

Section-Based – Fundamentals of Generative AI (AIF-C01)

!!BEST OF LUCK!!

Ques 1: A machine learning engineer is evaluating the performance of a generative model system used for customer support. The engineer needs to identify key performance metrics and optimize the model for better response accuracy and efficiency.

Which business metric would best evaluate the model's performance?

- a) Average response time
- b) AWS Customer Reviews
- c) Customer satisfaction
- d) Conversion rate

Ans: Customer satisfaction

Ques 2: An AI specialist is testing a chatbot that uses an embedding model to provide recommendations based on user input. The specialist types "good Japanese restaurants" into the chatbot.

What would the embedding model generate?

- a) A summary of the user's preferences based on the input.
- b) A sentiment score indicating how relevant the request is to the context.
- c) A numerical representation of the phrase.
- d) An array of 1s and 0s indicating how relevant the request is to the context

Ans: A numerical representation of the phrase.

Ques 3: A company is developing an application for document summarization using a large language model (LLM). They will use embeddings to help the model understand and process information more effectively.

Why are embeddings important for the LLM in generating accurate summaries?

- a) They ensure the output words are in their base or root forms.
- b) They break the text into smaller units, such as words or subwords, to assist in translation.
- c) They compress the entire document into a single text file.
- d) They convert textual content into numerical vectors that represent semantic meaning.

Ans: They convert textual content into numerical vectors that represent semantic meaning.

Ques 4: A project involves generating product descriptions for an e-commerce website using a dataset of existing product descriptions from the site.

Which fine-tuning approach is most appropriate for adapting a pre-trained language model to generate product descriptions similar to those in the dataset?

- a) Domain adaptation fine-tuning
- b) Instruction-based fine-tuning
- c) Unsupervised pre-training
- d) Transfer learning

Ans: Domain adaptation fine-tuning

Ques 5: A travel agency needs to fine-tune a foundation model (FM) to assist customers by providing detailed trip planning advice, handling multi-turn conversations about travel preferences, and making personalized recommendations.

Which method will satisfy these requirements?

- a) Zero-shot learning
- b) Domain adaptation fine-tuning
- c) Instruction-based fine-tuning
- d) Few-shot learning

Ans: Instruction-based fine-tuning

Ques 6: An organization plans to leverage generative AI to craft personalized marketing content for their campaigns.

Which foundational AI capability is essential to ensure generative AI's effective and responsible use?

- a) Business Perspective
- b) Security Perspective
- c) Governance Perspective
- d) People Perspective

Ans: Governance Perspective

Ques 7: A retail company wants a chatbot to assist customers with product recommendations and order inquiries. The chatbot must use the product catalog and order history stored in Amazon S3. The company needs a fully managed service that handles natural language understanding, model selection, and conversation flow with minimal setup and maintenance.

Which AWS service would be the MOST suitable choice for this use case?

- a) Amazon Transcribe
- b) Amazon Q Business
- c) Amazon Kendra
- d) Amazon Lex

Ans: Amazon Lex

Ques 8: A company is considering implementing generative AI models to enhance its customer support system. However, the technical team is concerned about the potential disadvantages and limitations of using such models in production. They need to identify the specific challenges that may arise when working with generative AI.

What are some common challenges or drawbacks associated with using generative AI models? (Select TWO.)

- a) Hallucination
- b) Fraud detection
- c) Personalization
- d) Low Recall
- e) Knowledge Cutoff

Ans: Hallucination & Knowledge Cutoff

Ques 9: An ML specialist has created a foundation model for a customer support chatbot. The bot's responses are accurate but don't align with the company's formatting. The specialist wants to adjust the responses to match the company's branding without high costs.

Which method will fulfill these requirements in the most cost-efficient manner?

- a) Feature engineering
- b) Data preprocessing
- c) Prompt engineering

- d) Hyperparameter tuning

Ans: Prompt engineering

Ques 10: A small e-commerce company wants to use machine learning to improve its churn prediction. However, the company does not have a dedicated data science team and is looking for a low-code or no-code solution to get started with machine learning.

Match the company's requirements to the most suitable Amazon SageMaker feature. (Select THREE.)

