN endpoint. This enables remote workers to securely connect to a cloud-deployed database from their homes via a VPN connection.*

*Site-to-site VPN is incorrect because it connects an entire on-premise network to the cloud network. Unencrypted internet traffic is incorrect because it is less secure than a VPN. Branch-to-branch VPN is incorrect because it is not a standard term.*

**91.**

In order to have strong backups of both on-premises and cloud data and configurations, the administrator must keep solid backups for both in-house and off-premises information. They need to select a cloud backup service provider. As previously instructed by the Chief Information Officer (CIO), data loss for essential systems should not exceed 15 minutes, and data loss for non-critical systems should not exceed two hours. What will be the MOST SIGNIFICANT thing to look for when reviewing Service Level Agreements (SLAs) before selecting a backup system to meet your CIO's requirements?

**RPO**

RTO

ROI

MTTR

---

*Correct answer: RPO*

*The most significant thing to look for when reviewing the Service Level Agreement (SLA) would be the Recovery Point Objective (RPO). The RPO is the amount of data lost measured in time. The data loss measured in time will aid in selecting a backup solution that meets the CIO's requirements. Recovery time objective (RTO) is the expected time in which service is expected to be restored. Mean Time To Recovery (MTTR) is the average time to repair services that have been interrupted.*

**92.**

Which of the following do cloud-hosted virtual machines normally run on when IT developers need to do testing?

**Type 2 hypervisor**

Type 1 hypervisor

Type 3 hypervisor

Type 4 hypervisor

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*Correct answer: Type 2 hypervisor*

*A Type 2 hypervisor runs on top of an existing operating system (OS), which we will refer to as the host OS. This is most frequently used in client-side virtualization, in which multiple operating systems are controlled on a client machine rather than a server.*

*Type 1 hypervisors are more commonly used in a production environment. Type 3 hypervisor and Type 4 hypervisor are not standard terms.*

**93.**

Cloud service model names begin with "what" followed by "as a Service"?

- **Type of service**
- Type of cloud
- Type of process
- Type of technology

*Correct Answer: Type of service*

*Cloud service model names normally begin with the type of service followed by "as a Service".*

**94.**

What is a NECESSARY component of establishing a cloud infrastructure model and enabling IaaS?

**Virtualization**

Structured data

Shared resources

Resource pooling

---

*Correct answer: Virtualization*

*Virtualization is required for cloud computing, but cloud computing is not required for virtualization. Cloud computing is only possible when the following six criteria are present: elasticity, scalability, self-service, wide network access, pay-as-you-go, and availability.*

**95.**

Which of the following cloud service models requires the LEAST technical oversight?

**SaaS**

PaaS

MaaS

IaaS

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*Correct answer: SaaS*

*The cloud service provider (CSP) maintains the software, software updates, and patches, as well as the underlying infrastructure, under a SaaS cloud service model. Therefore, this model requires the least amount of technical oversight.*

*Platform-as-a-Service (PaaS) requires oversight of the software level. Metal-as-a-Service (MaaS) requires oversight of the virtual machines and software. Infrastructure-as-a-Service (IaaS) requires oversight of both the software and the platform level.*

**96.**

Which of the following statements regarding hybrid cloud deployments is TRUE?

**It is comprised of at least two distinct cloud deployment models.**

It prevents inter-environmental conflict.

It uses a single deployment model.

Its ease of usability.

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*Correct answer: It is comprised of at least two distinct cloud deployment models.*

*As the name implies, a hybrid cloud deployment model is any combination of deployment models. As such, it refers to any cloud environment that combines two or more distinct cloud deployment types. For example, you may use a private cloud within your firm, but you may also incorporate some public cloud services, creating a hybrid cloud.*

**97.**

You have manually deployed a Windows server virtual machine in the public cloud. Who is responsible for applying Windows operating system updates to the VM?

**Cloud customer**

CSP

Microsoft

CSP & Cloud customer

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*Correct answer: Cloud customer*

*When a cloud customer deploys a virtual machine in the cloud, the cloud customer is responsible for managing the VM. This includes patching the operating system. However, the cloud service provider (CSP) is responsible for the underlying physical hardware, storage, and network infrastructure on which the VMs run.*

**98.**

The cloud systems administrator is in charge of a database that requires continuous throughput for random reads and writes in order to function properly. Which form of cloud storage should they use?

**Block storage with minimum IOPS provided**

File storage with minimum IOPS provided

Blob storage with minimum IOPS provided

Object storage with minimum IOPS provided

---

*Correct answer: Block storage with minimum IOPS provided*

*With CSP assured Input Output Per Second (IOPS), premium block storage with minimum IOPS provided will give the throughput for database demands. This is, however, a premium function and the highest tier of block storage.*

**99.**

Your company wants to upgrade its complete ERP software to the cloud. The requirement is that the company only pays for using the software and isn't involved in the procurement, management, or installation.

What cloud service model should you recommend to meet the business requirements?

**SaaS**

PaaS

IaaS

DBaaS

---

*Correct answer: SaaS*

*You would recommend SaaS. Software as a Service (SaaS) is a cloud service model that allows a company to use software without needing to install or manage it locally. The SaaS model covers the use of software applications by consumers who are running on a provider's cloud infrastructure. The cloud provider takes full responsibility for running the enterprise resource planning (ERP) application and managing it.*

## 100.

Is it possible to run entirely separate operating systems on a single host via virtual machines (VMs)? If this is true, how is this possible?

**Yes, virtualization enables the creation of VMs running a variety of operating systems on a single host.**

No, a single host can only function as a single virtual environment, and thus can only support a single environment.

No, virtual machines are software-based representations of a single physical host. They cannot exist in different environments.

Yes, containerization enables the creation of VMs that are physically distinct from one another, allowing them to run entirely separate operating systems.

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*Correct answer: Yes, virtualization enables the creation of VMs running a variety of operating systems on a single host.*

*It is possible to run entirely separate operating systems on a single host via virtual machines (VMs). This is possible due to virtualization, which enables the creation of VMs running a variety of operating systems on a single host. Each VM operates independently of the others as a physical entity, complete with its own operating system, runtime environment and applications.*