Started on	Thursday, 5 June 2025, 4:30 PM
State	Finished
Completed on	Thursday, 5 June 2025, 4:37 PM
Time taken	7 mins 2 secs

Question 1

Complete

Marked out of 1.00

Flag question

Which layer is typically used to reduce spatial dimensions?

- a. Convolutional
- b. Fully connected
- c. Max pooling
- d. ReLU

Question 2

Complete

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Flag question

What does a ReLU activation function do?

- a. Replaces all values with their square
- b. Converts inputs into probabilities
- c. Computes the average of its inputs
- d. Outputs zero for negative values and linear for positive values

Question 3

Complete

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Flag question

What does batch normalization do?

- a. Reduces the number of parameters
- b. Prevents vanishing gradients by eliminating dropout
- c. Removes bias from each layer
- d. Normalizes the input to each layer for stable learning

Question 4

Complete

Marked out of 1.00

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Flag question

What is the benefit of using padding in convolution operations?

- a. To make the output smaller than the input
- b. To preserve spatial dimensions
- c. To increase the number of channels
- d. To normalize the input

Question 5

Complete

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Flag question

What is the role of the softmax layer at the end of a CNN?

- a. To normalize outputs into probability distributions
- b. To extract hierarchical features
- c. To apply non-linearity to feature maps
- d. To reduce overfitting

Question 6

Complete

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Flag question

What is the key idea behind residual connections in ResNet?

- a. Reducing activation memory
- b. Learning only from max pooling layers
- c. Using attention mechanisms
- d. Skip connections that learn identity mappings

Question 7

Complete

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Flag question

Which of the following is true about the stride in a convolutional layer?

- a. It defines the number of output channels
- b. It defines the number of filters used
- c. It controls the activation function
- d. It determines how far the kernel moves across the input

Question 8

Complete

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Flag question

Why are 1×1 convolutions useful in an Inception module?

- a. They expand spatial size
- b. They increase feature redundancy
- c. They reduce overfitting
- d. They reduce depth before expensive operations

Question 9

Complete

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Flag question

Which of the following helps prevent overfitting in CNNs?

- a. Dropout layers
- b. Increasing batch size
- c. Using larger convolutional kernels
- d. Increasing learning rate

Question 10

Complete

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Flag question

Why are stacked 3×3 convolutions often used instead of a single 5×5 convolution?

- a. They make computation slower
- b. They increase the number of parameters
- c. They reduce receptive field size
- d. They offer greater non-linearity and fewer parameters

Question 11

Complete

Marked out of 1.00

Flag question

What does the term "stride" of 2 mean in a convolution operation?

- a. Two convolutions are performed simultaneously
- b. The kernel moves two steps at a time

c. Output size is doubled
d. Kernel size is 2×2

Question 12
Complete
Marked out of 1.00
Flag question

What is the primary function of a convolutional layer in a CNN?

a. To extract features from input data
b. To normalize data
c. To reduce dimensionality through pooling operations
d. To apply fully connected operations

Question 13
Complete
Marked out of 1.00
Flag question

Which CNN architecture introduced grouped convolutions?

a. AlexNet
b. ResNet
c. VGGNet
d. LeNet

Question 14
Complete
Marked out of 1.00
Flag question

What is the main purpose of using pooling layers in CNNs?

a. To increase the resolution of the image
b. To reduce spatial dimensions and computation
c. To apply non-linear activation
d. To add learnable parameters

Question 15
Complete
Marked out of 1.00
Flag question

In AlexNet, what was the primary reason for introducing grouped convolutions?

- a. To allow for larger kernel sizes
- b. To improve convergence rate
- c. To increase non-linearity
- d. To train on multiple GPUs

Question 16

Complete

Marked out of 1.00

Flag question

What happens to the receptive field as you go deeper in a CNN?

- a. It decreases
- b. It resets after every layer
- c. It remains constant
- d. It increases

Question 17

Complete

Marked out of 1.00

Flag question

What is the primary advantage of using 1×1 convolutions?

- a. Increasing the depth of the network
- b. Spatial pooling
- c. Dimensionality reduction and channel-wise learning
- d. Extracting edge features

Question 18

Complete

Marked out of 1.00

Flag question

Which of the following best describes the receptive field in CNNs?

- a. The number of channels in the input
- b. The number of filters used
- c. The amount of memory consumed during training
- d. The region in the input that affects a particular output

Question 19

Complete

Marked out of 1.00

Flag question

Which technique is used to make CNNs computationally more efficient for mobile applications?

a. Fully connected layers
b. ReLU6 activation
c. Depthwise separable convolutions
d. Batch normalization

Question 20

Complete

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Flag question

What is a dilated convolution used for?

a. Compressing feature maps
b. Combining multiple filters
c. Increasing the receptive field without losing resolution
d. Normalizing input data

Finish review