Quiz Questions on Generative AI

1. Which of the following is a fundamental concept in generative AI?

A) Supervised learning

B) Unsupervised learning

C) Reinforcement learning

D) All of the above

2. What is the primary function of a generative AI model?

A) Classifying data

B) Generating new data

C) Predicting outcomes

D) Filtering information

3. Before the advent of Transformers, which architecture was commonly used for text generation?

A) LSTM

B) CNN

C) GAN

D) RNN

4. What was a significant drawback of pre-Transformer architectures for text generation?

A) Limited memory capacity

B) Inability to learn long-range dependencies

C) Slow training speed

D) High computational cost

5. The Transformer architecture was introduced in which seminal paper?

A) "Deep Learning for Natural Language Processing" by Bengio et al.

B) "Attention is All You Need" by Vaswani et al.

C) "Generative Adversarial Networks" by Goodfellow et al.

D) "Neural Machine Translation by Jointly Learning to Align and Translate" by Bahdanauetal.

6. What key component in the Transformer architecture helps capture long-range dependencies in text?

A) Activation functions

B) Attention mechanism

C) Pooling layers

D) Convolutional layers

7. In the Transformer architecture, what is the purpose of the encoder?

A) Generating text

B) Decoding text

C) Extracting features from input text

D) Calculating loss function

8. Which of the following is not a step in the typical lifecycle of a generative AI project?

A) Data collection and preprocessing

B) Model training and evaluation

C) Deployment and monitoring

D) Model interpretation and explanation

9. What is the primary use case of generative AI models in natural language processing?

A) Image classification

B) Speech recognition

C) Text summarization

D) Sentiment analysis

10. Which phase of the generative AI project lifecycle involves fine-tuning the model based on performance metrics?

A) Data preprocessing

B) Model training

C) Model evaluation

D) Model deployment

11. Which of the following is a key feature of Transformer-based language models like GPT?

A) Attention mechanism

B) Recurrent layers

C) Gradient boosting

D) Convolutional filters

12. What distinguishes generative AI from other AI approaches?

A) It only generates text

B) It requires labelled data for training

C) It can create new data similar to the input data

D) It relies solely on reinforcement learning algorithms

13. Which of the following is a limitation of earlier text generation models compared to Transformers?

A) Inability to generate coherent text

B) Limited vocabulary size

C) Difficulty in handling long sequences

D) High computational cost

14. What role does the decoder play in the Transformer architecture?

A) Encoding input text

B) Generating output text

C) Extracting features from input text

D) Calculating attention weights

15. What is the primary advantage of using the Transformer architecture for text generation tasks?

A) Faster training speed

B) Improved ability to handle long-range dependencies

C) Lower memory requirements

D) Higher interpretability

16. Which of the following is an example of a generative AI application outside of natural language processing?

A) Image segmentation

B) Speech synthesis

C) Stock price prediction

D) Email spam detection

17. What is the purpose of the attention mechanism in the Transformer architecture?

A) To increase computational efficiency

B) To focus on relevant parts of the input sequence

C) To prevent overfitting

D) To apply regularisation

18. Which phase of a generative AI project involves selecting the appropriate evaluation metrics?

A) Data preprocessing

B) Model training

C) Model evaluation

D) Model deployment

19. What distinguishes a generative AI model from a discriminative AI model?

A) Generative models only produce discrete outputs

B) Discriminative models can generate new data

C) Generative models can generate new data similar to the training data

D) Discriminative models cannot be used for text generation

20. What is the primary objective of text generation with large language models like GPT?

A) Minimising training time

B) Maximising computational resources

C) Achieving human-level performance

D) Increasing model complexity

Answers for the above questions

1. D

2. B

3. D

4. B

5. B

6. B

7. C

8. D

9. C

10. B

11. A

12. C

13. C

14. B

15. B

16. B

17. B

18. C

19. C

20. C