Section-Based – Fundamentals of AI and ML (AIF-C01)

!!BEST OF LUCK!!

Ques 1: An e-commerce company uses Amazon SageMaker to build an ML model for customer review segmentation. They need a feature for efficient data cleansing and preparation with minimal coding.

Which SageMaker feature should they use?

a) Amazon SageMaker Feature Store
b) Amazon SageMaker Ground Truth
c) Amazon SageMaker Data Wrangler
d) Amazon SageMaker Autopilot

Ans: Amazon SageMaker Data Wrangler

Ques 2: An AI specialist is working with a deep-learning model in Amazon SageMaker. The model, which includes a softmax layer, is too large to fit into the memory of a single GPU, and the training dataset is also quite extensive. The specialist must choose a SageMaker built-in option to optimize the training process and manage the large model and dataset.

Which SageMaker built-in options should the specialist use to handle training of large model sizes?

a) Pipe Mode
b) Managed Spot Training
c) Incremental Training
d) Model Parallelism

Ans: Model Parallelism

Ques 3: What term refers to a branch of AI that enables systems to learn and make predictions based on data without being explicitly structured?

a) Machine Learning

b) Object-oriented programming

c) Predictive analytics

d) Natural Language Processing (NLP)

Ans: Machine Learning

Ques 4: A financial company is using an AI model to identify potential loan defaults. To ensure the model works well in production, they must set up processes for capturing real-time data, comparing it with the training set, detecting performance issues, and generating alerts.

Which stage of the model development pipeline should the company focus on?

a) Data Collection

b) Model Training

c) Model Monitoring

d) Model Evaluation

Ans: Model Monitoring

Ques 5: A financial expert is building a model to predict the future value of a portfolio based on historical performance, asset allocation, and market trends. The prediction model will help in making investment decisions and optimizing the portfolio allocation strategy.

Which machine-learning technique should be considered to meet this objective?

a) Dimensionality reduction

b) Anomaly detection

c) Probability density

d) Linear regression

Ans: Linear regression

Ques 6: A healthcare insurance company manually extracts sensitive information from claims forms and accompanying attachments. This manual process has led to significant delays for customers seeking healthcare benefits. To improve customer service and reduce the manual labor involved, the company wants to automate the extraction process to expedite the handling and processing of claims.

Which AWS service will help meet the company's objectives?

a) Amazon Lex

b) Amazon Comprehend

c) Amazon Personalize

d) Amazon Textract

Ans: Amazon Textract

Ques 7: A financial company has collected 2 years of daily transaction data stored in an Amazon S3 bucket. To enhance liquidity management, financial planning, and resource allocation, they plan to develop a machine-learning model to forecast transaction volumes for the next 90 days.

Which type of algorithm should the company use?

a) Clustering algorithm

b) Forecasting algorithm

c) Object2Vec algorithm

d) Linear Learner algorithm

Ans: Forecasting algorithm

Ques 8: An e-commerce company is developing a model using Amazon SageMaker to forecast the probability of a product being returned after purchase. The company owns a labeled dataset containing product categories, prices, customer reviews, and return status stored in an Amazon S3 bucket.

What machine learning approach is most appropriate for this task?

a) Few-shot learning

b) Unsupervised learning

c) Transfer learning

d) Supervised learning

Ans: Supervised learning

Ques 9: A legal firm has a large collection of scanned legal documents and case files in PDF format. They need a system to automate text extraction, identify key elements like tables and forms, and analyze image content to minimize manual intervention.

Which AWS services will most efficiently meet the firm's needs with LEAST operational management? (Select TWO.)

a) Amazon Rekognition

b) Amazon Textract

c) Amazon Comprehend

d) Amazon Personalize

e) Amazon Kendra

Ans: Amazon Rekognition & Amazon Textract

Ques 10: A streaming service wants to analyze its user data to improve content recommendations. The data science team needs to group users with similar viewing habits, identify common patterns in the types of shows watched together, and estimate how users' preferences are spread across different genres.

Match each unsupervised learning approach the data science team must consider with its correct objective. (Select THREE.)

