1. What is the basic unit of a Neural Network?

A) Neuron ✅

B) Weight

C) Loss

D) Activation

2. In a neural network, what connects neurons between layers?

A) Activation function

B) Weights ✅

C) Bias

D) Threshold

3. Which of the following is NOT a deep learning framework?

A) Keras

B) TensorFlow

C) NumPy ✅

D) CNTK

4. What is TensorFlow mainly used for?

A) Web Development

B) Deep Learning ✅

C) Database Management

D) Operating Systems

5. What does Keras primarily provide to developers?

A) Backend computation

B) High-level API ✅

C) Low-level tensor operations

D) Hardware acceleration

6. Which deep learning library is developed by Microsoft?

A) TensorFlow

B) CNTK ✅

C) Keras

D) Theano

7. Theano is mainly written in which programming language?

A) Java

B) Python ✅

C) C++

D) R

8. Setting up a deep learning workstation primarily requires which of the following?

A) High RAM

B) Powerful GPU ✅

C) Large HDD

D) Fast Internet

9. What type of classification is involved in movie review sentiment analysis?

A) Multiclass

B) Multilabel

C) Binary ✅

D) Regression

10. Which dataset is commonly used for movie review sentiment classification?

A) CIFAR-10

B) IMDB ✅

C) MNIST

D) Reuters

11. In binary classification, the output layer typically uses which activation function?

A) ReLU

B) Softmax

C) Sigmoid ✅

D) Tanh

12. What type of loss function is usually used in binary classification?

A) Mean Squared Error

B) Categorical Crossentropy

C) Binary Crossentropy ✅

D) Hinge Loss

13. Which type of classification deals with more than two classes?

A) Binary

B) Multiclass ✅

C) Multilabel

D) Regression

14. The Reuters dataset is widely used for which task?

A) Image recognition

B) Sentiment analysis

C) Newswire classification ✅

D) Speech synthesis

15. In multiclass classification, which activation function is commonly used in the output layer?

A) ReLU

B) Sigmoid

C) Tanh

D) Softmax ✅

16. In neural networks, what is the role of the activation function?

A) Initialize weights

B) Introduce non-linearity ✅

C) Perform optimization

D) Store training history

17. What does the acronym 'GPU' stand for?

A) General Processing Unit

B) Graphics Processing Unit ✅

C) Great Performance Unit

D) General Purpose Unit

18. Which of the following is a popular optimizer used in training deep learning models?

A) Gradient Descent

B) Adam ✅

C) Naive Bayes

D) Linear Regression

19. Which layer type is usually the first in a Keras model?

A) Dense layer

B) Flatten layer

C) Input layer ✅

D) Dropout layer

20. What is the purpose of dropout in deep learning models?

A) Increase model size

B) Prevent overfitting ✅

C) Speed up training

D) Increase accuracy on training data

21. What is the primary purpose of Convolutional Neural Networks (CNNs)?

A) Time-series prediction

B) Image processing ✅

C) Text classification

D) Reinforcement learning

22. In CNNs, what operation is primarily used to extract spatial features?

A) Pooling

B) Convolution ✅

C) Normalization

D) Activation

23. What does the 'stride' in a convolutional layer control?

A) Number of filters

B) