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October 19, 2022
★★★★★

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Dana
September 04, 2022
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2 months ago
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Thank You certyiq team!

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Amazon

(AWS Certified AI Practitioner AIF-C01)

AWS Certified AI Practitioner AIF-C01

Question: 1

A company makes forecasts each quarter to decide how to optimize operations to meet expected demand. The company uses ML models to make these forecasts.
An AI practitioner is writing a report about the trained ML models to provide transparency and explainability to company stakeholders.
What should the AI practitioner include in the report to meet the transparency and explainability requirements?

    A.Code for model training

    B.Partial dependence plots (PDPs)

    C.Sample data for training

    D.Model convergence tables

Answer: B

Explanation:

B. Partial Dependence Plots (PDPs)

Partial Dependence Plots (PDPs) are useful tools for understanding the relationship between specific features and the model's predictions, making it easier to see how changes in input variables affect the forecast. PDPs are particularly helpful for stakeholders because they visually show the impact of individual features on predictions without requiring a deep understanding of the model's inner workings.

Question: 2

A law firm wants to build an AI application by using large language models (LLMs). The application will read legal documents and extract key points from the documents.
Which solution meets these requirements?

    A.Build an automatic named entity recognition system.

    B.Create a recommendation engine.

    C.Develop a summarization chatbot.

    D.Develop a multi-language translation system.

Answer: C

Explanation:

C. Develop a summarization chatbot.

A summarization chatbot can leverage large language models (LLMs) to automatically read and extract key points from legal documents by summarizing the content. This approach aligns well with the firm's need to condense lengthy documents into concise, relevant summaries, making it easier for users to quickly understand the main points without reading the entire document. LLMs are highly effective at summarization tasks, especially when fine-tuned on domain-specific data like legal text.

Question: 3

A company wants to classify human genes into 20 categories based on gene characteristics. The company needs an ML algorithm to document how the inner mechanism of the model affects the output.
Which ML algorithm meets these requirements?

A.Decision trees

B.Linear regression

C.Logistic regression

D.Neural networks

Answer: A

Explanation:

Decision Trees can handle multi-class classification problems, making them suitable for categorizing genes into 20 distinct classes.

Question: 4

A company has built an image classification model to predict plant diseases from photos of plant leaves. The company wants to evaluate how many images the model classified correctly.
Which evaluation metric should the company use to measure the model's performance?

A.R-squared score

B.Accuracy

C.Root mean squared error (RMSE)

D.Learning rate

Answer: B

Explanation:

Accuracy is the most straightforward metric, measuring the proportion of correctly predicted instances out of the total instances. It is suitable when the classes are balanced (but can be misleading for imbalanced datasets).

Question: 5

A company is using a pre-trained large language model (LLM) to build a chatbot for product recommendations. The company needs the LLM outputs to be short and written in a specific language.
Which solution will align the LLM response quality with the company's expectations?

A.Adjust the prompt.

B.Choose an LLM of a different size.

C.Increase the temperature.

D.Increase the Top K value.

Answer: A

Explanation:

Correct answer is A:Adjust the prompt.

Question: 6

A company uses Amazon SageMaker for its ML pipeline in a production environment. The company has large input data sizes up to 1 GB and processing times up to 1 hour. The company needs near real-time latency.
Which SageMaker inference option meets these requirements?

 A.Real-time inference

 B.Serverless inference

 C.Asynchronous inference

 D.Batch transform

Answer: C

Explanation:

Real-Time Inference: Immediate responses for high-traffic, low-latency applications.

>> Asynchronous Inference: Near real-time for large payloads and longer processing.

Batch Transform: Large-scale, offline processing without real-time needs.

Serverless Inference: Low-latency inference for intermittent or unpredictable traffic without managing infrastructure.

Question: 7

A company is using domain-specific models. The company wants to avoid creating new models from the beginning. The company instead wants to adapt pre-trained models to create models for new, related tasks.
Which ML strategy meets these requirements?

 A.Increase the number of epochs.

 B.Use transfer learning.

 C.Decrease the number of epochs.

 D.Use unsupervised learning.

Answer: B

Explanation:

Transfer learning involves taking a pre-trained model, which has been trained on a large dataset, and adapting it to a new, related task. This approach offers several advantages.TL where a model pre-trained on one task is fine-tuned for a new, related task.

