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State	Finished
Completed on	Tuesday, 8 July 2025, 11:19 AM
Time taken	6 mins 29 secs
Marks	18.00/20.00
Grade	**90.00** out of 100.00

Question 1

Complete

Mark 1.00 out of 1.00

A perceptron can only solve:

- a. Linear separable problems
- b. None of the above
- c. All problems
- d. Non-linear problems

Question 2

Complete

Mark 1.00 out of 1.00

GANs (Generative Adversarial Networks) are primarily used for:

- a. Classification
- b. Regression
- c. Data generation
- d. Data compression

Question 3

Complete

Mark 0.00 out of 1.00

In reinforcement learning, what does the Bellman equation describe?

- a. The probability of transitions between states
- b. The relationship between policy and reward
- c. The exploration-exploitation trade-off
- d. The value of a state as a function of future rewards

Question 4

Complete

Mark 0.00 out of 1.00

What is the primary reason why deep neural networks need large datasets to perform well?

- a. Because more data always improves accuracy
- b. To avoid overfitting and learn generalizable patterns
- c. To speed up training
- d. To reduce computational complexity

Question 5

Complete

Mark 1.00 out of 1.00

What is the role of the activation function in a neural network?

- a. To initialize weights
- b. To shuffle data
- c. To introduce non-linearity
- d. To optimize loss

Question 6

Complete

Mark 1.00 out of 1.00

What is transfer learning?

- a. Combining two models for better results
- b. Ensembling multiple models
- c. Adapting a pre-trained model to a new but similar task
- d. Training a model from scratch

Question 7

Complete

Mark 1.00 out of 1.00

Which of the following best describes overfitting?

- a. Model performs well on test data
- b. Model performs poorly on training data
- c. Model memorizes training data and performs poorly on new data
- d. Model underestimates variance

Question 8

Complete

Mark 1.00 out of 1.00

Which of the following cost functions is most appropriate for binary classification in neural networks?

- a. Hinge Loss
- b. Kullback-Leibler Divergence
- c. Cross Entropy Loss
- d. Mean Squared Error

Question 9

Complete

Mark 1.00 out of 1.00

Which of the following is a limitation of k-nearest neighbors (kNN)?

- a. Requires neural networks
- b. Sensitive to irrelevant or redundant features and computationally expensive
- c. Requires prior knowledge of data distribution
- d. Cannot handle categorical data

Question 10

Complete

Mark 1.00 out of 1.00

Which of the following is an example of reinforcement learning?

- a. Spam filtering
- b. Chess playing AI
- c. Image classification
- d. Sentiment analysis

Question 11

Complete

Mark 1.00 out of 1.00

Which of the following is an example of unsupervised representation learning?

- a. Autoencoders
- b. Logistic Regression
- c. K-Nearest Neighbors
- d. Decision Trees

Question 12

Complete

Mark 1.00 out of 1.00

Which of these is a drawback of deep learning?

a. Cannot approximate functions
b. Needs large data
c. No parallel processing
d. Cannot work with images

Question 13

Complete

Mark 1.00 out of 1.00

Which technique is used in NLP to reduce words to their root form?

a. Lemmatization
b. Tokenization
c. Word2Vec
d. Bag of Words

Question 14

Complete

Mark 1.00 out of 1.00

Which type of machine learning is anomaly detection most often associated with?

a. Supervised learning
b. Unsupervised learning
c. Semi-supervised learning
d. Reinforcement learning

Question 15

Complete

Mark 1.00 out of 1.00

Why are convolutional neural networks (CNNs) better suited for images?

a. They use recurrent connections
b. They exploit spatial locality and parameter sharing
c. They are rotationally invariant
d. They use fewer layers

Question 16

Complete

Mark 1.00 out of 1.00

Why are GANs sometimes unstable to train?

a. Lack of labeled data
b. No differentiable components
c. Too few parameters
d. Mode collapse and oscillations in the adversarial loss

Question 17

Complete

Mark 1.00 out of 1.00

Why is backpropagation inefficient in recurrent neural networks (RNNs) for long sequences?

a. It is non-differentiable
b. It requires labeled data
c. It leads to exploding or vanishing gradients
d. It lacks activation functions

Question 18

Complete

Mark 1.00 out of 1.00

Why is PCA (Principal Component Analysis) used?

a. To generate synthetic data
b. To normalize features
c. To improve test accuracy
d. To perform feature selection and reduce dimensionality while preserving variance

Question 19

Complete

Mark 1.00 out of 1.00

Why is ReLU preferred over Sigmoid/Tanh in hidden layers of deep networks?

a. It is linear
b. It reduces vanishing gradient problems
c. It is differentiable everywhere
d. It requires no bias term

Question 20

Complete

Mark 1.00 out of 1.00

Why is softmax used in the output layer of multi-class classifiers?

- a. To convert logits into normalized class probabilities
- b. To provide binary probabilities
- c. To make weights sparse
- d. To speed up training