# AWS Practical-6

Question 1: Correct

**Which AWS service can be used to route end users to the nearest datacenter in order to reduce latency?**

- AWS Systems Manager
- Amazon Cognito
- AWS Cloud9
- Amazon Route 53

  **(Correct)**

*Explanation*

Amazon Route 53 helps AWS Customers improve their application's performance for a global audience. Amazon Route 53 latency-based policy routes user requests to the closest AWS Region, which reduces latency and improves application performance.

***The other options are incorrect:***

***Amazon Cognito is incorrect.*** Amazon Cognito lets you add user sign-up, sign-in, and access control to their web and mobile apps quickly and easily.

***AWS Systems Manager is incorrect.*** AWS Systems Manager gives you visibility and control of your infrastructure on AWS. Systems Manager provides a unified user interface so you can view operational data from multiple AWS services and allows you to automate operational tasks across your AWS resources. With Systems Manager, you can group resources, like Amazon EC2 instances, Amazon S3 buckets, or Amazon RDS instances, by application, view operational data for monitoring and troubleshooting, and take action on your groups of resources.

***AWS Cloud9 is incorrect.*** AWS Cloud9 is a cloud-based integrated development environment (IDE) that lets you write, run, and debug your code with just a browser. It includes a code editor, debugger, and terminal. Cloud9 comes prepackaged with essential tools for popular programming languages, including JavaScript, Python, PHP, and more, so you don't need to install files or configure your development machine to start new projects.

**References:**

https://aws.amazon.com/route53/

Question 2: Correct

**For some services, AWS automatically replicates data across multiple Availability Zones to provide fault tolerance in the event of a server failure or Availability Zone outage. Select TWO services that automatically replicate data across Availability Zones.**

- S3 **(Correct)**
- AWS VPN
- DynamoDB **(Correct)**
- Amazon Route 53
- Instance Store

*Explanation*

For S3 Standard, S3 Standard-IA, and S3 Glacier storage classes, your objects are automatically stored across multiple devices spanning a minimum of three Availability Zones, each separated by miles across an AWS Region. This means your data is available when needed and protected against AZ failures, errors, and threats.

All of your data in DynamoDB is stored on solid state disks (SSDs) and is automatically replicated across multiple Availability Zones within an AWS region, providing built-in high availability and data durability.

***The other options are incorrect:***

***Instance Store is incorrect.*** An instance store provides temporary block-level storage for EC2 instances. Instance store is ideal for temporary storage of information that changes frequently, such as buffers, caches, scratch data, and other temporary content.

***Amazon Route 53 is incorrect.*** Amazon Route 53 is not used for storing data. It is a globally-available, cloud-based Domain Name System (DNS) web service not tied to Availability Zones.

***AWS VPN is incorrect.*** AWS Virtual Private Network (AWS VPN) is not used for storing data. It is a service that lets you establish a secure and private tunnel from your on-premises network or device to the AWS global network.

**References:**

https://aws.amazon.com/dynamodb/

https://aws.amazon.com/s3/faqs/

Question 3: Correct

**Amazon Glacier provides several access time options that are suitable for varying data retrieval needs. Select TWO of these access time options.**

- Rapid
- Medium
- Expedited **(Correct)**
- Enterprise
- Bulk **(Correct)**

*Explanation*

To keep costs low yet suitable for varying retrieval needs, Amazon Glacier provides three options for access to archives that span a few minutes to several hours: (Access option : Data access time)

1- Expedited : 1–5 minutes

2- Standard : 3–5 hours

3- Bulk : 5–12 hours

**References:**

https://d1.awsstatic.com/whitepapers/aws_pricing_overview.pdf page 12

Question 4: Correct

**A company wants to reduce their overall AWS costs but are unsure what specific services and infrastructure components in the AWS account actually cost. Which options should the company implement to analyze their costs? (Choose TWO)**

- Use CloudWatch to create billing alerts that notify them when their usage of their services exceeds thresholds that they define

  **(Correct)**

- Use the AWS Simple Monthly Calculator to analyze the costs applied to their account

- Use Amazon Aurora to estimate and plan their AWS costs

- Activate cost allocation tags to categorize and track their costs

  **(Correct)**

- Use the AWS Price List API

*Explanation*

A tag is a label that you or AWS assigns to an AWS resource. Each tag consists of a key and a value. A key can have more than one value. You can use tags to organize your resources, and cost allocation tags to track your AWS costs on a detailed level. After you activate cost allocation tags, AWS uses the cost allocation tags to organize your resource costs on your cost allocation report, to make it easier for you to categorize and track your AWS costs.

Enabling billing alerts using CloudWatch will make it easier to track and manage your spending. The alarm triggers when your account billing exceeds the threshold you specify. Billing alerts can help prevent unexpected spend increases which may be due to unauthorized AWS account or Unknown EC2 instance usage, resources which have been provisioned in your account but are no longer in use or due to higher traffic load that can increase the utilization of all of your resources.

***The other options are incorrect:***

***"Use Amazon Aurora to estimate and plan their AWS costs" is incorrect.*** Amazon Aurora is a relational database service.

***"Use the AWS Price List API" is incorrect.*** The AWS Price List API is used to know the prices of the AWS services.

***"Use the AWS Simple Monthly Calculator to analyze the costs applied to their account" is incorrect.*** AWS Simple Monthly Calculator does not record any information about your AWS cost and usage. AWS Simple Monthly Calculator is just a tool for estimating your monthly AWS bill based on your expected usage. For example, to estimate your monthly AWS CloudFront bill, you just enter your expected CloudFront usage (Data Transfer Out, Number of requests, ... etc) and AWS Simple Monthly Calculator provides an estimate of your monthly bill for CloudFront. The AWS service that they can use to analyze the costs applied to their account is AWS Cost Explorer.

**Additional information:**

AWS Cost Explorer is a free tool that you can use to view your costs and usage. You can view data up to the last 13 months, forecast how much you are likely to spend for the next twelve months. You can use AWS Cost Explorer to see patterns in how much you spend on AWS resources over time, identify areas that need further inquiry, and see trends that you can use to understand your costs. AWS Cost Explorer allows you to explore your AWS costs and usage at both a high level and at a detailed level of analysis, and empowering you to dive deeper using a number of filtering dimensions (e.g., AWS Service, Region, Linked Account, etc.)

**References:**

https://docs.aws.amazon.com/awsaccountbilling/latest/aboutv2/cost-alloc-tags.html

https://docs.aws.amazon.com/AmazonCloudWatch/latest/monitoring/monitor_estimated_charges_with_cloudwatch.html

Question 5: Correct

**You have developed a web application targeting a global audience. Which of the following will help you achieve the highest redundancy and fault tolerance from an infrastructure perspective?**

- Deploy the application in multiple AZs in multiple AWS regions

  **(Correct)**

- Deploy the application in a single Availability Zone (AZ)

- Deploy the application in multiple AZs in a single AWS region

- There's no need to architect for these capabilities in AWS, as AWS is redundant by default

*Explanation*

Since you are targeting a global audience then you should use many AWS regions around the world. The deployment option that gives you the highest redundancy is to deploy the application

in multiple AZs within many AWS regions. This redundancy will also increase the fault tolerance of the application because if there is an outage in an AZ, the other AZs can handle requests.

**Additional information:**

It is important to understand that the AWS Cloud infrastructure is built around Regions and Availability Zones (AZs). A Region is a physical location in the world where we have multiple AZs. AZs consist of one or more discrete data centers, each with redundant power, networking, and connectivity, housed in separate facilities. These AZs offer you the ability to operate production applications and databases that are more highly available, fault tolerant, and scalable than would be possible from a single data center.

Each Amazon Region is designed to be completely isolated from the other Amazon Regions. This achieves the greatest possible fault tolerance and stability. Each AZ is isolated, but the AZs in a Region are connected through low-latency links. Each Availability Zone is designed as an independent failure zone. This means that Availability Zones are physically separated within a typical metropolitan region and are located in lower risk flood plains (specific flood zone categorization varies by Region). In addition to discrete uninterruptable power supply (UPS) and onsite backup generation facilities, they are each fed via different grids from independent utilities to further reduce single points of failure.

**References:**

https://d1.awsstatic.com/whitepapers/aws-overview.pdf

Question 6: Correct

**Which of the following are part of the seven design principles for security in the cloud? (Choose TWO)**

- Scale horizontally to protect from failures
- Never store sensitive data in the cloud
- Use manual monitoring techniques to protect your AWS resources
- Use IAM roles to grant temporary access instead of long-term credentials

  **(Correct)**
- Enable real-time traceability

  **(Correct)**

*Explanation*

There are seven design principles for security in the cloud:

1- Implement a strong identity foundation: Implement the principle of least privilege and enforce separation of duties with appropriate authorization for each interaction with your AWS resources. Centralize privilege management and reduce or even eliminate reliance on long-term credentials.

2- Enable traceability: Monitor, alert, and audit actions and changes to your environment in real time. Integrate logs and metrics with systems to automatically respond and take action.

3- Apply security at all layers: Rather than just focusing on protection of a single outer layer, apply a defense-in-depth approach with other security controls. Apply to all layers (e.g., edge network, VPC, subnet, load balancer, every instance, operating system, and application).

4- Automate security best practices: Automated software-based security mechanisms improve your ability to securely scale more rapidly and cost effectively. Create secure architectures, including the implementation of controls that are defined and managed as code in version-controlled templates.

5- Protect data in transit and at rest: Classify your data into sensitivity levels and use mechanisms, such as encryption, tokenization, and access control where appropriate.

6- Keep people away from data: Create mechanisms and tools to reduce or eliminate the need for direct access or manual processing of data. This reduces the risk of loss or modification and human error when handling sensitive data.

7- Prepare for security events: Prepare for an incident by having an incident management process that aligns to your organizational requirements. Run incident response simulations and use tools with automation to increase your speed for detection, investigation, and recovery.

***The other options are incorrect:***

***"Scale horizontally to protect from failures" is incorrect.*** Protecting from networking failures due to hardware issues or mis-configuration is not related to security. Protecting from failures and scaling horizontally are much more related to the reliability of your system.

***"Never store sensitive data in the cloud" is incorrect.*** AWS provides encryption and access control tools that allow you to easily encrypt your data in transit and at rest, and help ensure that only authorized users can access it.

***"Use manual monitoring techniques to protect your AWS resources" is incorrect.*** Automating security tasks on AWS enables you to be more secure. For example, you can automate infrastructure and application security checks to continually enforce your security and compliance controls and help ensure confidentiality, integrity, and availability at all times.

**References:**

https://d1.awsstatic.com/whitepapers/architecture/AWS_Well-Architected_Framework.pdf

Question 7: **Correct**

**Which of the following is NOT a benefit of using AWS Lambda?**

- There is no charge when your AWS Lambda code is not running
- AWS Lambda can be called directly from any mobile app
- AWS Lambda runs code without provisioning or managing servers
- AWS Lambda provides resizable compute capacity in the cloud

  **(Correct)**

*Explanation*

The option ***"AWS Lambda provides resizable compute capacity in the cloud" is not a benefit of AWS Lambda, and thus is the correct choice.*** AWS Lambda automatically runs your code without requiring you to adjust capacity or manage servers. AWS Lambda automatically scales your application by running code in response to each trigger. Your code runs in parallel and processes each trigger individually, scaling precisely with the size of the workload.

***Other options represent benefits of AWS Lambda, and thus are not correct.*** AWS Lambda lets you run code without provisioning or managing servers. You pay only for the compute time you consume—there is no charge when your code is not running. With Lambda, you can run code for virtually any type of application or backend service—all with zero administration. Just upload your code, and Lambda takes care of everything required to run and scale your code with high availability. You can set up your code to automatically trigger from other AWS services, or you can call it directly from any web or mobile app.

**References:**

https://d1.awsstatic.com/whitepapers/aws-overview.pdf

Question 8: Correct
**Which statement is true in relation to security in AWS?**

- AWS cannot access user data

  **(Correct)**
- AWS manages everything related to EC2 operating systems

- Server side encryption is the responsibility of AWS
- AWS is responsible for the security of your application

*Explanation*

AWS has no idea about the user data and cannot read any data even if they wanted to. All data are protected by the customer access keys and secret access keys and the user's encryption methods.

***The other options are incorrect:***

***"AWS manages everything related to EC2 operating systems" is incorrect.*** It is the responsibility of the customer to choose and mange the operating system.

***"AWS is responsible for the security of your application" is incorrect.*** It is the responsibility of the customer to build secure applications.

***"Server side encryption is the responsibility of AWS" is incorrect.*** It is the responsibility of the customer to encrypt data either on the client side or on the server side.

**References:**

https://aws.amazon.com/compliance/shared-responsibility-model/

Question 9: Correct

**You are working as a site reliability engineer (SRE) in an AWS environment, which of the following services helps monitor your applications?**

- Amazon CloudWatch

  **(Correct)**
- Amazon CloudHSM
- Amazon CloudSearch
- Amazon Elastic MapReduce

*Explanation*

Amazon CloudWatch is a monitoring service for AWS cloud resources and the applications running on AWS. You can use Amazon CloudWatch to collect and track metrics, collect and monitor log files, set alarms, and automatically react to changes in your AWS resources.

**The other options are incorrect:**

***Amazon Elastic MapReduce is incorrect.*** Amazon Elastic MapReduce (Amazon EMR) provides a managed Hadoop framework that makes it easy, fast, and cost-effective to process vast amounts of data across dynamically scalable Amazon EC2 instances.

***Amazon CloudSearch is incorrect.*** Amazon CloudSearch is used to set up, manage, and scale a search solution for your website or application.

***AWS CloudHSM is incorrect.*** AWS CloudHSM is a cloud-based hardware security module (HSM) that enables you to easily generate and use your own encryption keys on the AWS Cloud.

**References:**

https://aws.amazon.com/cloudwatch/

Question 10: Correct

**What is the easiest way to launch and manage a Virtual Private Server (VPS) in the AWS Cloud?**

- Using Amazon Route 53
- Using AWS Virtual Private Network
- Using Amazon Lightsail **(Correct)**
- Using Amazon Virtual Private Cloud



*Explanation*

Amazon Lightsail is designed to be the easiest way to launch and manage a virtual private server (VPS) with AWS. Lightsail plans include everything you need to jumpstart your project –a virtual machine, SSD-based storage, data transfer, DNS management, and a static IPaddress–for a low, predictable price.

**The other options are incorrect:**

***"Using Amazon Virtual Private Cloud" is incorrect.*** Amazon Virtual Private Cloud (Amazon VPC) enables you to launch AWS resources into a virtual network that you've defined.

***"Using AWS Virtual Private Network" is incorrect.*** AWS Virtual Private Network (AWS VPN) is used to establish a secure and private tunnel from your network or device to the AWS global network.

***"Using Amazon Route 53" is incorrect.*** Amazon Route 53 is a global service that provides a highly available and scalable Domain Name System (DNS) in the Cloud. You can use Route 53 to perform three main functions: domain registration, DNS routing, and health checking.

**References:**

https://d1.awsstatic.com/whitepapers/aws-overview.pdf page 22

Question 11: Correct

**What is the Amazon ElastiCache service used for? (Choose TWO)**

- Provide an in-memory data storage service **(Correct)**
- Reduce delivery costs using Edge Locations
- Improve web application performance **(Correct)**
- Distribute requests to multiple instances
- Provide a Chef-compatible cache to speed up application response

*Explanation*

Amazon ElastiCache improves the performance of web applications by allowing you to retrieve information from a fast, managed, in-memory data store, instead of relying entirely on slower disk-based databases. Querying a database is always slower and more expensive than

locating a copy of that data in a cache. By caching (storing) common database query results, you can quickly retrieve the data multiple times without having to re-execute the query.

***The other options are incorrect:***

***"Reduce delivery costs using Edge Locations" is incorrect.*** Edge Locations are used for caching content with the CloudFront service.

***"Distribute requests to multiple instances" is incorrect.*** Elastic Load Balancing is the service that can be used to distribute requests to multiple instances.

***"Provide a Chef-compatible cache to speed up application response" is incorrect.*** ElastiCache is not "Chef-compatible". Chef and Puppet are automation platforms that allow you to use code to automate the configurations of your servers. The AWS service that uses Chef and Puppet is AWS OpsWorks.

**References:**

https://aws.amazon.com/elasticache/

Question 12: Correct

**What can you access by visiting the URL: http://status.aws.amazon.com?**

- AWS Billing Dashboard
- AWS Service Health Dashboard

  **(Correct)**
- AWS Security Dashboard
- AWS Cost Dashboard

*Explanation*

The AWS Service Health Dashboard publishes AWS' most up-to-the-minute information on service availability. The dashboard provides access to current status and historical data about each and every Amazon Web Service. Just copy the URL to your browser and see the result.

**References:**

http://status.aws.amazon.com/

Question 13: Correct

**Who is responsible for scaling a DynamoDB database in the AWS Shared Responsibility Model?**

- Your development team
- Your security team
- AWS

  **(Correct)**
- Your internal DevOps team

*Explanation*

DynamoDB is a fully managed NoSQL database service that provides fast and predictable performance with seamless scalability. DynamoDB enables customers to offload the administrative burdens of operating and scaling distributed databases to AWS so that they don't have to worry about hardware provisioning, setup and configuration, throughput capacity planning, replication, software patching, or cluster scaling.

**References:**

https://aws.amazon.com/dynamodb/faqs/

Question 14: Incorrect

**According to the AWS shared responsibility model, what are the controls that customers fully inherit from AWS? (Choose TWO)**

- Resource Configuration Management

  **(Incorrect)**
- Environmental controls

  **(Correct)**
- Communications controls

- Patch Management
- Data center security controls

(Correct)

*Explanation*

**AWS is responsible** for physical controls and environmental controls. Customers inherit these controls from AWS.

As mentioned in the AWS Shared Responsibility Model page, Inherited Controls are controls which a customer fully inherits from AWS such as physical controls and environmental controls.

As a customer deploying an application on AWS infrastructure, you inherit security controls pertaining to the AWS physical, environmental and media protection, and no longer need to provide a detailed description of how you comply with these control families.

For example: Let's say you have built an application in AWS for customers to securely store their data. But your customers are concerned about the security of the data and ensuring compliance requirements are met. To address this, you assure your customer that "our company does not host customer data in its corporate or remote offices, but rather in AWS data centers that have been certified to meet industry security standards." That includes physical and environmental controls to secure the data, which is the responsibility of Amazon. Companies do not have physical access to the AWS data centers, and as such, they fully inherit the physical and environmental security controls from AWS.

You can read more about AWS' data center controls here:

https://aws.amazon.com/compliance/data-center/controls/

***The other options are incorrect:***

***"Communications controls" is incorrect.*** Communications controls are the responsibility of the customer.

***"Patch Management" is incorrect.*** Patch Management belongs to the AWS shared controls. In a shared control, AWS provides the requirements for the infrastructure and the customer must provide their own control implementation within their use of AWS services. With respect to patch management, AWS is responsible for patching the underlying hosts and fixing flaws within the infrastructure, but customers are responsible for patching their guest OS and applications.

***"Resource Configuration Management" is incorrect.*** Configuration management belongs to the AWS shared controls. With respect to configuration management, AWS maintains the configuration of its infrastructure devices, but a customer is responsible for configuring their own guest operating systems, databases, and applications.

**References:**

https://aws.amazon.com/compliance/shared-responsibility-model/

Question 15: Correct

**A company needs to host a big data application on AWS using EC2 instances. Which of the following AWS Storage services would they choose to automatically get high throughput to multiple compute nodes?**

- Amazon Elastic Block Store
- AWS Storage Gateway
- S3
- Amazon Elastic File System

**(Correct)**

*Explanation*

Amazon Elastic File System (Amazon EFS) provides simple, scalable, elastic file storage for use with AWS Cloud services and on-premises resources. It is easy to use and offers a simple interface that allows you to create and configure file systems quickly and easily. Amazon EFS is built to elastically scale on demand without disrupting applications, growing and shrinking automatically as you add and remove files, so your applications have the storage they need, when they need it.

Amazon EFS is designed to provide massively parallel shared access to thousands of Amazon EC2 instances, enabling your applications to achieve high levels of aggregate throughput and IOPS that scale as a file system grows, with consistent low latencies. As a regional service, Amazon EFS is designed for high availability and durability storing data redundantly across multiple Availability Zones. With these capabilities, Amazon EFS is well suited to support a broad spectrum of use cases, including web serving and content management, enterprise applications, media and entertainment processing workflows, home directories, database backups, developer tools, container storage, and big data analytics workloads.

***The other options are incorrect:***

***Amazon Elastic Block Store is incorrect.*** An Amazon Elastic Block Store volume cannot be attached to multiple compute resources at a time.

***S3 is incorrect.*** S3 is an object level storage. S3 cannot be attached to compute resources.

***AWS Storage Gateway is incorrect.*** AWS Storage Gateway is a hybrid storage service that enables your on-premises applications to seamlessly use AWS cloud storage. You can use the service for backup and archiving, disaster recovery, cloud data processing, storage tiering, and migration.

**References:**

https://aws.amazon.com/efs/

Question 16: Correct

**You have multiple standalone AWS accounts and you want to decrease your AWS monthly charges. What should you do?**

- Track the AWS charges that are incurred by the member accounts
- Enable AWS tiered-pricing before provisioning resources
- Add the accounts to an AWS Organization and use Consolidated Billing **(Correct)**
- Try to remove unnecessary AWS accounts

*Explanation*

Consolidated billing has the following benefits:

1- One bill – You get one bill for multiple accounts.

2- Easy tracking – You can track each account's charges, and download the cost data in .csv format.

3- Combined usage – If you have multiple standalone accounts, your charges might decrease if you add the accounts to an organization. AWS combines usage from all accounts in the organization to qualify you for volume pricing discounts.

4- No extra fee – Consolidated billing is offered at no additional cost.

***The other options are incorrect:***

***"Try to remove unnecessary AWS accounts" is incorrect.*** Removing accounts or resources depends on your needs.

***"Track the AWS charges that are incurred by the member accounts" is incorrect.*** Tracking the AWS charges will not decrease your charges.

***"Enable AWS tiered-pricing before provisioning resources" is incorrect.*** AWS tiered-pricing is applied for every AWS account regardless of whether it is part of an organization or not. With AWS, you can get volume-based discounts and realize important savings as your usage increases. For services such as S3 and data transfer OUT from EC2, pricing is tiered, meaning the more you use, the less you pay per GB. But if you have multiple AWS accounts, you can achieve even more discounts by adding them to an Organization and enable consolidated billing (because in that case, AWS will treat all the accounts as one account).