Question: 8

A company is building a solution to generate images for protective eyewear. The solution must have high accuracy and must minimize the risk of incorrect annotations.
Which solution will meet these requirements?

 A.Human-in-the-loop validation by using Amazon SageMaker Ground Truth Plus

 B.Data augmentation by using an Amazon Bedrock knowledge base

 C.Image recognition by using Amazon Rekognition

 D.Data summarization by using Amazon QuickSight Q

Answer: A

Explanation:

Human-in-the-loop validation by using Amazon SageMaker Ground Truth Plus.

Reference:

https://aws.amazon.com/sagemaker/groundtruth/features/

Question: 9 Certy**IQ**

A company wants to create a chatbot by using a foundation model (FM) on Amazon Bedrock. The FM needs to access encrypted data that is stored in an Amazon S3 bucket. The data is encrypted with Amazon S3 managed keys (SSE-S3).
The FM encounters a failure when attempting to access the S3 bucket data.
Which solution will meet these requirements?

A.Ensure that the role that Amazon Bedrock assumes has permission to decrypt data with the correct encryption key.

B.Set the access permissions for the S3 buckets to allow public access to enable access over the internet.

C.Use prompt engineering techniques to tell the model to look for information in Amazon S3.

D.Ensure that the S3 data does not contain sensitive information.

Answer: A

Explanation:

Ensure that the role that Amazon Bedrock assumes has permission to decrypt data with the correct encryption key.

Question: 10 Certy**IQ**

A company wants to use language models to create an application for inference on edge devices. The inference must have the lowest latency possible.
Which solution will meet these requirements?

A.Deploy optimized small language models (SLMs) on edge devices.

B.Deploy optimized large language models (LLMs) on edge devices.

C.Incorporate a centralized small language model (SLM) API for asynchronous communication with edge devices.

D.Incorporate a centralized large language model (LLM) API for asynchronous communication with edge devices.

Answer: A

Explanation:

Deploy optimized small language models (SLMs) on edge devices.

Question: 11 Certy**IQ**

A company wants to build an ML model by using Amazon SageMaker. The company needs to share and manage variables for model development across multiple teams.
Which SageMaker feature meets these requirements?

   A.Amazon SageMaker Feature Store

   B.Amazon SageMaker Data Wrangler

   C.Amazon SageMaker Clarify

   D.Amazon SageMaker Model Cards

Answer: A

Explanation:

Amazon SageMaker Feature Store ensures all teams have access to a centralized store of features, improving consistency and collaboration in ML workflows.

Question: 12

A company wants to use generative AI to increase developer productivity and software development. The company wants to use Amazon Q Developer.
What can Amazon Q Developer do to help the company meet these requirements?

   A.Create software snippets, reference tracking, and open source license tracking.

   B.Run an application without provisioning or managing servers.

   C.Enable voice commands for coding and providing natural language search.

   D.Convert audio files to text documents by using ML models.

Answer: A

Explanation:

Create software snippets, reference tracking, and open source license tracking.

Question: 13

A financial institution is using Amazon Bedrock to develop an AI application. The application is hosted in a VPC. To meet regulatory compliance standards, the VPC is not allowed access to any internet traffic.
Which AWS service or feature will meet these requirements?

   A.AWS PrivateLink

   B.Amazon Macie

   C.Amazon CloudFront

   D.Internet gateway

Answer: A

Explanation:

AWS PrivateLink enables secure, private connectivity between Virtual Private Cloud (VPC) environments and AWS services without exposing traffic to the public internet.

Question: 14

A company wants to develop an educational game where users answer questions such as the following: "A jar contains six red, four green, and three yellow marbles. What is the probability of choosing a green marble from the jar?"
Which solution meets these requirements with the LEAST operational overhead?

A.Use supervised learning to create a regression model that will predict probability.

B.Use reinforcement learning to train a model to return the probability.

C.Use code that will calculate probability by using simple rules and computations.

D.Use unsupervised learning to create a model that will estimate probability density.

Answer: C

Explanation:

Use code that will calculate probability by using simple rules and computations.

Question: 15

Which metric measures the runtime efficiency of operating AI models?

A.Customer satisfaction score (CSAT)

B.Training time for each epoch

C.Average response time

D.Number of training instances

Answer: C

Explanation:

Average response time refers to the time taken by an AI model to produce a result after receiving an input. It is a critical metric for assessing the runtime efficiency of an AI model during inference, particularly in applications where quick responses are essential, such as in real-time applications or interactive systems.

Question: 16

A company is building a contact center application and wants to gain insights from customer conversations. The company wants to analyze and extract key information from the audio of the customer calls.
Which solution meets these requirements?

A.Build a conversational chatbot by using Amazon Lex.

B.Transcribe call recordings by using Amazon Transcribe.

C.Extract information from call recordings by using Amazon SageMaker Model Monitor.

D.Create classification labels by using Amazon Comprehend.

Answer: B

Explanation:

Transcribe call recordings by using Amazon Transcribe.

A company has petabytes of unlabeled customer data to use for an advertisement campaign. The company wants to classify its customers into tiers to advertise and promote the company's products.
Which methodology should the company use to meet these requirements?

A.Supervised learning

B.Unsupervised learning

C.Reinforcement learning

D.Reinforcement learning from human feedback (RLHF)

Answer: B

Explanation:

Unsupervised learning is a right answer.

An AI practitioner wants to use a foundation model (FM) to design a search application. The search application must handle queries that have text and images.
Which type of FM should the AI practitioner use to power the search application?

A.Multi-modal embedding model

B.Text embedding model

C.Multi-modal generation model

D.Image generation model

Answer: A

Explanation:

Multi-modal embedding models can process multiple types of input data, such as text and images. This allows the search application to handle queries that involve both text and images effectively.

A company uses a foundation model (FM) from Amazon Bedrock for an AI search tool. The company wants to fine-tune the model to be more accurate by using the company's data.
Which strategy will successfully fine-tune the model?

A.Provide labeled data with the prompt field and the completion field.

B.Prepare the training dataset by creating a .txt file that contains multiple lines in .csv format.

C.Purchase Provisioned Throughput for Amazon Bedrock.

D.Train the model on journals and textbooks.

Answer: A

Explanation:

Provide labeled data with the prompt field and the completion field.

Question: 20

A company wants to use AI to protect its application from threats. The AI solution needs to check if an IP address is from a suspicious source.
Which solution meets these requirements?

   A.Build a speech recognition system.

   B.Create a natural language processing (NLP) named entity recognition system.

   C.Develop an anomaly detection system.

   D.Create a fraud forecasting system.

Answer: C

Explanation:

An anomaly detection system is designed to identify unusual patterns or behaviours within data.

Question: 21

Which feature of Amazon OpenSearch Service gives companies the ability to build vector database applications?

   A.Integration with Amazon S3 for object storage

   B.Support for geospatial indexing and queries

   C.Scalable index management and nearest neighbor search capability

   D.Ability to perform real-time analysis on streaming data

Answer: C

Explanation:

Amazon OpenSearch Service provides scalable index management and nearest neighbor search capabilities, which are essential for building vector database applications.

Question: 22

Which option is a use case for generative AI models?

   A.Improving network security by using intrusion detection systems

   B.Creating photorealistic images from text descriptions for digital marketing

   C.Enhancing database performance by using optimized indexing

   D.Analyzing financial data to forecast stock market trends

Answer: B

Explanation:

Creating photorealistic images from text descriptions for digital marketing.

A company wants to build a generative AI application by using Amazon Bedrock and needs to choose a foundation model (FM). The company wants to know how much information can fit into one prompt.
Which consideration will inform the company's decision?

A.Temperature

B.Context window

C.Batch size

D.Model size

Answer: B

Explanation:

The context window refers to the maximum number of tokens (words or pieces of words) that a foundation model can process in a single input prompt.

A company wants to make a chatbot to help customers. The chatbot will help solve technical problems without human intervention.
The company chose a foundation model (FM) for the chatbot. The chatbot needs to produce responses that adhere to company tone.
Which solution meets these requirements?

A.Set a low limit on the number of tokens the FM can produce.

B.Use batch inferencing to process detailed responses.

C.Experiment and refine the prompt until the FM produces the desired responses.

D.Define a higher number for the temperature parameter.

Answer: C

Explanation:

Experiment and refine the prompt until the FM produces the desired responses.

A company wants to use a large language model (LLM) on Amazon Bedrock for sentiment analysis. The company wants to classify the sentiment of text passages as positive or negative.

Which prompt engineering strategy meets these requirements?

A.Provide examples of text passages with corresponding positive or negative labels in the prompt followed by the new text passage to be classified.

B.Provide a detailed explanation of sentiment analysis and how LLMs work in the prompt.

C.Provide the new text passage to be classified without any additional context or examples.

D.Provide the new text passage with a few examples of unrelated tasks, such as text summarization or question answering.

Answer: A

Explanation:

Provide examples of text passages with corresponding positive or negative labels in the prompt followed by the new text passage to be classified.

Question: 26   CertyIQ

A security company is using Amazon Bedrock to run foundation models (FMs). The company wants to ensure that only authorized users invoke the models. The company needs to identify any unauthorized access attempts to set appropriate AWS Identity and Access Management (IAM) policies and roles for future iterations of the FMs. Which AWS service should the company use to identify unauthorized users that are trying to access Amazon Bedrock?

   A.AWS Audit Manager

   B.AWS CloudTrail

   C.Amazon Fraud Detector

   D.AWS Trusted Advisor

Answer: B

Explanation:

B. AWS CloudTrail is the most suitable service for identifying unauthorized access attempts to Amazon Bedrock, as it provides detailed logging and monitoring of API calls across AWS services, helping to enforce security and compliance.

Question: 27   CertyIQ

A company has developed an ML model for image classification. The company wants to deploy the model to production so that a web application can use the model.
The company needs to implement a solution to host the model and serve predictions without managing any of the underlying infrastructure.
Which solution will meet these requirements?

   A.Use Amazon SageMaker Serverless Inference to deploy the model.

   B.Use Amazon CloudFront to deploy the model.

   C.Use Amazon API Gateway to host the model and serve predictions.

   D.Use AWS Batch to host the model and serve predictions.

Answer: A

Explanation:

Serverless deployment: SageMaker Serverless Inference allows you to deploy ML models without managing any underlying infrastructure, which directly meets the company's requirement.

Question: 28   CertyIQ

An AI company periodically evaluates its systems and processes with the help of independent software vendors (ISVs). The company needs to receive email message notifications when an ISV's compliance reports become available.

Which AWS service can the company use to meet this requirement?

    A.AWS Audit Manager

    B.AWS Artifact

    C.AWS Trusted Advisor

    D.AWS Data Exchange

Answer: B

Explanation:

Reference:

https://docs.aws.amazon.com/artifact/latest/ug/what-is-aws-artifact.html

Question: 29

A company wants to use a large language model (LLM) to develop a conversational agent. The company needs to prevent the LLM from being manipulated with common prompt engineering techniques to perform undesirable actions or expose sensitive information.
Which action will reduce these risks?

    A.Create a prompt template that teaches the LLM to detect attack patterns.

    B.Increase the temperature parameter on invocation requests to the LLM.

    C.Avoid using LLMs that are not listed in Amazon SageMaker.

    D.Decrease the number of input tokens on invocations of the LLM.

Answer: A

Explanation:

A. Create a prompt template that teaches the LLM to detect attack patterns is the best action to reduce the risks associated with prompt manipulation and to enhance the security and integrity of the conversational agent being developed.

Question: 30

A company is using the Generative AI Security Scoping Matrix to assess security responsibilities for its solutions. The company has identified four different solution scopes based on the matrix.
Which solution scope gives the company the MOST ownership of security responsibilities?

    A.Using a third-party enterprise application that has embedded generative AI features.

    B.Building an application by using an existing third-party generative AI foundation model (FM).

    C.Refining an existing third-party generative AI foundation model (FM) by fine-tuning the model by using data specific to the business.

    D.Building and training a generative AI model from scratch by using specific data that a customer owns.

Answer: D

Explanation:

D. Building and training a generative AI model from scratch by using specific data that a customer owns gives the company the most ownership of security responsibilities, as they are responsible for all aspects of the

model's development and deployment.

