**Deep Neural Network**

**MULTIPLE TYPE QUESTIONS**

**1. Which of the following is a subset of machine learning?**

A. Numpy  
B. SciPy  
C. Deep Learning  
D. All of the above

**2, RNNs stands for?**

A. Receives neural networks  
B. Report neural networks  
C. Recording neural networks  
D. Recurrent neural networks

**3. CNN is mostly used when there is an?**

A. structured data  
B. unstructured data  
C. Both A and B  
D. None of the above

**4. In which of the following applications can we use deep learning to solve the problem?**

A. Protein structure prediction  
B. Prediction of chemical reactions  
C. Detection of exotic particles  
D. All of the above

**5. The number of nodes in the input layer is 10 and the hidden layer is 5. The maximum number of connections from the input layer to the hidden layer are**

A. 50  
B. less than 50  
C. more than 50  
D. It is an arbitrary value

**6. The input image has been converted into a matrix of size 28 X 28 and a kernel/filter of size 7 X 7 with a stride of 1. What will be the size of the convoluted matrix?**

A. 20x20  
B. 21x21  
C. 22x22  
D. 25x25

**7.In a simple MLP model with 8 neurons in the input layer, 5 neurons in the hidden layer and 1 neuron in the output layer. What is the size of the weight matrices between hidden output layer and input hidden layer?**

A. [1 X 5] , [5 X 8]  
B. [5 x 1] , [8 X 5]  
C. [8 X 5] , [5 X 1]  
D. [8 X 5] , [ 1 X 5]

**8. Which of the following functions can be used as an activation function in the output layer if we wish to predict the probabilities of n classes (p1, p2..pk) such that sum of p over all n equals to 1?**

A. Softmax  
B. ReLu  
C. Sigmoid  
D. Tanh

**9. Which of the following is an example of deep learning?**

A. Self-driving cars

B. Pattern recognition

C. Natural language processing

D. All of the above

**10. Which is the following is true about neurons?**

A. A neuron has a single input and only single output

B. A neuron has multiple inputs and multiple outputs

C. A neuron has a single input and multiple outputs

D. All of the above

**11. Which of the following steps can be taken to prevent overfitting in a neural network?**

A. Dropout of neurons

B. Early stopping

C. Batch normalization

D. All of the above

**12. Which of the following is a deep learning library?**

A. Tensorflow

B. Keras

C. PyTorch

D. All of the above

**13. What is the purpose of a loss function?**

A. Calculate the error value of the forward network

B. Optimize the error values according to the error rate

C. Both A and B

D. None

**14. Suppose you have a dataset from where you have to predict three classes. Then which of the following configuration you should use in the output layer?**

A. Activation function = softmax, loss function = cross entropy

B. Activation function = sigmoid, loss function = cross entropy

C. Activation function = softmax, loss function = mean squared error

D. Activation function = sigmoid, loss function = mean squared error

**15. What is gradient descent?**

A. Activation function

B. Loss function

C. Optimization algorithm

D. None

**16. Which of the following activation function can not be used in the output layer of an image classification model?**

A. ReLu

B. Softmax

C. Sigmoid

D. None

**17. Which of the following is a correct order for the Convolutional Neural Network operation?**

A. Convolution -> max pooling -> flattening -> full connection

B. Max pooling -> convolution -> flattening -> full connection

C. Flattening -> max pooling -> convolution -> full connection

D. None

**18. Batch normalization helps to prevent-**

A. activation functions to become too high or low

B. the training speed to become too slow

C. Both A and B

D. None

**18. Which of the following is a correct order for the Convolutional Neural Network operation?**

A. Convolution -> max pooling -> flattening -> full connection

B. Max pooling -> convolution -> flattening -> full connection

C. Flattening -> max pooling -> convolution -> full connection

D. None

**19. In a neural network, which of the following causes the loss not to decrease faster?**

A. Stuck at a local minima

B. High regularization parameter

C. Slow learning rate

D. All of the above

**20. Which of the following is true about dropout?**

A. Applied in the hidden layer nodes

B. Applied in the output layer nodes

C. Both A and B

D. None