To estimate how users' preferences are spread across different genres.:

a) Linear regression
b) Neural network
c) Probability density
d) Decision tree

Ans: Probability density

To identify common patterns in the types of shows watched together.:

a) Logistic regression
b) Association rule learning
c) Decision tree
d) Linear regression

Ans: Association rule learning

To group users with similar viewing habits.:

a) Probability density
b) Clustering
c) Dimensionality reduction
d) Association rule learning

Ans: Clustering

Ques 11: Select the correct Amazon SageMaker AI inference options from the following list for each job. Each inference option may be selected one or more times. (Select THREE.)

Use for low-latency workloads with predictable traffic patterns that need consistent latency characteristics and are always available.:

a) Asynchronous Inference
b) Batch Inference
c) Serverless Inference
d) Real-time Inference

Ans: Real-time Inference

Ideal for synchronous workloads with spiky traffic patterns that can tolerate latency variations:

a) Real-time Inference
b) Serverless Inference
c) Asynchronous Inference
d) Batch Inference

Ans: Serverless Inference

Choose for processing large sets of data offline without requiring a persistent endpoint:

a) Batch Inference
b) Asynchronous Inference
c) Real-time Inference
d) Serverless Inference

Ans: Batch Inference

Ques 12: A financial services company is building a machine-learning model to detect fraudulent transactions. The data science team is using Amazon SageMaker Pipelines to automate their machine learning

workflows. They need to complete several tasks to ensure the accuracy and efficiency of their model.

Choose the appropriate Amazon SageMaker Pipelines step for each task from the list below. Each step should be selected only once. (Select FOUR.)

Deploy the trained model to a hosting environment for inference.:

a) CreateModel
b) QualityCheck
c) Training
d) Processing

Ans: CreateModel

Train the machine learning model using the prepared data:

a) Processing
b) Training
c) CreateModel
d) QualityCheck

Ans: Training

Evaluate the trained model to ensure it meets the required performance standards.

a) QualityCheck
b) Processing
c) Training
d) CreateModel

Ans: QualityCheck

Preprocess the dataset, including feature engineering, to make it suitable for training.

a) Processing
b) Training
c) CreateModel
d) QualityCheck

Ans: Processing

Ques 13: A fintech company is developing an AI-based system for detecting fraudulent activities. The company must implement security measures to ensure data integrity, safeguard user privacy, and comply with regulations. The goal is to align security strategies with relevant foundational security capabilities.

Match each foundational security capability with its relevant strategy for securing the AI-powered fraud detection system. Each capability should be selected once only. (Select THREE.)

It ensures that visibility, secure access, and control over the data used for AI development and implementation are maintained:

a) Data protection
b) Infrastructure protection
c) Threat detection
d) Application security

Ans: Data protection

Implement real-time monitoring and anomaly detection tools to identify and respond to potential security incidents in AI workloads:

a) Threat detection
b) Application security
c) Infrastructure protection
d) Data protection

Ans: Threat detection

It ensure that vulnerabilities are identified and addressed throughout the software development lifecycle for AI workloads:

a) Data protection
b) Infrastructure protection
c) Application security
d) Threat detection

Ans: Application security

Ques 14: A technology company is working on multiple cutting-edge projects that require various machine learning models to solve distinct challenges. These projects cover areas such as natural language processing, customer behavior prediction, and content creation for marketing. The team must decide which type of machine learning model best fits each specific project.

For each of the following use cases, choose the most appropriate machine learning model type from the list provided. Some model types may be used more than once. (Select FOUR.)

Translate patents from English to French, including embedded images like technical diagrams:

a) Traditional ML model
b) Generative AI model

Ans: Generative AI model

Predict customer subscription cancellations for a telecom provider based on historical usage data:

a) Traditional ML model
b) Generative AI model

Ans: Traditional ML model

Create innovative visual designs from text-based advertising briefs:

a) Generative AI model
b) Traditional ML model

Ans: Generative AI model

Identify the sentiment behind customer feedback and social media posts.

a) Generative AI model
b) Traditional ML model

Ans: Traditional ML model

Ques 15: A company wants to customize a foundational model using Amazon Bedrock.

Select and order the prerequisites for customizing a foundational model. Each step should be selected one time. (Select and order THREE.)

Create a training job in Amazon SageMaker.

- **Prepare the training dataset**
- **Set the maximum tokens for model responses**
- **Purchase Provisioned Throughput**
- **Evaluate the results of model training**
- **Configure AWS KMS keys**
- **Create a fine-tuning or pre-training job**

Ans: 1) Prepare the training dataset

2) Create a fine-tuning or pre-training job

3) Purchase Provisioned Throughput