Start quickly with pre-built solutions and models to accelerate development

- a) Amazon SageMaker Clarify
- b) Amazon SageMaker Canvas
- c) Amazon SageMaker JumpStart
- d) Amazon SageMaker Studio Lab

Ans: Amazon SageMaker JumpStart

Prepare and transform data for machine learning models using an intuitive interface:

- a) Amazon SageMaker Data Wrangler
- b) Amazon SageMaker JumpStart
- c) Amazon SageMaker Canvas
- d) Amazon SageMaker Model Monitor

Ans: Amazon SageMaker Data Wrangler

Build ML models with no code by simply interacting with data and obtaining predictions:

- a) Amazon SageMaker Canvas
- b) Amazon SageMaker Data Wrangler
- c) Amazon SageMaker JumpStart
- d) Amazon SageMaker Clarify

Ans: Amazon SageMaker Canvas

Ques 11: A company uses a generative AI model to automate content creation for its social media posts. The model has been trained on various topics, including technology, fashion, and travel. Recently, the company decided to expand its business into the fitness industry.

Which capability of generative AI will be crucial for the model to adjust its output and generate relevant fitness-related content?

- a) Creativity and exploration
- b) Adaptability
- c) Responsiveness
- d) Scalability

Ans: Adaptability

Ques 12: An e-commerce company is designing a chatbot to assist customers with product inquiries, order status updates, and troubleshooting.

Which capability of AI is most relevant for ensuring that the chatbot provides real-time responses to customer queries?

- a) Adaptability
- b) Simplicity
- c) Responsiveness
- d) Data Efficiency

Ans: Responsiveness

Ques 13: A company is developing a language model to assist with various text-generation tasks. The company wants to use different prompt engineering techniques to optimize the model's performance across different types of prompts.

Match the prompt engineering technique to the appropriate description of its application from the options provided. Each technique may be used once, more than once, or not at all. (Select THREE)

Use a prompt that includes several examples of the task to guide the model in producing accurate responses:

- a) Zero-shot prompting
- b) Chain-of-thought prompting
- c) Few-shot prompting
- d) Self-refine prompting

Ans: Few-shot prompting

Use a prompt that breaks down a complex task into smaller, logical steps for the model to follow:

- a) Chain-of-thought prompting
- b) Self-refine prompting
- c) Zero-shot prompting
- d) Few-shot prompting

Ans: Chain-of-thought prompting

Use a prompt where the model performs a task based only on its general knowledge, without any examples provided:

- a) Chain-of-thought prompting
- b) Zero-shot prompting
- c) Self-refine prompting
- d) Few-shot prompting

Ans: Zero-shot prompting

Ques 14: A tech company is integrating various generative AI models to enhance its products and services.

Select the correct type of generative AI model to meet each requirement. Each model can be selected one or more times. (Select FOUR.)

The company needs a model that can generate detailed and contextually accurate technical documentation based on sparse input data:

- a) Stable Diffusion model
- b) Foundation model
- c) Large language model
- d) Multimodal model

Ans: Large language model

The design team wants to create photorealistic images from abstract concepts described in text, ensuring high fidelity and detail:

- a) Multimodal model
- b) Stable Diffusion model
- c) Large language model
- d) Foundation model

Ans: Stable Diffusion model

The company requires a model that can simultaneously analyze and generate content involving text, images, and audio for an immersive virtual assistant:

- a) Stable Diffusion model
- b) Multimodal model
- c) Large language model
- d) Foundation model

Ans: Multimodal model

The company needs a robust and adaptable model that can be fine-tuned for a wide range of tasks, including natural language understanding, image recognition, and predictive analytics:

- a) Foundation model
- b) Stable Diffusion model
- c) Multimodal model
- d) Large language model

Ans: Foundation model

Ques 15: A company wants to implement a generative AI model using Amazon SageMaker to enhance its customer support chatbot. The model needs to be trained on a large dataset of customer interactions to provide real-time responses to customer queries.

Select and order the correct steps from the following list to complete the task. Each step should be selected one time or not at all. (Select and order THREE.)

- **Create a training job in Amazon SageMaker.**
- **Implement the model to the Amazon SageMaker endpoint.**
- **Upload the dataset to Amazon S3.**
- **Create an Amazon SageMaker notebook instance.**
- **Configure the training job to use the dataset from Amazon S3.**
- **Monitor the endpoint for real-time inference performance.**

Ans: 1) Upload the dataset to Amazon S3

2) Create a training job in Amazon SageMaker.

3) Configure the training job to use the dataset from Amazon S3.