**References:**

https://docs.aws.amazon.com/awsaccountbilling/latest/aboutv2/consolidated-billing.html

https://aws.amazon.com/pricing/

Question 17: Incorrect

**Which statement is true regarding AWS pricing? (Choose TWO)**

- With AWS, you don't have to pay an upfront fee

  **(Correct)**

- There are no reservations on AWS, you only pay for what you use

  **(Incorrect)**

- For some services, you have to pay a startup fee in order to get the service running

- You are responsible for buying a license for any software not developed by AWS

  **(Incorrect)**

- You only pay for the individual services that you need with no long term contracts

  **(Correct)**

*Explanation*

AWS provides three pricing models:

1- Pay-as-you-go

2- Save when you reserve

3- Pay less by using more

With the AWS pay-as-you-go model, you only pay for what you consume, you don't have to pay any money upfront and there are no long term contracts. AWS pricing is similar to how you pay for utilities like water and electricity. You only pay for the services you consume, and once you stop using them, there are no additional costs or termination fees.

**The other options are incorrect:**

***"For some services, you have to pay a startup fee in order to get the service running" is incorrect.*** There are no startup fees for any AWS service.

***"There are no reservations on AWS, you only pay for what you use" is incorrect.*** You have the choice to reserve capacity on AWS. If you are committed to use a service for a long time, then it is better to reserve to get large discounts. For example Amazon EC2 Reserved Instances provide you with a significant discount (up to 75%) compared to On-Demand instance pricing.

***"You are responsible for buying a license for any software not developed by AWS" is incorrect.*** AWS is responsible for setting up the software licenses used in their platform. AWS makes it is easy for you by partnering with vendors like Microsoft, IBM and other vendors to simplify running many commercial software packages on your EC2 instances. For some commercial software packages that AWS does not provide such as Oracle applications you still need to obtain a license directly from the vendors.

**References:**

https://aws.amazon.com/pricing/

Question 18: Correct
**What consideration should be taken into account regarding storing data in Amazon Glacier?**

- Attach Glacier to an EC2 Instance to be able to store data
- Glacier can only be used to store frequently accessed data and data archives
- Amazon Glacier only accepts data in a compressed format

- Amazon Glacier doesn't provide immediate retrieval of data

  **(Correct)**

*Explanation*

Objects stored in Glacier take time to retrieve. You can pay for expedited retrieval, which will take several minutes or wait several hours for normal retrieval.

***The other options are incorrect:***

***"Amazon Glacier only accepts data in a compressed format" is incorrect.*** You can store virtually any kind of data in any format. But your costs will be lower if you aggregate and compress your data.

***"Attach Glacier to an EC2 Instance to be able to store data" is incorrect.*** Glacier cannot be attached to EC2 instances. Glacier is a storage class of S3.

***"Glacier can only be used to store frequently accessed data and data archives" is incorrect.*** Glacier is not for frequently accessed data.

**References:**

https://d1.awsstatic.com/whitepapers/aws_pricing_overview.pdf

Question 19: **Correct**

**Which of the following AWS support plans provides access to only the seven core AWS Trusted Advisor checks?**

- Developer & Enterprise Support
- Business & Enterprise Support
- Developer & Business Support
- Basic & Developer Support

  **(Correct)**

*Explanation*

Basic and Developer support plans provide access to only 7 core Trusted Advisor checks and guidance to provision your resources following best practices to increase performance and improve security. Business and Enterprise level Support Plans provide access to a full set of Trusted Advisor checks. You can see this full set here: https://aws.amazon.com/premiumsupport/technology/trusted-advisor/best-practice-checklist/

**References:**

https://aws.amazon.com/premiumsupport/compare-plans/

Question 20: Correct

**What is the recommended storage option when hosting an often-changing database on an Amazon EC2 instance?**

- You can't run a database inside an Amazon EC2 instance
- Amazon DynamoDB
- Amazon RDS
- Amazon EBS **(Correct)**

*Explanation*

Amazon EBS provides durable, block-level storage volumes that you can attach to a running EC2 instance. You can use Amazon EBS as a primary storage device for data that requires frequent and granular updates. Amazon EBS is the recommended storage option when you run a database on an EC2 instance.

***The other options are incorrect:***

***"Amazon RDS" is incorrect.*** Amazon RDS is not a storage service. Amazon RDS provides AWS-managed databases.

***"You can't run a database inside an Amazon EC2 instance" is incorrect.*** You can install and run any database software you want on Amazon EC2. In this case, you are responsible for managing everything related to this database.

***"Amazon DynamoDB" is incorrect.*** Amazon DynamoDB is not a storage service. Amazon DynamoDB is a key-value and document database service.

**References:**

https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/AmazonEBS.html

Question 21: Correct

**You are planning to launch an advertising campaign over the coming weekend to promote a new digital product. It is expected that there will be heavy spikes in load during the campaign period. You need additional compute resources to handle the additional load. What is the most cost-effective EC2 instance purchasing option for this job?**

- Reserved Instances
- On-Demand Instances

  (Correct)
- Dedicated Instances
- Spot Instances

*Explanation*

On Demand instances would help provision any extra capacity that the application may need without any interruptions.

***The other options are incorrect:***

***"Spot Instances" is incorrect.*** Spot instances may be more cost effective, but AWS does not guarantee the availability of the instances. Spot Instances are well-suited for data analysis, batch jobs, background processing, and optional tasks.

***"Dedicated Instances" is incorrect.*** Dedicated instances are used when you want your instances to be isolated at the host hardware level from instances that belong to other customers (and also it has a greater cost).

***"Reserved Instances" is incorrect.*** Using Reserved instances requires a contract of at least one year.

**References:**

https://aws.amazon.com/ec2/pricing/

Question 22: Correct

**Which of the following services enables you to easily generate and use your own encryption keys in the AWS Cloud?**

- AWS Shield
- AWS Certificate Manager
- AWS WAF
- AWS CloudHSM

(Correct)

*Explanation*

AWS CloudHSM is a cloud-based hardware security module (HSM) that enables you to easily generate and use your own encryption keys on the AWS Cloud.

***The other options are incorrect:***

***AWS Certificate Manager is incorrect.*** AWS Certificate Manager is a service that lets you provision, manage, and deploy (SSL/TLS) certificates for use with AWS services and your internal connected resources.

***AWS Shield is incorrect.*** AWS Shield is a managed Distributed Denial of Service (DDoS) protection service.

***AWS WAF is incorrect.*** AWS WAF is a web application firewall that helps protect your web applications from common web exploits that could affect application availability, compromise security, or consume excessive resources.

**References:**

https://d1.awsstatic.com/whitepapers/aws-overview.pdf page 81

Question 23: Incorrect

**What is the benefit of Amazon EBS volumes being automatically replicated within the same availability zone?**

- Elasticity

  **(Incorrect)**

- Durability

  **(Correct)**

- Accessibility

- Traceability

*Explanation*

Durability refers to the ability of a system to assure data is stored and data remains consistent in the system as long as it is not changed by legitimate access. This means that data should not become corrupted or disappear due to a system malfunction.

Durability is used to measure the likelihood of data loss. For example, assume you have confidential data stored in your Laptop. If you make a copy of it and store it in a secure place, you have just improved the durability of that data. It is much less likely that all copies will be simultaneously destroyed.

Amazon EBS volume data is replicated across multiple servers in an Availability Zone to prevent the loss of data from the failure of any single component. The replication of data makes EBS volumes 20 times more durable than typical commodity disk drives, which fail with an AFR (annual failure rate) of around 4%. For example, if you have 1,000 EBS volumes running for 1 year, you should expect 1 to 2 will have a failure.

Additional information:

Amazon S3 is also considered a durable storage service. Amazon S3 is designed for 99.999999999% (11 9's) durability. This means that if you store 100 billion objects in S3, you will lose one object at most.

***The other options are incorrect:***

***Elasticity is incorrect.*** Elasticity refers to the ability of a system to scale its resources up or down based on demand.

***Traceability is incorrect.*** Traceability is related to the tracking of changes made throughout a system, and not related to replicating EBS data.

***Accessibility is incorrect.*** Replicating the volume doesn't impact how you can access it. You can access EBS volumes using EC2 after mounting them to the operating system.

**References:**

https://aws.amazon.com/ebs/

Question 24: Correct

**What are the services that AWS provides to protect against network and application layer DDoS attacks? (Choose TWO)**

- AWS Systems Manager
- AWS Secrets Manager
- Amazon EFS
- AWS Web Application Firewall **(Correct)**
- Amazon CloudFront **(Correct)**

*Explanation*

Amazon CloudFront, AWS Shield, AWS Web Application Firewall (WAF), and Amazon Route 53 work seamlessly together to create a flexible, layered security perimeter against multiple types of attacks including network and application layer DDoS attacks. All of these services are co-resident at the AWS edge location and provide a scalable, reliable, and high-performance security perimeter for your applications and content.

Additional information:

AWS Shield provides always-on DDoS detection and automatic inline mitigations that minimize application downtime and latency, so there is no need to engage AWS Support to benefit from DDoS protection. All AWS customers benefit from the automatic protections of AWS Shield

Standard, at no additional charge. AWS Shield Standard defends against most common, frequently occurring network and transport layer DDoS attacks that target your web site or applications.

***The other options are incorrect:***

***AWS Systems Manager is incorrect.*** AWS Systems Manager gives you visibility and control of your infrastructure on AWS. Systems Manager provides a unified user interface so you can view operational data from multiple AWS services and allows you to automate operational tasks across your AWS resources. With Systems Manager, you can group resources, like Amazon EC2 instances, Amazon S3 buckets, or Amazon RDS instances, by application, view operational data for monitoring and troubleshooting, and take action on your groups of resources. Systems Manager simplifies resource and application management, shortens the time to detect and resolve operational problems, and makes it easy to operate and manage your infrastructure at scale.

***AWS Secrets Manager is incorrect.*** AWS Secrets Manager helps you protect secrets needed to access your applications, services, and IT resources. The service enables you to easily rotate, manage, and retrieve database credentials, API keys, and other secrets throughout their lifecycle.

***Amazon EFS is incorrect.*** Amazon EFS is a storage service.

**References:**

https://aws.amazon.com/answers/networking/aws-ddos-attack-mitigation/

https://aws.amazon.com/shield/

Question 25: **Incorrect**

**The AWS Cloud elasticity enables customers to save costs when compared to traditional hosting providers. What can AWS customers do to benefit from the AWS Cloud elasticity? (Choose TWO)**

- Use Elastic Load Balancing
- Use Serverless Computing whenever possible

  **(Correct)**
- Deploy your resources across multiple Availability Zones
- Deploy your resources in another region

  **(Incorrect)**

- Use Amazon EC2 Auto Scaling

  **(Correct)**

*Explanation*

Another way you can save money with AWS is by taking advantage of the platform's elasticity. Elasticity means the ability to scale up or down when needed. This concept is most closely associated with the AWS auto scaling which monitors your applications and automatically adjusts capacity (up or down) to maintain steady, predictable performance at the lowest possible cost.

Serverless Computing provides the highest level of elasticity. Serverless enables you to build modern applications with increased agility and lower total cost of ownership. Serverless allows you to run applications and services without thinking about servers. It eliminates infrastructure management tasks such as server or cluster provisioning, patching, operating system maintenance, and capacity provisioning. With serverless computing, everything required to run and scale your application with high availability is handled for you.

