

Multiple-Choice Questions

(Slides)

1. What is Artificial Intelligence (AI)?

- A) The study of human psychology
- B) Machines performing tasks requiring human-like intelligence
- C) A type of robot manufacturing process
- D) A branch of biology

Answer: B

2. Which of the following is NOT a type of AI?

- A) Narrow AI
- B) General AI
- C) Super AI
- D) Advanced AI

Answer: D

3. What was the first mechanical calculating machine introduced by Blaise Pascal in 1642 called?

- A) Pascaline
- B) Analytical Engine
- C) Difference Engine
- D) Logic Theorist

Answer: A

4. What is the primary difference between AI and conventional programming?

- A) AI uses logical steps; programming uses patterns
- B) AI relies on search and pattern matching, while programming relies on logical steps
- C) AI and conventional programming are the same
- D) Programming uses data while AI uses logic

Answer: B

5. The term "Artificial Intelligence" was first coined in:

- A) 1950
- B) 1955
- C) 1956
- D) 1960

Answer: B

6. What does the Turing Test measure?

- A) Machine speed
- B) Computational power
- C) A machine's ability to exhibit human-like intelligence
- D) Memory capacity

Answer: C

7. Which AI type is dedicated to specific tasks?

- A) Super AI
- B) Narrow AI
- C) General AI
- D) None of the above

Answer: B

8. Which of these is a supervised learning algorithm?

- A) K-Means Clustering
- B) Support Vector Machines
- C) DBSCAN
- D) Gaussian Mixture Model

Answer: B

9. In supervised learning, the training data must:

- A) Be structured and unlabeled
- B) Contain labels for expected outputs
- C) Only include numerical data
- D) Exclude outliers

Answer: B

10. What is the goal of reinforcement learning?

- A) To identify patterns in unlabeled data
- B) To maximize a reward through trial and error
- C) To classify data into predefined categories
- D) To identify associations between data items

Answer: B

11. A neural network model designed for sequential data is called:

- A) Decision Tree
- B) Support Vector Machine
- C) Recurrent Neural Network
- D) Naïve Bayes Classifier

Answer: C

12. What is the key function of a cost function in machine learning?

- A) To minimize errors
- B) To store data
- C) To visualize data trends
- D) To evaluate external data

Answer: A

13. Which concept revolutionized large language models (LLMs)?

- A) Neural networks
- B) Transformers
- C) GANs
- D) Statistical Models

Answer: B

14. Which method is part of unsupervised learning?

- A) Regression
- B) Clustering
- C) Classification
- D) Decision Trees

Answer: B

15. A confusion matrix is used in:

- A) Clustering
- B) Feature scaling
- C) Model evaluation
- D) Hyperparameter tuning

Answer: C

16. Which of the following is NOT a step in supervised learning?

- A) Data labeling
- B) Feature engineering
- C) Model training
- D) Outlier generation

Answer: D

17. What is an example of a generative AI model?

- A) DBSCAN
- B) GANs
- C) SVM
- D) RNN

Answer: B

18. What type of model predicts continuous values?

- A) Classification
- B) Clustering
- C) Regression
- D) Reinforcement learning

Answer: C

19. Which machine learning type is used to predict stock prices?

- A) Regression
- B) Classification
- C) Clustering
- D) Reinforcement Learning

Answer: A

20. What does "context window" refer to in LLMs?

- A) The processing speed of a model
- B) The amount of memory used in training
- C) The span of tokens the model considers during input/output
- D) The size of the training dataset

Answer: C

21. A centroid in K-means clustering is:

- A) A classification boundary
- B) The average position of all points in a cluster
- C) A feature used for scaling
- D) A type of feature transformation

Answer: B

22. The sigmoid function is commonly used in:

- A) Regression
- B) Logistic Regression
- C) K-Means Clustering
- D) Reinforcement Learning

Answer: B

23. Fuzzy logic is used to handle:

- A) Clustering problems
- B) Binary classification
- C) Uncertainty in data
- D) High-dimensional data

Answer: C

24. The first chatbot, ELIZA, was designed to:

- A) Conduct weather forecasting
- B) Simulate a psychotherapist
- C) Manage data warehouses
- D) Perform clustering analysis

Answer: B

25. What is a key drawback of expert systems?

- A) Limited data requirements
- B) High adaptability
- C) Difficulty in scaling
- D) Lack of memory usage

Answer: C

26. What was the primary objective of the Dartmouth Conference in 1956?

- A) To build the first neural network
- B) To define the field of Artificial Intelligence
- C) To create expert systems
- D) To program the first chatbot

