INT426 (Gen AI) CA1 Set 10

1. What is the primary purpose of generative AI models in the context of data manipulation and generation?

a. Classifying data into predefined categories

b. Creating entirely new data instances based on learned patterns

c. Enhancing existing data by adding more features

d. Selecting relevant data points for analysis

2. Among the following model types, which one is specifically designed to generate new instances based on underlying data patterns?

a. Discriminative models emphasizing classification

b. Supervised models relying on labeled data

c. Generative models creating new data instances

d. Regression models predicting numerical values

3. In the field of natural language processing, what distinguishes Large Language Models (LLMs) from other model types?

a. Proficiency in image recognition tasks

b. Advanced capabilities in speech synthesis

c. Expertise in understanding and generating human-like text

d. Efficiency in handling structured data formats

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

a. Feature extraction for improved model understanding

b. Probability distribution to represent uncertainties in data

c. Advanced randomization techniques for diversity

d. Gradient descent methods for optimal convergence

5. What does the process of "crafting and refining prompts" involve when working with language models?

a. Modifying the underlying architecture of the language model

b. Fine-tuning hyperparameters for better model 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 crucial 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 sets discriminative models apart in the generative AI landscape?

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

b. Their primary focus is on classification tasks.

c. They mimic human decision-making behavior.

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 realm 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 the 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