***The other options are incorrect:***

***"Deploy your resources in another region" is incorrect.*** You may want to deploy your resources in another region to enable faster disaster recovery. Also, deploying your resources in multiple regions worldwide reduce latency to global users.

***"Use Elastic Load Balancing" is incorrect.*** Elastic Load Balancing does not scale resources. Elastic Load Balancing automatically distributes incoming application traffic across multiple targets, such as Amazon EC2 instances, containers, IP addresses, and Lambda functions.

***"Deploy your resources across multiple Availability Zones" is incorrect.*** Deploying your resources across multiple Availability Zones helps you maintain high availability of your infrastructure.

**References:**

https://wa.aws.amazon.com/wat.concept.elasticity.en.html

https://aws.amazon.com/serverless/

Question 26: Correct

**Which of the following is a benefit of the "Loose Coupling" architecture principle?**

- It helps AWS customers reduce Privileged Access to AWS resources

It allows individual application components or services to be modified without affecting other components

**(Correct)**

- It allows for Cross-Region Replication
- It eliminates the need for change management

*Explanation*

As application complexity increases, a desirable attribute of an IT system is that it can be broken into smaller, loosely coupled components. This means that IT systems should be designed in a way that reduces interdependencies—a change or a failure in one component should not cascade to other components.

***The other options are incorrect:***

***"It helps AWS customers reduce Privileged Access to AWS resources" is incorrect.*** This statement is related to the "Principle of Lease Privilege", not "Loose Coupling". Loose Coupling does not deal with access privileges.

***"It allows for Cross-Region Replication" is incorrect.*** There is no relation between Cross-Region Replication and Loose Coupling. Cross-Region Replication (CRR) is an Amazon S3 feature that enables customers to replicate data across different AWS Regions; to minimize latency for global users and\or meet compliance requirements.

***"It eliminates the need for change management" is incorrect.*** Loose Coupling does not eliminate the need for Change Management. Change Management is the process responsible for controlling the Lifecycle of all Changes made in an AWS account. The primary objective of Change Management is to enable beneficial Changes to be made, with minimum disruption to IT Services. An erroneous configuration or misstep in a process can frequently lead to infrastructure or service disruptions. Creating and implementing a change management strategy will help reduce the risk of failure by monitoring all changes and rolling back failed changes. AWS Config and AWS CloudTrail are change management tools that help AWS customers audit and monitor all resource and configuration changes in their AWS environment. AWS Config provides information about the changes made to a resource, and AWS CloudTrail provides information about who made those changes. These capabilities enable customers to discover any misconfigurations, fix them, and protect their workloads from failures.

**References:**

https://aws.amazon.com/microservices/

Question 27: Incorrect

**Which of the following services is an AWS repository management system that allows for storing, versioning, and managing your application code?**

- Amazon Inspector
- AWS CodePipeline

  **(Incorrect)**
- AWS CodeCommit

  **(Correct)**
- AWS X-Ray

*Explanation*

AWS CodeCommit is designed for software developers who need a secure, reliable, and scalable source control system to store and version their code. In addition, AWS CodeCommit can be used by anyone looking for an easy to use, fully managed data store that is version controlled. For example, IT administrators can use AWS CodeCommit to store their scripts and configurations. Web designers can use AWS CodeCommit to store HTML pages and images.

AWS CodeCommit makes it easy for companies to host secure and highly available private Git repositories. Customers can use AWS CodeCommit to securely store anything from source code to binaries, and it works seamlessly with their existing Git tools.

***The other options are incorrect:***

***AWS CodePipeline is incorrect.*** AWS CodePipeline is a fully managed continuous delivery service that helps you automate your release pipelines for fast and reliable application and infrastructure updates.

***AWS X-Ray is incorrect.*** AWS X-Ray is a service that collects data about requests that your application serves, and provides tools you can use to view, filter, and gain insights into that data to identify issues and opportunities for optimization.

***Amazon Inspector is incorrect.*** Amazon Inspector automatically assesses applications for exposure, vulnerabilities, and deviations from best practices.

**References:**

https://d1.awsstatic.com/whitepapers/aws-overview.pdf page 32

Question 28: Correct

**Each AWS Region is composed of multiple Availability Zones. Which of the following best describes what an Availability Zone is?**

- It is a logically isolated network of the AWS Cloud
- It is a data center designed to be completely isolated from other data centers in the same region
- It is a distinct location within a region that is insulated from failures in other Availability Zones

  **(Correct)**
- It is a collection of data centers distributed in multiple countries

*Explanation*

Availability Zones are distinct locations within a region that are insulated from failures in other Availability Zones.

Note:

Although Availability Zones are insulated from failures in other Availability Zones, they are connected through private, low-latency links to other Availability Zones in the same region.

***The other options are incorrect:***

***"It is a collection of data centers distributed in multiple countries" is incorrect.*** An Availability Zone is a collection of data centers located in one AWS Region.

***"It is a logically isolated network of the AWS Cloud" is incorrect.*** This statement describes Amazon VPC.

***"It is a data center designed to be completely isolated from other data centers in the same region" is incorrect.*** An Availability Zone consists of one or more discrete data centers, each with redundant power, networking, and connectivity, housed in separate facilities.

**References:**

https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/using-regions-availability-zones.html

Question 29: Correct

**Where can AWS customers find their historical billing information in the AWS console?**

- AWS Simple Monthly calculator
- Billing and Cost Management console

  **(Correct)**
- AWS Budgets
- AWS TCO

*Explanation*

To view your AWS bill, open the “Bills” pane of the Billing and Cost Management console, and then choose the month you want to view from the drop-down menu.

***The other options are incorrect:***

***"AWS Budgets" is incorrect.*** AWS Budgets gives you the ability to set custom budgets that alert you when your costs or usage exceed (or are forecasted to exceed) your budgeted amount.

***"AWS Simple Monthly Calculator "is incorrect.*** The AWS Simple Monthly Calculator helps customers and prospects estimate their monthly AWS bill.

***"AWS TCO" is incorrect.*** AWS Total Cost of Ownership (TCO) Calculator allows you to estimate the cost savings when using AWS.

**References:**

https://aws.amazon.com/premiumsupport/knowledge-center/view-aws-payments/

Question 30: Correct

**Which AWS service allows you to build a data warehouse in the cloud?**

-

- AWS Shield
- Amazon EFS
- Amazon RDS
- Amazon Redshift

  **(Correct)**

*Explanation*

Amazon Redshift is a fully managed, petabyte-scale data warehouse service in the cloud. You can start with just a few hundred gigabytes of data and scale to a petabyte or more. This enables you to use your data to acquire new insights for your business and customers.

***The other options are incorrect:***

***Amazon RDS is incorrect.*** Amazon Relational Database Service (Amazon RDS) is used to set up and operate a relational database in the cloud.

***Amazon EFS is incorrect.*** Amazon Elastic File System (Amazon EFS) is a storage service that provides parallel shared access to thousands of Amazon EC2 instances, enabling your applications to achieve high levels of aggregate throughput and IOPS with consistent low latencies.

***AWS Shield is incorrect.*** AWS Shield is a managed Distributed Denial of Service (DDoS) protection service that safeguards applications running on AWS. AWS Shield Standard is automatically enabled to all AWS customers and provides always-on detection and automatic inline mitigations that minimize application downtime and latency.

**References:**

https://docs.aws.amazon.com/redshift/latest/mgmt/welcome.html

Question 31: Correct

**Which of the following factors affect Amazon CloudFront cost? (Choose TWO)**



- Traffic Distribution

  **(Correct)**

- Storage Class
- Number of Volumes
- Number of Requests

  **(Correct)**
- Instance type

*Explanation*

To estimate the costs of an Amazon CloudFront distribution consider the following:

- Data Transfer Out.

- Traffic distribution.

- Number of requests.

***The other options are incorrect:***

***"Number of Volumes" and "Storage Class" are incorrect.*** CloudFront is a caching and Content Delivery Network (CDN) service, not a storage service. It does not have the concept of volumes or storage classes.

***"Instance type" is incorrect.*** Instance type is a factor that affects Amazon EC2 costs, not Amazon CloudFront costs.

**References:**

https://aws.amazon.com/cloudfront/pricing/

Question 32: **Correct**

**Which feature enables users to sign in to their AWS accounts with their existing corporate credentials?**

- IAM Permissions
-

Access keys

- Amazon Cognito

- Federation

**(Correct)**

*Explanation*

With Federation, you can use single sign-on (SSO) to access your AWS accounts using credentials from your corporate directory. Federation uses open standards, such as Security Assertion Markup Language 2.0 (SAML), to exchange identity and security information between an identity provider (IdP) and an application.

**AWS offers multiple options for federating your identities in AWS:**

**1- AWS Identity and Access Management (IAM):** You can use AWS Identity and Access Management (IAM) to enable users to sign in to their AWS accounts with their existing corporate credentials.

**2- AWS Directory Service:** AWS Directory Service for Microsoft Active Directory, also known as AWS Microsoft AD, uses secure Windows trusts to enable users to sign in to the AWS Management Console, AWS Command Line Interface (CLI), and Windows applications running on AWS using their existing corporate Microsoft Active Directory credentials.

***The other options are incorrect:***

***"Amazon Cognito" is incorrect.*** Amazon Cognito lets you add user sign-up, sign-in, and access control to web and mobile apps quickly and easily. Amazon Cognito scales to millions of users and supports sign-in with social identity providers, such as Facebook, Google, and Amazon, and enterprise identity providers via SAML 2.0.

***"IAM Permissions" is incorrect.*** IAM Permissions let you specify the desired access to AWS resources. Permissions are granted to IAM entities (users, groups, and roles) and by default these entities start with no permissions. In other words, IAM entities can do nothing in AWS until you grant them your desired permissions.

***"Access keys" is incorrect.*** Access keys are long-term credentials for an AWS IAM user or the AWS account root user. Access keys are not used for signing in to your account. You can use access keys to sign programmatic requests to the AWS CLI or AWS API (directly or using the AWS SDK).

**References:**

https://aws.amazon.com/identity/federation/

Question 33: Correct

**What AWS service allows you to buy third-party software solutions and services that run on AWS resources?**

- AWS Marketplace

  **(Correct)**
- Amazon DevPay
- AWS Application Discovery service
- Resource Groups

*Explanation*

The AWS Marketplace is a curated digital catalog that makes it easy for customers to find, buy, deploy, and manage third-party software and services that customers need to build solutions and run their businesses. The AWS Marketplace includes thousands of software listings from popular categories such as security, networking, storage, machine learning, business intelligence, database, and DevOps. The AWS Marketplace also simplifies software licensing and procurement with flexible pricing options and multiple deployment methods. Customers can quickly launch pre-configured software with just a few clicks, and choose software solutions in AMI and SaaS formats, as well as other formats. Flexible pricing options include free trial, hourly, monthly, annual, multi-year, and BYOL.

***The other options are incorrect:***

***"Resource Groups" is incorrect.*** Resource Groups help you organize multiple AWS resources in groups. By default, the AWS Management Console is organized by AWS service. But with the Resource Groups tool, you can create a custom console that organizes and consolidates information based on your project and the resources that you use.

***"AWS Application Discovery service" is incorrect.*** AWS Application Discovery Service helps enterprise customers plan migration projects by gathering information about their on-premises data centers.

***"Amazon DevPay" is incorrect.*** Amazon DevPay is a cloud-based billing and account management service that enables developers to collect payment for their AWS applications. Note: AWS may stop this service soon. The service is not accepting new seller accounts.

