QUIZ TOPIC - DEEP LEARNING

1. **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

2. **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

3. **Which of the following statement is not correct?**

- A. Neural networks mimic the human brain
- B. It can only work for a single input and a single output
- C. It can be used in image processing
- D. None

4. **Autoencoder is an example of-**

- A. Deep learning
- B. Machine learning
- C. Data mining
- D. None

5. **Which of the following deep learning models uses back propagation?**

- A. Convolutional Neural Network
- B. Multilayer Perceptron Network
- C. Recurrent Neural Network
- D. All of the above

6. **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

7. **Neural networks can be used in-**

- A. Regression problems
- B. Classification problems
- C. Clustering problems
- D. All of the above

8. **In a classification problem, which of the following activation function is most widely used in the output layer of neural networks?**

- A. Sigmoid function
- B. Hyperbolic function
- C. Rectifier function
- D. All of the above

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

- A. Tensorflow
- B. Keras
- C. PyTorch
- D. All of the above

10. **Which of the following is true about bias?**

- A. Bias is inherent in any predictive model
- B. Bias impacts the output of the neurons
- C. Both A and B
- D. None

11. **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

12. **Which of the following is a loss function?**

- A. Sigmoid function
- B. Cross entropy
- C. ReLu
- D. All of the above

13. **Which of the following loss function is used in regression?**

- A. Logarithmic loss
- B. Cross entropy
- C. Mean squared error
- 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. **What does a gradient descent algorithm do?**

- A. Tries to find the parameters of a model that minimizes the cost function
- B. Adjusts the weights at the input layers
- C. Both A and B
- D. None

17. **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

18. **For a binary classification problem, which of the following activation function is used?**

- A. ReLu
- B. Softmax
- C. Sigmoid
- D. None

19. **Which of the following makes a neural network non-linear?**

- A. Convolution function
- B. Batch gradient descent
- C. Rectified linear unit
- D. All of the above

20. **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

21. **For an image classification task, which of the following deep learning algorithm is best suited?**

- A. Recurrent Neural Network
- B. Multi-Layer Perceptron
- C. Convolution Neural Network
- D. All of the above

22. **Suppose the number of nodes in the input layer is 5 and the hidden layer is 10. The maximum number of connections from the input layer to the hidden layer would be-**

- A. More than 50
- B. Less than 50
- C. 50
- D. None

23. **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

24. **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

25. **Convolutional Neural Network is used in-**

- A. Image classification
- B. Text classification
- C. Computer vision
- D. All of the above

26. **Which of the following neural network model has a shared weight structure?**

- A. Recurrent Neural Network
- B. Convolution Neural Network
- C. Both A and B
- D. None

27. **LSTM is a variation of-**

- A. Convolutional Neural Network
- B. Recurrent Neural Network
- C. Multi Layer Perceptron Network
- D. None

28. **Which of the following neural networks is the best for machine translation?**

- A. 1D Convolutional Neural Network
- B. 2D Convolutional Neural Network
- C. Recurrent Neural Network
- D. None

29. **Which of the following neural networks has a memory?**

- A. 1D CNN
- B. 2D CNN
- C. LSTM
- D. None

30. **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