Question: 31   CertyIQ

An AI practitioner has a database of animal photos. The AI practitioner wants to automatically identify and categorize the animals in the photos without manual human effort.
Which strategy meets these requirements?

   A.Object detection

   B.Anomaly detection

   C.Named entity recognition

   D.Inpainting

Answer: A

Explanation:

Object detection is the most appropriate strategy for automatically identifying and categorizing animals in a database of photos without manual human effort.

Question: 32   CertyIQ

A company wants to create an application by using Amazon Bedrock. The company has a limited budget and prefers flexibility without long-term commitment.
Which Amazon Bedrock pricing model meets these requirements?

   A.On-Demand

   B.Model customization

   C.Provisioned Throughput

   D.Spot Instance

Answer: A

Explanation:

On-Demand is the best pricing model for a company that has a limited budget and wants flexibility without long-term commitment when creating an application using Amazon Bedrock.

Question: 33   CertyIQ

Which AWS service or feature can help an AI development team quickly deploy and consume a foundation model (FM) within the team's VPC?

   A.Amazon Personalize

   B.Amazon SageMaker JumpStart

   C.PartyRock, an Amazon Bedrock Playground

   D.Amazon SageMaker endpoints

Answer: B

Explanation:

B. Amazon SageMaker JumpStart is the best option for quickly deploying and consuming a foundation model within a team's VPC, as it streamlines the process and provides ready-to-use resources.

Question: 34 CertyIQ

How can companies use large language models (LLMs) securely on Amazon Bedrock?

A.Design clear and specific prompts. Configure AWS Identity and Access Management (IAM) roles and policies by using least privilege access.

B.Enable AWS Audit Manager for automatic model evaluation jobs.

C.Enable Amazon Bedrock automatic model evaluation jobs.

D.Use Amazon CloudWatch Logs to make models explainable and to monitor for bias.

Answer: A

Explanation:

A. Design clear and specific prompts. Configure AWS Identity and Access Management (IAM) roles and policies by using least privilege access is the best approach for companies to securely use large language models on Amazon Bedrock, as it emphasizes both prompt clarity and access control.

Question: 35 CertyIQ

A company has terabytes of data in a database that the company can use for business analysis. The company wants to build an AI-based application that can build a SQL query from input text that employees provide. The employees have minimal experience with technology.
Which solution meets these requirements?

A.Generative pre-trained transformers (GPT)

B.Residual neural network

C.Support vector machine

D.WaveNet

Answer: A

Explanation:

Generative pre-trained transformers (GPT) are powerful natural language processing models that excel in understanding and generating human-like text. In this scenario, a GPT model can be trained or fine-tuned to take natural language input from employees and convert it into structured SQL queries. This makes it accessible for users who may not have technical expertise, allowing them to retrieve the data they need from the database using simple, conversational prompts.

Question: 36 CertyIQ

A company built a deep learning model for object detection and deployed the model to production.
Which AI process occurs when the model analyzes a new image to identify objects?

A.Training

B.Inference

C.Model deployment

D.Bias correction

Answer: B

Explanation:

Correct answer is B:Inference.

Question: 37

An AI practitioner is building a model to generate images of humans in various professions. The AI practitioner discovered that the input data is biased and that specific attributes affect the image generation and create bias in the model.
Which technique will solve the problem?

A.Data augmentation for imbalanced classes

B.Model monitoring for class distribution

C.Retrieval Augmented Generation (RAG)

D.Watermark detection for images

Answer: A

Explanation:

A. Data augmentation for imbalanced classes is the most effective technique to mitigate bias in the input data by ensuring a more balanced representation of classes and attributes in the training set, leading to fairer and more accurate image generation.

Question: 38

A company is implementing the Amazon Titan foundation model (FM) by using Amazon Bedrock. The company needs to supplement the model by using relevant data from the company's private data sources.
Which solution will meet this requirement?

A.Use a different FM.

B.Choose a lower temperature value.

C.Create an Amazon Bedrock knowledge base.

D.Enable model invocation logging.

Answer: C

Explanation:

C. Create an Amazon Bedrock knowledge base.This would allow the company use the knowledge base for Retrieval Augmented Generation (RAG) to enhance the model's knowledge with company's private data sources.

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