**References:**

https://aws.amazon.com/partners/aws-marketplace/

Question 34: Correct

**Engineers are wasting a lot of time and effort managing batch computing software in traditional data centers. Which of the following AWS services allows them to easily run thousands of batch computing jobs?**

- AWS Batch **(Correct)**
- AWS Fargate
- Lambda@Edge
- Amazon EC2

*Explanation*

AWS Batch enables developers, scientists, and engineers to easily and efficiently run hundreds of thousands of batch computing jobs on AWS. AWS Batch dynamically provisions the optimal quantity and type of compute resources (e.g., CPU or memory-optimized instances) based on the volume and specific resource requirements of the batch jobs submitted. With AWS Batch, there is no need to install and manage batch computing software or server clusters that you use to run your jobs, allowing you to focus on analyzing results and solving problems. AWS Batch plans, schedules, and executes your batch computing workloads across the full range of AWS compute services and features, such as Amazon EC2 and Spot Instances.

***The other options are incorrect:***

***Amazon EC2 is incorrect.*** Amazon EC2 can be used to run any number of batch processing jobs but you are responsible for installing and managing a batch computing software and creating the server clusters.

***AWS Fargate is incorrect.*** AWS Fargate is a compute engine for Amazon ECS that allows you to run containers without having to manage servers or clusters.

***Lambda@Edge is incorrect.*** Lambda@Edge is a feature of Amazon CloudFront that lets you run code closer to your global end-users, which improves performance and reduces latency.

**References:**

https://d1.awsstatic.com/whitepapers/aws-overview.pdf page 22

Question 35: Correct

**Which of the following is the responsibility of AWS according to the AWS Shared Responsibility Model?**

- Securing access to AWS resources
- Securing regions and edge locations

  **(Correct)**
- Performing auditing tasks
- Monitoring AWS resources usage

*Explanation*

According to the Shared Security Model, AWS' responsibility is the Security of the Cloud. AWS is responsible for protecting the infrastructure that runs all of the services offered in the AWS Cloud. This infrastructure is composed of the hardware, software, networking, and facilities that run AWS Cloud services.

***All other options represent responsibilities of the customer.***

**References:**

https://aws.amazon.com/compliance/shared-responsibility-model/

Question 36: Correct

**What is the main benefit of attaching security groups to an Amazon RDS instance?**

- Manages user access and encryption keys
- Controls what IP addresses or EC2 instances can connect to your database instance

  **(Correct)**

Distributes incoming traffic across multiple targets

- Deploys SSL/TLS certificates for use with your database instance

*Explanation*

In Amazon RDS, security groups are used to control which IP addresses or EC2 instances can connect to your databases on a DB instance. When you initially create a DB instance, its firewall prevents any database access except through rules specified by an associated security group.

**References:**

http://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/UsingWithRDS.html

Question 37: **Correct**

**Which of the following security resources are available to any user for free? (Choose TWO)**

- AWS Classroom Training
- AWS TAM
- AWS Security Blog

  **(Correct)**
- AWS re:Invent Live Sessions
- AWS Bulletins

  **(Correct)**

*Explanation*

The AWS free security resources include the AWS Security Blog, Whitepapers, Developer Documents, Articles and Tutorials, Training, Security Bulletins, Compliance Resources and Testimonials.

**The other options are incorrect.**

***"AWS Classroom Training" is incorrect***. AWS provides live classes (Classroom Training) with accredited AWS instructors who teach you in-demand cloud skills and best practices using a mix of presentations, discussion, and hands-on labs. AWS Classroom Training is not free.

***"AWS re:Invent Live Sessions" is incorrect.*** AWS re:Invent is a learning conference hosted by Amazon Web Services for the global cloud computing community. The event features keynote announcements, training and certification opportunities, and access to hundreds of technical sessions. The registration for AWS re:Invent is not free.

***"AWS TAM" is incorrect.*** A Technical Account Manager (TAM) is your designated technical point of contact who provides advocacy and guidance to help plan and build solutions using best practices and proactively keep your AWS environment operationally healthy and secure. TAM is available only for the Enterprise support plan.

**References:**

https://aws.amazon.com/security/security-resources/

Question 38: Correct

**The AWS account administrator of your company has been fired. With the permissions granted to him as an administrator, he was able to create multiple IAM user accounts and access keys. Additionally, you are not sure whether he has access to the AWS root account or not. What should you do immediately to protect your AWS infrastructure? (Choose TWO)**

- Delete all IAM accounts and recreate them
- Download all the attached policies in a safe place
- Change the user name and the password and create MFA for the root account

  **(Correct)**
- Place IP restriction on all User accounts

  **(Correct)**
- Use the CloudWatch service to check all the API calls that have been made in your account since the administrator was fired



*Explanation*

To protect your AWS infrastructure in this situation you should lock down your root user and all accounts that the administrator had access to.

Here are some ways to do that:

1- Change the user name and the password of the root user account and all of the IAM accounts that the administrator has access to.

2- Rotate (change) all access keys for those accounts.

3- Enable MFA on those accounts.

4- Place IP restriction on all User accounts.

***The other options are incorrect:***

***"Delete all IAM accounts and recreate them" is incorrect.*** Deleting all IAM accounts is not necessary, and it would cause great disruption to your operations.

***"Download all the attached policies in a safe place" is incorrect.*** IAM policies are used to authorize users to perform actions on AWS resources. What you should do is rotating all IAM users' keys and change their passwords. This way you are protecting those IAM accounts while still retaining the ability to perform their jobs.

***"Use the CloudWatch service to check all the API calls that have been made in your account since the administrator was fired" is incorrect.*** CloudTrail is the service that gives you a complete history of the API calls that have been made in your account from all users.

**References:**

https://docs.aws.amazon.com/IAM/latest/UserGuide/best-practices.html

Question 39: Correct

**Which of the following requires an access key and a secret access key to get programmatic access to AWS resources? (Choose TWO)**

- TAM
- IAM user

  **(Correct)**
- IAM group
- AWS account root user

(Correct)

- IAM role

*Explanation*

An AWS IAM user might need to make API calls or use the AWS CLI. In that case, you need to create an access key (access key ID and a secret access key) for that user. You can create IAM user access keys with the IAM console, AWS CLI,or AWS API.

To create access keys for your AWS account root user, you must use the AWS Management Console.

***The other options are incorrect:***

***IAM group and IAM role are incorrect.*** An IAM group and an IAM role represent other IAM Identities that serve different purposes in the AWS IAM.

***TAM is incorrect.*** TAM refers to the AWS technical account manager.

References:

https://d1.awsstatic.com/whitepapers/aws-overview.pdf

Question 40: Correct

**Which Amazon EC2 Reserved Instance type is ideal for an application that predictably runs 3 hours a day, 5 days a week?**

- Convertible RIs
- Standard RIs
- On-demand RIs
- Scheduled RIs

(Correct)

*Explanation*

Scheduled RIs are available to launch within the time windows you reserve. This option allows you to match your capacity reservation to a predictable recurring schedule that only requires a fraction of a day, a week, or a month.

***The other options are incorrect:***

***Standard RIs is incorrect.*** Standard RIs are best suited for steady-state usage.

***Convertible RIs is incorrect.*** Like Standard RIs, Convertible RIs are best suited for steady-state usage. But this option allows you to change the attributes of the RI as long as the exchange results in the creation of Reserved Instances of equal or greater value.

***On-demand RIs is incorrect.*** On-demand is not a valid RI type. On-demand is a pricing model for Amazon EC2.

**References:**

https://aws.amazon.com/ec2/pricing/reserved-instances/

Question 41: Correct

**You have just finished writing your application code. Which service can be used to automate the deployment and scaling of your application?**

- AWS Elastic Beanstalk

  **(Correct)**
- AWS CodeCommit
- Amazon Elastic File System
- Amazon Simple Storage Service



*Explanation*

AWS Elastic Beanstalk is considered a Platform as a Service (PaaS). it is an easy-to-use service for deploying, scaling and updating web applications and services developed with Java, .NET, PHP, Node.js, Python, Ruby, Go, and Docker on familiar servers such as Apache, Nginx, Passenger, and IIS. You can simply upload your code and Elastic Beanstalk automatically handles the deployment, from capacity provisioning, load balancing, auto-scaling to application health

monitoring. At the same time, you retain full control over the AWS resources powering your application and can access the underlying resources at any time.

***The other options are incorrect:***

***Amazon Simple Storage Service is incorrect.*** Amazon Simple Storage Service (S3) is a storage service.

***Amazon Elastic File System is incorrect.*** Amazon Elastic File System (EFS) is a storage service.

***AWS CodeCommit is incorrect.*** AWS CodeCommit is a source code control service that hosts secure Git-based code repositories. AWS CodeCommit is designed for software developers who need a secure, reliable, and scalable source control system to store and version their code.

**References:**

https://aws.amazon.com/elasticbeanstalk/

Question 42: Correct
**What are some of the benefits of using on-demand EC2 instances? (Choose TWO)**

- They are cheaper than all other EC2 options
- They remove the need to buy “safety net” capacity to handle periodic traffic spikes

  **(Correct)**
- You can increase or decrease your compute capacity depending on the demands of your application

  **(Correct)**
- They provide free capacity when testing your new applications
- They only require 1-2 days for setup and configuration

*Explanation*

With On-Demand instances, you pay for compute capacity by the hour with no long-term commitments. You can increase or decrease your compute capacity depending on the demands of your application and only pay the specified hourly rate for the instances you use. The use of On-Demand instances frees you from the costs and complexities of planning, purchasing, and maintaining hardware and transforms what are commonly large fixed costs into much smaller variable costs. On-Demand instances also remove the need to buy “safety net” capacity to handle periodic traffic spikes.

***The other options are incorrect:***

***"They are cheaper than all other EC2 options" is incorrect.*** Spot, Savings Plans, and Reserved instances are all cheaper than on-demand instances.

***"They only require 1-2 days for setup and configuration" is incorrect.*** You can configure and launch your EC2 instances in minutes.

***"They provide free capacity when testing your new applications" is incorrect.*** There is no free capacity for application testing. You can only have specific types of instances for free during the free tier period (12 months).

**References**:

https://d1.awsstatic.com/whitepapers/aws-overview.pdf

Question 43: Correct

**Which of the following actions may reduce Amazon EBS costs? (Choose TWO)**

- Distributing requests to multiple volumes
- Changing the type of the volume

  **(Correct)**
- Deleting unused buckets
- Deleting unnecessary snapshots

  **(Correct)**

- Using reservations

*Explanation*

With Amazon EBS, it's important to keep in mind that you are paying for provisioned capacity and performance—even if the volume is unattached or has very low write activity. To optimize storage performance and costs for Amazon EBS, monitor volumes periodically to identify ones that are unattached or appear to be underutilized or overutilized, and adjust provisioning to match actual usage.

When you want to reduce the costs of Amazon EBS consider the following:

1- Delete Unattached Amazon EBS Volumes:

An easy way to reduce wasted spend is to find and delete unattached volumes. However, when EC2 instances are stopped or terminated, attached EBS volumes are not automatically deleted and will continue to accrue charges since they are still operating.

2- Resize or Change the EBS Volume Type:

Another way to optimize storage costs is to identify volumes that are underutilized and downsize them or change the volume type.