Answer: B

27. What is the focus of narrow AI?

- A) Transferring knowledge across domains
- B) Achieving human-level intelligence
- C) Performing specific tasks efficiently
- D) Creating general intelligence

Answer: C

28. Which of the following is NOT a branch of AI?

- A) Robotics
- B) Natural Language Processing
- C) Cloud Computing
- D) Machine Learning

Answer: C

29. Who proposed the concept of artificial neurons in 1943?

- A) Alan Turing
- B) Frank Rosenblatt
- C) Warren McCulloch and Walter Pitts
- D) Geoffrey Hinton

Answer: C

30. Which concept underpins the self-attention mechanism in transformers?

- A) Tokenization
- B) Neural networks
- C) Identifying important parts of input text
- D) Gradient descent

Answer: C

31. What does explainability in AI refer to?

- A) AI's ability to provide human-like answers
- B) The process of debugging AI systems
- C) Understanding how an AI model reaches its conclusions
- D) The transparency of AI datasets

Answer: C

32. What is the primary purpose of supervised machine learning?

- A) To cluster data into groups
- B) To predict outputs based on labeled inputs
- C) To analyze unlabeled data
- D) To generate synthetic data

Answer: B

33. Which of these is NOT a type of regression algorithm?

- A) Polynomial Regression
- B) Logistic Regression
- C) Support Vector Regression
- D) Decision Tree Classification

Answer: D

34. What does the term "bias" in AI often refer to?

- A) Computational speed
- B) Errors in training data
- C) Algorithm efficiency
- D) Overfitting of models

Answer: B

35. What is an essential step in the data preparation process for AI?

- A) Adding outliers
- B) Anonymizing data
- C) Removing patterns
- D) Ignoring missing data

Answer: B

36. In reinforcement learning, what mechanism is used to guide learning?

- A) Labels
- B) Data clustering
- C) Rewards and penalties
- D) Statistical programming

Answer: C

37. What is the main disadvantage of unsupervised learning?

- A) High reliance on labeled data
- B) Difficulty in interpreting clusters
- C) Limited scalability
- D) Slower training times

Answer: B

38. Which of the following is NOT a feature of big data?

- A) Velocity
- B) Veracity
- C) Versatility
- D) Volume

Answer: C

39. What does "fuzzy logic" aim to address?

- A) Deterministic decision-making
- B) Binary logic
- C) Handling uncertainty and partial truths
- D) Training neural networks

Answer: C

40. Which of the following is a real-world application of expert systems?

- A) Generating new art pieces
- B) Fraud detection in banks
- C) Real-time speech translation
- D) Disease diagnosis

Answer: D

41. Which algorithm is commonly used for clustering tasks?

- A) Logistic Regression
- B) K-Means
- C) Support Vector Machines
- D) Decision Trees

Answer: B

42. What is a confusion matrix used for?

- A) Measuring accuracy of classification models
- B) Clustering unlabeled data
- C) Generating random samples
- D) Training neural networks

Answer: A

43. What does "core business data" represent?

- A) Peripheral information for AI models
- B) Randomly collected customer data
- C) Data with the highest impact on an organization's value
- D) Irrelevant datasets for analysis

Answer: C

44. Which machine learning task involves predicting continuous values?

- A) Classification
- B) Regression
- C) Clustering
- D) Reinforcement Learning

Answer: B

45. What is one benefit of symbolic AI?

- A) Easy to scale
- B) Effective with massive datasets
- C) Can explain its reasoning
- D) Handles unstructured data effectively

Answer: C

46. The purpose of feature engineering is to:

- A) Remove irrelevant data points
- B) Transform data to improve model performance
- C) Identify missing data
- D) Standardize all data

Answer: B

47. Which system inspired Frank Rosenblatt's perceptron?

- A) Physics models
- B) Human neurons
- C) Genetic algorithms
- D) Statistical theories

Answer: B

48. What is a persona pattern in prompt engineering?

- A) A data preprocessing step
- B) A method to act as a specific character or role
- C) A neural network type
- D) A clustering algorithm

Answer: B

49. How do transformers differ from RNNs?

- A) They use fixed context windows
- B) They rely on sequential processing
- C) They process input in parallel using attention mechanisms
- D) They require less computational power

Answer: C

50. What is the main goal of the Apriori algorithm?

- A) Classify documents
- B) Generate regression models
- C) Find frequent item sets in data
- D) Improve clustering efficiency

Answer: C