Started on	Tuesday, 8 July 2025, 11:13 AM
State	Finished
Completed on	Tuesday, 8 July 2025, 11:19 AM
Time taken	6 mins 7 secs
Marks	15.00/20.00
Grade	**75.00** out of 100.00

Question 1

Complete

Mark 1.00 out of 1.00

A perceptron can only solve:

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

Question 2

Complete

Mark 1.00 out of 1.00

GANs (Generative Adversarial Networks) are primarily used for:

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

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 reduce computational complexity
- c. To speed up training
- d. To avoid overfitting and learn generalizable patterns

Question 5

Complete

Mark 1.00 out of 1.00

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

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

Question 6

Complete

Mark 1.00 out of 1.00

What is transfer learning?

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

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 underestimates variance
- c. Model performs poorly on training data
- d. Model memorizes training data and performs poorly on new data

Question 8

Complete

Mark 0.00 out of 1.00

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

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

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. Requires prior knowledge of data distribution
- c. Sensitive to irrelevant or redundant features and computationally expensive
- 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. Chess playing AI
- b. Spam filtering
- 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 0.00 out of 1.00

Which of these is a drawback of deep learning?

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

Question 13

Complete

Mark 1.00 out of 1.00

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

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

Question 14

Complete

Mark 0.00 out of 1.00

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

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

Question 15
Complete
Mark 1.00 out of 1.00

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

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

Question 16
Complete
Mark 1.00 out of 1.00

Why are GANs sometimes unstable to train?

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

Question 17
Complete
Mark 1.00 out of 1.00

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

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

Question 18
Complete
Mark 1.00 out of 1.00

Why is PCA (Principal Component Analysis) used?

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

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

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 make weights sparse
- c. To provide binary probabilities
- d. To speed up training