3- Delete Stale Amazon EBS Snapshots:

If you have a backup policy that takes EBS volume snapshots daily or weekly, you will quickly accumulate snapshots. Check for stale snapshots that are over 30 days old and delete them to reduce storage costs.

***The other options are incorrect:***

***"Deleting unused buckets" is incorrect.*** Amazon EBS doesn't use buckets. Buckets are used in S3 storage.

***"Distributing requests to multiple volumes" is incorrect.*** Amazon EBS is a storage service, not a compute service.

***"Using reservations" is incorrect.*** There are no reservations in Amazon EBS independently of Amazon EC2.

**References:**

https://docs.aws.amazon.com/aws-technical-content/latest/cost-optimization-storage-optimization/optimizing-amazon-ebs-storage.html

Question 44: Correct
**What are the main differences between an IAM user and an IAM role in AWS? (Choose TWO)**

-

An IAM user has permanent credentials associated with it, however a role has temporary credentials associated with it

**(Correct)**

- A role is uniquely associated with only one person, however an IAM user is intended to be assumable by anyone who needs it
- An IAM user is uniquely associated with only one person, however a role is intended to be assumable by anyone who needs it

**(Correct)**

- IAM users are more cost effective than IAM roles
- An IAM user has temporary credentials associated with it, however a role has permanent credentials associated with it

*Explanation*

An IAM role is similar to a user, in that it is an AWS identity with permission policies that determine what the identity can and cannot do in AWS. However, instead of being uniquely associated with one person, a role is intended to be assumable by anyone who needs it. Also, a role does not have standard long-term credentials (password or access keys) associated with it. Instead, if a user assumes a role, temporary security credentials are created dynamically and provided to the user.

***The other options are incorrect:***

***"A role is uniquely associated with only one person, however an IAM user is intended to be assumable by anyone who needs it" is incorrect.*** An IAM user is uniquely associated with only **one person**, however a role is intended to be assumable by **anyone** who needs it.

***"An IAM user has temporary credentials associated with it, however a role has permanent credentials associated with it" is incorrect.*** An IAM user has **permanent** credentials associated with it, however a role has **temporary** credentials associated with it.

***"IAM users are more cost effective than IAM roles" is incorrect.*** AWS IAM and all of its features are offered at no additional charge.

**References:**

https://docs.aws.amazon.com/IAM/latest/UserGuide/id_roles.html

Question 45: Correct

**What does the AWS "Business" support plan provide? (Choose TWO)**

- Support Concierge Service
- Access to the full set of Trusted Advisor checks

  **(Correct)**
- AWS Support API

  **(Correct)**
- Proactive Technical Account Management
- Less than 15 minutes response-time support if your business critical system goes down

*Explanation*

AWS recommend Business Support if you have production workloads on AWS and want 24x7 access to technical support and architectural guidance in the context of your specific use-cases.

In addition to what is available with Basic Support, Business Support provides:

1- AWS Trusted Advisor - Access to the full set of Trusted Advisor checks and guidance to provision your resources following best practices to help reduce costs, increase performance and fault tolerance, and improve security.

2- AWS Personal Health Dashboard - A personalized view of the health of AWS services, and alerts when your resources are impacted. Also includes the Health API for integration with your existing management systems.

3- Enhanced Technical Support – 24x7 access to Cloud Support Engineers via phone, chat, and email. You can have an unlimited number of contacts that can open an unlimited amount of cases.

Response times are as follows:

- General Guidance - < 24 hours

- System Impaired - < 12 hours

- Production System Impaired - < 4 hours

- Production System Down - < 1 hour

4- Architecture Support – Contextual guidance on how services fit together to meet your specific use-case, workload, or application.

5- AWS Support API - Programmatic access to AWS Support Center features to create, manage, and close your support cases, and operationally manage your Trusted Advisor check requests and status.

6- Third-Party Software Support - Guidance, configuration, and troubleshooting of AWS interoperability with many common operating systems, platforms, and application stack components.

7- Access to Proactive Support Programs – Ability to purchase Infrastructure Event Management for an additional fee. This provides Architecture and scaling guidance, and real-time operational support during the preparation and execution of planned events, product launches, and migrations.

***The other options are incorrect:***

***"Support Concierge" is incorrect.*** Support Concierge is only available for the AWS Enterprise support plan. The Concierge Team are AWS billing and account experts that specialize in working with enterprise accounts. They will quickly and efficiently assist you with your billing and account inquiries, and work with you to implement billing and account best practices so that you can focus on what matters: running your business.

***"Less than 15 minutes response-time support if your business critical system goes down" is incorrect.*** The AWS Business support plan provide 1-hour response time support if your production system goes down. If you want less than 15-minutes response time, you have to subscribe for the AWS Enterprise support plan.

***"Proactive Technical Account Management" is incorrect.*** Proactive Technical Account Management is only available for the AWS Enterprise support plan. A Technical Account Manager (TAM) is your designated technical point of contact who provides advocacy and guidance to help plan and build solutions using best practices, coordinate access to subject matter experts and product teams, and proactively keep your AWS environment operationally healthy.

**References:**

https://aws.amazon.com/premiumsupport/plans/

https://aws.amazon.com/premiumsupport/plans/enterprise/

https://aws.amazon.com/premiumsupport/plans/business/

Question 46: Correct

**Which of the following affect Amazon EBS cost? (Choose TWO)**



- 

Volume types

**(Correct)**

- Snapshots

  **(Correct)**

- RAM
- Number of cores
- Elastic IP's

*Explanation*

To estimate the costs of Amazon EBS consider the following:

1- Volume type.

2- Input/output operations per second(IOPS).

3- Snapshots.

4- Data Transfer.

**The other options are incorrect.** Elastic IP's, Number of cores and RAM represent factors of Amazon EC2 pricing.

**References:**

https://aws.amazon.com/ebs/pricing/

Question 47: **Correct**

**What is the AWS S3 storage class that has the lowest availability rating?**

- S3 One Zone-IA (Infrequent Access)

  **(Correct)**

- Glacier
- S3 Standard-IA (Infrequent Access)

- Standard

*Explanation*

S3 One Zone-IA has the lowest availability rating: 99.5%. S3 One Zone IA only stores data in 1 availability zone instead of multiple aviailability zones that the other storage classes utilize.

***The other options are incorrect:***

***Standard is incorrect.*** Standard has an availability rating of 99.99%.

***S3 Standard-IA (Infrequent Access) is incorrect.*** Infrequent Access has an availability rating of 99.9%.

***Glacier is incorrect.*** Glacier has an availability rating of 99.99%, and is used for long-term storage.

TIP: Don't Memorize numbers !

What you need to know is that S3 One Zone-IA and S3 Standard-IA (Infrequent Access) have lower availability ratings than the other classes.

**References:**

https://aws.amazon.com/s3/storage-classes/

Question 48: Correct

**You are working as a web app developer. You are currently facing issues in media playback for mobile devices because your media format is not supported. Which of the following AWS services can help you convert your media into another format?**

- Amazon Elastic Transcoder

  **(Correct)**

- Amazon S3

- Amazon Pinpoint

-

Amazon Rekognition

*Explanation*

Amazon Elastic Transcoder is a media transcoding service. It is designed to be a highly scalable, easy-to-use, and cost-effective way to convert (or transcode) media files from their source format into versions that will play back on devices like smartphones, tablets, and PCs.

***The other options are incorrect:***

***Amazon Pinpoint is incorrect.*** Amazon Pinpoint is used by marketers to engage their customers by sending targeted email, SMS, push notifications, and voice messages.

***Amazon Rekognition is incorrect.*** Amazon Rekognition allows you to add image and video analysis to your applications. For example, you can use it detect faces in millions of images uploaded to S3.

***Amazon S3 is incorrect.*** Amazon S3 is a storage service.

**References:**

https://d1.awsstatic.com/whitepapers/aws-overview.pdf page 60

Question 49: Correct

**Which of the following services is used when encrypting EBS volumes?**

- Amazon GuardDuty
- Amazon Macie
- AWS KMS

  **(Correct)**
- AWS WAF

*Explanation*

Amazon EBS encryption offers a straight-forward encryption solution for your EBS resources that doesn't require you to build, maintain, and secure your own key management infrastructure. You can use the AWS Key Management Service (AWS KMS) to create and control the encryption keys used to encrypt your data. AWS Key Management Service is also integrated with other AWS

services including Amazon S3, and Amazon Redshift, to make it simple to encrypt your data with encryption keys that you manage.

***The other options are incorrect:***

***"Amazon GuardDuty" is incorrect.*** Amazon GuardDuty offers threat detection that enables you to continuously monitor and protect your AWS accounts and workloads. GuardDuty analyzes continuous streams of meta-data generated from your account and network activity found in AWS CloudTrail Events, Amazon VPC Flow Logs, and DNS Logs. It also uses integrated threat intelligence such as known malicious IP addresses, anomaly detection, and machine learning to identify threats more accurately.

***"AWS WAF" is incorrect.*** AWS WAF is a web application firewall that helps protect your web applications from common web exploits that could affect application availability, compromise security, or consume excessive resources.

***"Amazon Macie" is incorrect.*** Amazon Macie is a fully managed data security and data privacy service that uses machine learning and pattern matching to discover and protect sensitive data stored in Amazon S3. Macie automatically detects a large and growing list of sensitive data types, including personally identifiable information (PII) such as names, addresses, and credit card numbers. Macie automatically provides an inventory of Amazon S3 buckets including a list of unencrypted buckets, publicly accessible buckets, and buckets shared with other AWS accounts. Then, Macie applies machine learning and pattern matching techniques to the buckets you select to identify and alert you to sensitive data. Amazon Macie can also be used in combination with other AWS services, such as AWS Step Functions to take automated remediation actions. This can help you meet regulations, such as the General Data Privacy Regulation (GDPR).

**References:**

https://aws.amazon.com/kms/

https://aws.amazon.com/ebs/faqs/

Question 50: Correct

**A company is running a large web application that needs to always be available. One of the aspects to consider monitoring is CPU usage. The application tends to slow down when CPU usage is greater than 60%. How can they track when CPU usage goes above 60% for any of the EC2 Instances in their account?**

- Use CloudFront to monitor the CPU usage
- Use SNS to monitor the utilization of the server
- Use CloudWatch Alarms to monitor the CPU and alert when the CPU usage is >= 60%

(Correct)

- Set the AWS Config CPU threshold to 60% to receive a notification when EC2 usage exceeds that value

*Explanation*

Amazon CloudWatch monitors your Amazon Web Services (AWS) resources and the applications you run on AWS in real time. You can use CloudWatch to collect and track metrics, which are variables you can measure for your resources and applications. CloudWatch alarms send notifications or automatically make changes to the resources you are monitoring based on rules that you define. For example, you can monitor the CPU usage and disk reads and writes of your Amazon EC2 instances and then use this data to determine whether you should launch additional instances to handle increased load. You can also use this data to stop under-used instances to save money. In addition to monitoring the built-in metrics that come with AWS, you can monitor your own custom metrics. With CloudWatch, you gain system-wide visibility into resource utilization, application performance, and operational health.

***The other options are incorrect:***

***"Use SNS to monitor the utilization of the server" is incorrect.*** SNS is not used for monitoring. The service can be used in conjunction with CloudWatch to monitor and send notifications to your Email address. Using Amazon CloudWatch alarms, you can set up metric thresholds and send alerts to Amazon Simple Notification Service (SNS). SNS can send notifications using e-mail, HTTP(S) endpoints, and Short Message Service (SMS) messages to mobile phones.

