

Name: _____ Roll Number: _____

1. (1 point) Convolutional layers are primarily used in neural networks to:
 - A. Reduce the size of the dataset
 - B. Extract spatial features from input data**
 - C. Perform gradient descent optimization
 - D. Add non-linearity to the model
2. (1 point) Which activation function is most commonly used in convolutional neural networks?
 - A. Sigmoid
 - B. Tanh
 - C. ReLU (Rectified Linear Unit)**
 - D. Softmax
3. (1 point) What is the purpose of padding in convolutional layers?
 - A. To reduce the number of parameters
 - B. To preserve spatial dimensions after convolution**
 - C. To increase the depth of the feature map
 - D. To normalize feature values
4. (1 point) Which of the following is an advantage of using CNNs for image classification?
 - A. They are invariant to spatial transformations
 - B. They reduce computational complexity
 - C. Both of the above**
 - D. None of the above
5. (1 point) What does a kernel in a convolutional layer represent?
 - A. The entire set of weights in the network
 - B. A small matrix used to extract specific features**
 - C. The function used for backpropagation
 - D. The bias added to the layer
6. (1 point) True or False: In CNNs, pooling layers are used to reduce the spatial dimensions of feature maps. **A. True** B. False
7. (1 point) True or False: Convolution operations in CNNs are linear transformations. **A. True**
B. False
8. (1 point) True or False: Max-pooling selects the maximum value from a region of the feature map. **A. True** B. False
9. (1 point) True or False: Strided convolution increases the resolution of the output feature map.
A. True **B. False**
10. (1 point) True or False: Fully connected layers are typically used at the end of a CNN to make predictions. **A. True** B. False