INT426 (Gen AI) CA1 Set 9

1. What is the primary objective of generative AI models in the context of data manipulation?

a. Categorize and label data for classification purposes

b. Generate entirely new data instances based on learned patterns

c. Enhance existing data by removing noise and outliers

d. Modify existing data structures to improve model accuracy

2. Among the following model types, which focuses on creating new content by understanding underlying patterns in the data?

a. Discriminative models that emphasize classification

b. Supervised models that rely on labeled data

c. Generative models that generate new instances

d. Regression models that predict numerical values

3. In the realm of natural language processing, what is a distinctive capability of Large Language Models (LLMs)?

a. Proficiency in image recognition tasks

b. Advanced speech synthesis capabilities

c. Expertise in understanding and generating human-like text

d. Efficient handling of structured data formats

4. When delving into the foundations of generative models, which concept plays a crucial role in modeling uncertainty and variability?

a. Feature extraction for enhanced model performance

b. Probability distribution to represent uncertainties in data

c. Advanced randomization techniques for improved diversity

d. Gradient descent methods for optimal model convergence

5. What is the specific focus of "crafting and refining prompts" when working with language models?

a. Modifying the underlying architecture of the language model

b. Fine-tuning hyperparameters for optimal performance

c. Iteratively improving input instructions to achieve desired model outputs

d. Evaluating and optimizing the model based on diverse datasets

6. In the practical application of language models, which hands-on exercises are essential for gaining proficiency?

a. Implementing sorting algorithms for efficient data processing

b. Crafting and refining prompts for language models

c. Building complex neural networks for various tasks

d. Developing algorithms for real-time data streaming

7. What distinguishes discriminative models from other types in the context of generative AI?

a. They have the ability to generate entirely new data instances.

b. Their primary focus is on classification tasks.

c. They mimic human behavior in decision-making.

d. They excel in reinforcement learning scenarios.

8. How does prompt engineering contribute to the overall effectiveness of language models?

a. By reducing the overall training time of the model

b. Through improving the interpretability of the model's outputs

c. By refining the input instructions to guide desired language outputs

d. Minimizing the complexity of the language model architecture

9. Which of the following is a common use case for generative models in the field of artificial intelligence?

a. Predicting stock prices based on historical data

b. Image classification for identifying objects in pictures

c. Text summarization to condense lengthy documents

d. Managing large-scale databases efficiently

10. Within the context of language models, what is the primary role of hyperparameter tuning in achieving optimal outputs?

a. Modifying the model architecture to accommodate additional features

b. Iteratively adjusting parameters to improve model interpretability

c. Refining input instructions for language models

d. Optimizing numerical values to enhance model performance

11. How do probability distributions contribute to the effectiveness of generative models?

a. By defining the likelihood of generating different data instances

b. Determining the overall accuracy of the classification process

c. Establishing the fundamental architecture of the model

d. Optimizing hyperparameters for model convergence

12. What distinguishes supervised learning from other learning paradigms?

a. Emphasizing prediction of outputs based on input data

b. Focusing on discovering patterns in unlabeled data

c. Incorporating feedback through rewards and punishments

d. Combining labeled and unlabeled data for training purposes

13. In generative models, what is a key advantage contributing to their ability to create diverse and novel content?

a. High interpretability of generated outputs

b. Robustness to external noise and disturbances

c. Creativity and variability in generating new instances

d. Low computational cost for training and inference

14. When crafting prompts for language models, what is the primary purpose?

a. Achieving complete memorization of input patterns

b. Enhancing the interpretability of model outputs

c. Guiding the language model to generate desired outputs

d. Minimizing the overall training time of the model

15. In the domain of generative AI, what does "LLM" specifically stand for?

a. Long-lasting Memory models

b. Large Language Models

c. Learning Linguistic Mechanisms

d. Logical Language Models

\*\*Answer Key:\*\*

1. b, 2. c, 3. c, 4. b, 5. c, 6. b, 7. b, 8. c, 9. c, 10. c, 11. a, 12. a, 13. c, 14. c, 15. b