***"Use CloudFront to monitor the CPU usage" is incorrect.*** CloudFront is a Caching service that is used to deliver content to end users with low latency.

***"Set the AWS Config CPU threshold to 60% to receive a notification when EC2 usage exceeds that value" is incorrect.*** AWS Config cannot be used to monitor or set thresholds for your CPU usage. AWS Config enables you to review changes in configurations and relationships between AWS resources, dive into detailed resource configuration histories, and determine your overall compliance against the configurations specified in your internal guidelines. This enables you to simplify compliance auditing, security analysis, change management, and operational troubleshooting.

**References:**

https://aws.amazon.com/cloudwatch/

Question 51: Correct
**What are the benefits of the AWS Marketplace service? (Choose TWO)**

- Provides flexible pricing options that suit most customer needs

(Correct)

- Protect customers by performing periodic security checks on listed products

  (Correct)

- Provides cheaper options for purchasing Amazon EC2 on-demand instances
- Per-second billing
- Provides software solutions that run on AWS or any other Cloud vendor

*Explanation*

The AWS Marketplace is a curated digital catalog that makes it easy for customers to find, buy, and immediately start using the software and services that customers need to build solutions and run their businesses. The AWS Marketplace includes thousands of software listings from popular categories such as security, networking, storage, machine learning, business intelligence, database, and DevOps. AWS Marketplace is designed for Independent Software Vendors (ISVs), Value-Added Resellers (VARs), and Systems Integrators (SIs) who have software products they want to offer to customers in the cloud. Partners use AWS Marketplace to be up and running in days and offer their software products to customers around the world.

The AWS Marketplace provides value to buyers in several ways:

1- It simplifies software licensing and procurement with flexible pricing options and multiple deployment methods. Flexible pricing options include free trial, hourly, monthly, annual, multi-year, and BYOL.

2- Customers can quickly launch pre-configured software with just a few clicks, and choose software solutions in AMI and SaaS formats, as well as other formats.

3- It ensures that products are scanned periodically for known vulnerabilities, malware, default passwords, and other security-related concerns.

***The other options are incorrect:***

***"Provides cheaper options for purchasing Amazon EC2 on-demand instances" is incorrect.*** The AWS marketplace cannot be used to buy Amazon EC2 on-demand instances.

***"Provides software solutions that run on AWS or any other Cloud vendor" is incorrect.*** The AWS Marketplace provides software solutions that run on AWS only.

***"Per-second billing" is incorrect.*** The AWS marketplace pricing options include free trial, hourly, monthly, annual, multi-year, and BYOL. Per-second billing is found on AWS resources and services only. It is not found in the marketplace.

**References:**

https://aws.amazon.com/marketplace

https://docs.aws.amazon.com/marketplace/latest/userguide/what-is-marketplace.html

Question 52: Correct

**How can you increase your application's fault-tolerance while it is being hosted in AWS?**

- Deploy your application across a large number of EC2 instances
- Host your application on one powerful EC2 instance type instead of multiple smaller instances
- Deploy your application across multiple Availability Zones

  **(Correct)**
- Deploy the underlying application resources across multiple subnets

*Explanation*

The fault tolerance of an application involves its ability to recover gracefully from failures. Deploying the application resources across multiple availability zones will guarantee that even if one availability zone goes down, there will still be other availability zones to run the application efficiently.

***The other options are incorrect:***

***"Deploy your application across a large number of EC2 instances" is incorrect.***

This option is incorrect for two reasons:

1st: It is not mentioned whether those instances will run in a single Availability Zone or multiple Availability Zones.

2nd: Deploying your application across a large number of EC2 instances is costly and may not be necessary. The better alternative is to configure EC2 Auto Scaling to automatically add or remove instances and run the **required** number of instances **only**.

***"Deploy the underlying application resources across multiple subnets" is incorrect.*** A subnet is a range of IP addresses in your VPC.

***"Host your application on one powerful EC2 instance type instead of multiple smaller instances" is incorrect.*** Hosting your application on one powerful instance is not a best practice, because as soon as that instance fails, the entire application will fail. For that reason, you should deploy your application across multiple instances in multiple availability zones to increase your application's fault-tolerance.

**References:**

https://docs.aws.amazon.com/aws-technical-content/latest/aws-overview/global-infrastructure.html

Question 53: Correct

**What are the benefits of the AWS Organizations service? (Choose TWO)**

- Consolidate billing across multiple AWS accounts **(Correct)**
- Control access to AWS services **(Correct)**
- Help organizations achieve their desired business outcomes with AWS
- Manage your organization's payment methods
- Help organizations design and maintain an accelerated path to successful cloud adoption

*Explanation*

AWS Organizations has five main benefits:

1) Centrally manage access polices across multiple AWS accounts.

2) Automate AWS account creation and management.

3) Control access to AWS services.

4) Consolidate billing across multiple AWS accounts.

5) Configure AWS services across multiple accounts.

** Control access to AWS services: AWS Organizations allows you to restrict what services and actions are allowed in your accounts. You can use Service Control Policies (SCPs) to apply permission guardrails on AWS Identity and Access Management (IAM) users and roles. For example, you can apply an SCP that restricts users in accounts in your organization from launching any resources in regions that you do not explicitly allow.

** Consolidate billing across multiple AWS accounts: You can use AWS Organizations to set up a single payment method for all the AWS accounts in your organization through consolidated billing. With consolidated billing, you can see a combined view of charges incurred by all your accounts, as well as take advantage of pricing benefits from aggregated usage, such as volume discounts for Amazon EC2 and Amazon S3.

***The other options are incorrect:***

***"Help organizations achieve their desired business outcomes with AWS" is incorrect.*** AWS Professional Services is the service that helps organizations achieve their desired business outcomes with AWS.

***"Manage your organization's payment methods" is incorrect.*** AWS Billing and Cost Management is the service that allows you to manage your organization's payment methods.

***"Help organizations design and maintain an accelerated path to successful cloud adoption" is incorrect.*** AWS Professional Services is the service that helps organizations design and travel an accelerated path to successful cloud adoption

**References:**

https://aws.amazon.com/organizations/

Question 54: Correct
**AWS provides excellent cloud-based disaster recovery services by distributing their cloud infrastructure into multiple _____ .**

- Support plans
- Edge locations
- Regions

**(Correct)**

- Transportation devices

*Explanation*

Businesses are using the AWS cloud to enable faster disaster recovery of their critical IT systems without incurring the infrastructure expense of a second physical site. The AWS cloud supports many popular disaster recovery (DR) architectures from “pilot light” environments that may be suitable for small customer workload data center failures to “hot standby” environments that enable rapid failover at scale. With data centers in Regions all around the world, AWS provides a set of cloud-based disaster recovery services that enable rapid recovery of your IT infrastructure and data.

***The other options are incorrect:***

***"Transportation devices" is incorrect.*** AWS uses storage transportation devices, like AWS Snowball and Snowmobile to allow companies transfer data to the cloud.

***"Support plans" is incorrect.*** AWS provides multiple support plans to meet the different requirements of its customers.

***"Edge locations" is incorrect.*** AWS edge locations are used by the CloudFront service to cache content to end users to reduce latency.

**References:**

https://aws.amazon.com/disaster-recovery/

Question 55: Correct

**Amazon EC2 instances are conceptually very similar to traditional servers. However, using Amazon EC2 server instances in the same manner as traditional hardware server instances is only a starting point. What are the main benefits of using the AWS EC2 instances instead of traditional servers? (Choose TWO)**

- Provides automatic data backups
- Improves Fault-Tolerance

  **(Correct)**
- Prevents unauthorized users from getting into your network

- Can be scaled manually in a shorter period of time

  **(Correct)**

- Provides your business with a seamless remote accessibility

*Explanation*

**"Improves Fault-Tolerance" is a correct answer.** AWS has unique set of services that you can use to build fault-tolerant applications in the cloud. For example you can get improved fault tolerance by placing your compute instances behind an Elastic Load Balancer, as it can automatically balance traffic across multiple instances and multiple Availability Zones and ensure that only healthy Amazon EC2 instances receive traffic.

You can setup an Elastic Load Balancer to balance incoming application traffic across Amazon EC2 instances in a single Availability Zone or multiple Availability Zones. Elastic Load Balancing can detect the health of Amazon EC2 instances. When it detects unhealthy Amazon EC2 instances, it no longer routes traffic to those unhealthy instances. Instead, it spreads the load across the remaining healthy instances. If all of your Amazon EC2 instances in a particular Availability Zone are unhealthy, but you have set up instances in multiple Availability Zones, Elastic Load Balancing will route traffic to your healthy Amazon EC2 instances in those other zones. It will resume load balancing to the original Amazon EC2 instances when they have been restored to a healthy state.

Also, using Auto Scaling enables you to greatly reduce the amount of time and resources you need to monitor your servers –if a failure occurs, a replacement will be automatically launched for you. Diagnosing an unhealthy server can be as simple as terminating it and letting Auto Scaling launch a new one for you.

**"Can be scaled manually in a shorter period of time" is a correct answer.** Amazon EC2 reduces the time required to obtain and boot new server instances to minutes, allowing you to quickly scale capacity (manually or automatically), both up and down, as your computing requirements change.

***The other options are incorrect:***

***"Provides your business with a seamless remote accessibility" is incorrect.*** Both Amazon EC2 instances and traditional servers can provide access from any geographic area.

***"Prevents unauthorized users from getting into your network" is incorrect.*** Both AWS and on-premises include built-in firewall protection to help prevent unauthorized users from getting into your network.

***"Provides automatic data backups" is incorrect.*** Both AWS and on-premises provide automatic data backups to prevent data losses.

**References:**

https://aws.amazon.com/elasticloadbalancing/

https://aws.amazon.com/ec2/

Question 56: Correct

**Which of the following AWS Support Plans gives you 24/7 access to Cloud Support Engineers via email & phone? (Choose TWO)**

- Premium
- Standard
- Business **(Correct)**
- Enterprise **(Correct)**
- Developer

*Explanation*

For Technical Support, each of the Business and the Enterprise support plans provides 24x7 phone, email, and chat access to Support Engineers.

***The other options are incorrect:***

***"Premium" and "Standard "are incorrect.*** Premium and Standard are not valid support plans on AWS.

***"Developer" is incorrect.*** This plan does not include phone support 24/7.

**References:**

https://aws.amazon.com/premiumsupport/compare-plans/

Question 57: Correct

**Which of the following resources can an AWS customer use to learn more about prohibited uses of the services offered by AWS?**

- AWS Acceptable Use Policy

  **(Correct)**
- AWS Budgets
- AWS Artifact
- AWS CloudTrail

*Explanation*

The AWS Acceptable Use Policy describes prohibited uses of the web services offered by Amazon Web Services, Inc. and its affiliates (the “Services”) and the website located at http://aws.amazon.com (the “AWS Site”). The examples described in this Policy are not exhaustive. AWS may modify this Policy at any time by posting a revised version on the AWS Site. By using the Services or accessing the AWS Site, you agree to the latest version of this Policy. If you violate the Policy or authorize or help others to do so, AWS may suspend or terminate your use of the Services.

***The other options are incorrect:***

***AWS Artifact is incorrect.*** AWS Artifact provides on-demand access to AWS’ security and compliance reports and select online agreements. Reports available in AWS Artifact include our Service Organization Control (SOC) reports, Payment Card Industry (PCI) reports.

