

Question: 1

What is the main advantage of using dropout regularization in deep learning models?

- A- It reduces the model's complexity.
- B- It increases the size of the training dataset.
- C- It improves the model's generalization ability.**
- D- It makes the model deeper.

Question: 2

What is the primary advantage of using a combination of different regularization techniques in deep learning?

- A- It makes the model more complex.
- B- It reduces training time.
- C- It provides a more effective defense against overfitting.**
- D- It increases the learning rate.

Question: 3

Which regularization technique is particularly useful when dealing with imbalanced datasets?

- A Dropout regularization
- B L1 regularization
- C Weight decay
- D Data augmentation**

Question: 4

In L2 regularization, what is the penalty term added to the loss function based on?

- A The absolute value of the weights
- B The square of the weights**
- C The logarithm of the weights
- D The exponential of the weights

Question: 5

Which regularization technique is effective in preventing overfitting by injecting noise into the input data?

- A Weight decay
- B L1 regularization
- C Dropout regularization**
- D Data augmentation

Question: 6

What is the primary benefit of using batch normalization as a regularization technique in deep learning?

- A It reduces the number of parameters in the model.
- B It makes the model more complex.
- C It normalizes activations, making training more stable.**
- D It increases the learning rate.

Question: 7

Which regularization technique can be applied to both the weights and biases of a neural network?

- A L1 regularization
- B L2 regularization
- C Dropout regularization**
- D Data augmentation

Question: 8

What is the primary purpose of early stopping in deep learning?

- A To reduce training time
- B To increase the learning rate
- C To prevent overfitting by monitoring the validation loss**
- D To add noise to the input data

Question: 9

Which regularization technique is commonly used in convolutional neural networks (CNNs) to prevent overfitting?

- A L1 regularization
- B Dropout regularization**
- C Batch normalization
- D Early stopping

Question: 10

How does weight decay affect the loss function in neural networks?

- A It adds a penalty term based on the absolute values of the weights.**
- B It increases the learning rate.
- C It decreases the batch size.
- D It adds random noise to the input data.

Question: 11

What is the primary advantage of using L1 regularization over L2 regularization?

- A L1 regularization is more computationally efficient.
- B L1 regularization is less sensitive to the choice of hyperparameters.
- C L1 regularization encourages sparsity in the model weights.**
- D L1 regularization is less effective in preventing overfitting.

Question: 12

Which regularization technique is also known as "weight decay"?

- A L1 regularization
- B L2 regularization**
- C Dropout regularization
- D Batch normalization

Question: 13

What is the primary goal of dropout regularization in deep learning?

- A To increase the model's complexity
- B To reduce the number of neurons in each layer
- C To prevent overfitting by introducing randomness during training
- D To make the model deterministic

Question: 14

In which scenario is early stopping likely to be effective as a regularization technique?

- A When the training loss is decreasing rapidly
- B When the model has a small number of parameters
- C When the dataset is very large
- D When the model is underfitting

Question: 15

Which regularization technique encourages sparsity in the weights of a neural network by adding a penalty term based on the absolute value of the weights?

- A Weight decay
- B L1 regularization
- C L2 regularization
- D Early stopping

Question: 16

What is the primary purpose of dropout regularization in neural networks?

- A To reduce overfitting by randomly dropping neurons during training
- B To increase the number of neurons in each layer
- C To speed up the training process
- D To make the model deeper

Question: 17

Which regularization technique is particularly effective for deep convolutional neural networks?

- A Weight decay
- B Data augmentation
- C Dropout regularization
- D Early stopping

Question: 18

What is the primary purpose of dropout layers in neural networks?

- A To add more layers to the network
- B To increase the learning rate
- C To randomly drop a fraction of neurons during training
- D To increase the batch size

Question: 19

Which regularization technique aims to prevent overfitting by limiting the number of trainable parameters in a neural network?

- A Weight decay
- B L2 regularization
- C Parameter sharing**
- D Early stopping

Question: 20

How does batch normalization help with regularization in neural networks?

- A It adds noise to the input data.
- B It normalizes the activations of each layer, making training more stable.**
- C It increases the learning rate during training.
- D It applies L1 and L2 regularization to the weights.

Question: 21

Which regularization technique is based on the idea of forcing the network to learn multiple representations of the same data?

- A L1 regularization
- B L2 regularization
- C Dropout regularization**
- D Ensemble learning

Question: 22

In dropout regularization, what is the probability of keeping a neuron during training typically set to?

- A 0
- B 0.5**
- C 1
- D 2

Question: 23

Which regularization technique inserts a constraint on the maximum value of gradients during training?

- A L1 regularization
- B L2 regularization
- C Gradient clipping**
- D Early stopping

Question: 24

What is the primary goal of weight decay in L2 regularization?

- A To increase the weights of important features
- B To decrease the weights of important features
- C To encourage sparsity in the weights

D To shrink the weights toward zero

Question: 25

How does early stopping work as a regularization technique in neural networks?

A It stops training when the loss on the validation set starts increasing.

B It increases the learning rate during training.

C It adds noise to the input data.

D It increases the number of hidden layers in the network.

Question: 26

Which regularization technique involves adding random noise to the input data during training?

A Dropout regularization

B Early stopping

C Noise injection

D L2 regularization

Question: 27

What is the primary purpose of data augmentation as a regularization technique?

A To reduce the size of the training dataset

B To increase the complexity of the model

C To create additional training examples by applying transformations to the data

D To decrease the learning rate during training

Question: 28

Which regularization technique combines both L1 and L2 penalties to the loss function?

A Dropout regularization

B Elastic Net regularization

C Batch normalization

D Gradient clipping

Question: 29

In L1 regularization, what is the penalty term added to the loss function based on?

A The square of the weights

B The absolute value of the weights

C The exponential of the weights

D The logarithm of the weights

Question: 30

Which type of regularization technique penalizes the magnitude of weights in a neural network to prevent large weight values?

A L1 regularization

B L2 regularization

C Dropout regularization

D Batch normalization