***AWS CloudTrail is incorrect.*** AWS CloudTrail is used to track and log all user’s interactions with AWS services.

***AWS Budgets is incorrect.*** AWS Budgets gives you the ability to set custom budgets that alert you when your costs or usage exceed (or are forecasted to exceed) your budgeted amount.

**References:**

https://aws.amazon.com/aup/

Question 58: Correct
**Which database should you use if your application and data schema require "joins" or complex transactions?**

-

- Amazon DocumentDB
- Amazon DynamoDB
- Amazon RDS

  **(Correct)**
- Amazon ElastiCache

*Explanation*

If your database's schema cannot be denormalized, and your application requires joins or complex transactions, consider using a relational database such as Amazon RDS.

***The other options are incorrect:***

***Amazon DynamoDB is incorrect.*** A key-value database such as Amazon DynamoDB is a type of non-relational database that uses a simple key-value method to store and retrieve data. DynamoDB does not support complex relational queries such as joins or complex transactions.

***Amazon DocumentDB is incorrect.*** Document databases such as Amazon DocumentDB are designed to store semi-structured data as documents. Document databases do not support complex relational queries such as joins or complex transactions.

***Amazon ElastiCache is incorrect.*** ElastiCache is an in-memory data store and cache service, not a relational database service. Amazon ElastiCache is used to improve the performance of your existing apps by retrieving data from high throughput and low latency in-memory data stores.

**References:**

https://aws.amazon.com/products/databases/

https://aws.amazon.com/rds/

Question 59: **Correct**

**Which of the following services allows you to install and run custom relational database software?**



- Amazon Cognito

- Amazon Inspector
- Amazon RDS
- Amazon EC2 **(Correct)**

*Explanation*

If an AWS customer needs a full control over a database, AWS provides a wide range of Amazon EC2 instances—with different hardware characteristics—on which they can install and run their custom relational database software.

Please note that if EC2 is used instead of RDS to run a relational database, the customer will be responsible for managing everything related to this database.

***The other options are incorrect:***

***Amazon Inspector is incorrect.*** Amazon Inspector is an automated security assessment service to help improve the security and compliance of applications deployed on AWS.

***Amazon Cognito is incorrect.*** Amazon Cognito allows customers to add user sign-up, sign-in, and access control to their web and mobile apps quickly and easily.

***Amazon RDS is incorrect.*** Amazon RDS provides six database engines to choose from, including Amazon Aurora, PostgreSQL, MySQL, MariaDB, Oracle Database, and SQL Server. These engines are already installed and ready to be used. The customer does not install the actual database software on RDS, as it is a managed service.

**References:**

https://aws.amazon.com/ec2

Question 60: **Incorrect**

**Which of the following Cloud Computing deployment models eliminates the need to run and maintain physical data centers?**

- PaaS
- IaaS

(Incorrect)

- Cloud

  (Correct)

- On-premises

*Explanation*

**There are three Cloud Computing Deployment Models:**

**1- Cloud:**

A cloud-based application is fully deployed in the cloud and all parts of the application run in the cloud. This Cloud Computing deployment model eliminates the need to run and maintain physical data centers.

**2- Hybrid:**

A hybrid deployment is a way to connect infrastructure and applications between cloud-based resources and existing resources that are not located in the cloud (On-premises data centers).

**3- On-premises:**

Deploying resources on-premises, using virtualization and resource management tools, is sometimes called “private cloud”. On-premises deployment does not provide many of the benefits of cloud computing but is sometimes sought for its ability to provide dedicated resources.

***The other options are incorrect:***

Iaas, PaaS, and SaaS are not deployment models. They represent the different use cases of Cloud Computing, and the different levels of control customers need over their IT resources.

***IaaS is incorrect.*** Infrastructure as a Service, sometimes abbreviated as IaaS, contains the basic building blocks for cloud IT and typically provides access to networking features, computers (virtual or on dedicated hardware), and data storage space. Infrastructure as a Service provides you with the highest level of flexibility and management control over your IT resources and is most similar to existing IT resources that many IT departments and developers are familiar with today.

***PaaS is incorrect.*** Platform as a Service (PaaS) removes the need for organizations to manage the underlying infrastructure (usually hardware and operating systems) and allow you to focus on the deployment and management of your applications. This helps you be more efficient as you don’t need to worry about resource procurement, capacity planning, software maintenance, patching, or any of the other undifferentiated heavy lifting involved in running your application.

***SaaS* is incorrect.** Software as a Service (SaaS) provides you with a completed product that is run and managed by the service provider. In most cases, people referring to Software as a Service are referring to end-user applications. With a SaaS offering you do not have to think about how the service is maintained or how the underlying infrastructure is managed; you only need to think about how you will use that particular piece software. A common example of a SaaS application is the web-based email where you can send and receive email without having to manage feature additions to the email product or maintaining the servers and operating systems that the email program is running on.

**References:**

https://aws.amazon.com/types-of-cloud-computing/

Question 61: Correct

**What factors determine how you are charged when using AWS Lambda? (Choose TWO)**

- Number of volumes
- Compute time consumed

  **(Correct)**
- Storage consumed
- Compute capacity consumed
- Number of requests to your functions

  **(Correct)**

*Explanation*

With AWS Lambda, you pay only for what you use. You are charged based on the number of requests for your functions and the time it takes for your code to execute.

***The other options are incorrect:***

***"Compute capacity consumed" is incorrect.*** With Lambda, there are no servers or compute capacity. It is a serverless service.

***"Storage consumed" and "Number of volumes" are incorrect.*** Lambda is not a storage service. It is a compute service to run your applications.

**References:**

https://d1.awsstatic.com/whitepapers/aws_pricing_overview.pdf page 9

Question 62: Correct

**How does AWS help customers achieve compliance in the cloud?**

- Many AWS services are assessed regularly to comply with local laws and regulations
- It's not possible to meet regulatory compliance requirements in the Cloud
- AWS applies the most common Cloud security standards, and is responsible for complying with customers' applicable laws and regulations
- AWS has a number of common assurance certifications such as ISO 9001 and HIPAA

**(Correct)**

*Explanation*

AWS environments are continuously audited, and its infrastructure and services are approved to operate under several compliance standards and industry certifications across geographies and industries, including PCI DSS, ISO 2700, ISO 9001, and HIPAA. You can use these certifications to validate the implementation and effectiveness of AWS security controls. For example, AWS companies that use AWS products and services to handle credit card information can rely on AWS technology infrastructure as they manage their PCI DSS compliance certification.

***The other options are incorrect:***

***"AWS applies the most common Cloud security standards, and is responsible for complying with customers' applicable laws and regulations" is incorrect.*** In all cases, customers operating in the cloud remain responsible for complying with applicable laws and regulations.

***"Many AWS services are assessed regularly to comply with local laws and regulations" is incorrect.*** AWS services are assessed regularly to comply with common compliance standards NOT with local laws and regulations.

***"It's not possible to meet regulatory compliance requirements in the Cloud" is incorrect.*** AWS environments are continuously audited, and its infrastructure and services are approved to operate

under several compliance standards and industry certifications across geographies and industries. For example, AWS enables covered entities and their business associates subject to the U.S. Health Insurance Portability and Accountability Act of 1996 (HIPAA) to use the secure AWS environment to process, maintain, and store protected health information.

**References:**

https://d0.awsstatic.com/whitepapers/compliance/AWS_Compliance_Quick_Reference.pdf

Question 63: **Correct**

**You have been tasked with auditing the security of your VPC. As part of this process, you need to start by analyzing what traffic is allowed to and from various EC2 instances. What two parts of the VPC do you need to check to accomplish this task?**

- Security Groups and NACLs

  **(Correct)**
- Security Groups and Internet Gateways
- NACLs and Traffic Manager
- NACLs and Subnets

*Explanation*

Security Groups and NACLs are the two parts of the VPC Security Layer. Security Groups are a firewall at the instance layer, and NACLs are a firewall at the subnet layer.

***The other options are incorrect:***

***"NACLs and Traffic Manager" is incorrect.*** Traffic manager is an Azure service not AWS.

***"Security Groups and Internet Gateways" is incorrect.*** Internet Gateways provide access for a VPC and subnet to reach the internet. They are not directly attached to EC2 instances.

***"NACLs and Subnets" is incorrect.*** Subnets are where EC2 instances reside, but they do not actually control ingress and egress traffic themselves.

**References:**

https://docs.aws.amazon.com/vpc/latest/userguide/VPC_Security.html

Question 64: Correct

**Which of the following procedures can reduce latency when your end users are retrieving data? (Choose TWO)**

- Store media assets in S3 and use CloudFront to distribute these assets

  **(Correct)**

- Replicate media assets to at least two availability zones

- Reduce the size of media assets using the Amazon Elastic Transcoder

- Store media assets in the region closest to your end users

  **(Correct)**

- Store media assets on an additional EBS volume and increase the capacity of your server

*Explanation*

Amazon CloudFront is a fast content delivery network (CDN) service that securely delivers data, videos, applications, and APIs to customers globally with low latency and high transfer speeds.

CloudFront is the best solution to reduce latency if you have users from different places around the world.

Storing media assets in a region closer to the end-users can help reduce latency for those users. This is because these assets will travel a shorter distance over the network.

***The other options are incorrect:***

***"Store media assets on an additional EBS volume and increase the capacity of your server" is incorrect.*** Storing media assets on an additional EBS volume or increasing the capacity of your server does nothing with regards to latency. The question doesn't mention that you are facing heavy workloads. Therefore increasing the capacity of your EC2 instances to higher types will be a waste of money in this scenario.

***"Replicate media assets to at least two availability zones" is incorrect.*** Replicating your media assets on at least two availability zones may improve the availability of your application but will not reduce latency especially if these AZs exist in the same region.

***"Reduce the size of media assets using the Amazon Elastic Transcoder" is incorrect.*** Amazon Elastic Transcoder lets you convert media files that you have stored in Amazon S3 into media files in the formats required by consumer playback devices. For example, you can convert large, high-quality digital media files into formats that users can play back on mobile devices, tablets, web browsers, and connected televisions.

**References:**

https://aws.amazon.com/cloudfront/

https://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/Concepts.RegionsAndAvailabilityZones.html

Question 65: Correct

**Which of the following makes it easier for you to categorize, manage and filter your resources?**

- AWS Directory Service
- AWS Tagging

  **(Correct)**
- Amazon CloudWatch
- AWS Service Catalog

*Explanation*

Amazon Web Services (AWS) allows customers to assign metadata to their AWS resources in the form of tags. Each tag is a simple label consisting of a customer-defined key and an optional value that can make it easier to manage, search for, and filter resources. Although there are no inherent types of tags, they enable customers to categorize resources by purpose, owner, environment, or other criteria.

***The other options are incorrect:***

***AWS Directory Service is incorrect.*** AWS Directory Service for Microsoft Active Directory, also known as AWS Managed Microsoft AD, enables your directory-aware workloads and AWS resources to use managed Active Directory in the AWS Cloud.

***Amazon CloudWatch is incorrect.*** Amazon CloudWatch is a monitoring service for resource utilization.

***AWS Service Catalog is incorrect.*** AWS Service Catalog is not used to filter your resources. It is used to create and manage catalogs of IT services that are approved for use on AWS. This helps you achieve consistent governance and meet your compliance requirements, while enabling users to quickly deploy only the approved IT services they need.

**References:**

https://aws.amazon.com/answers/account-management/aws-tagging-strategies/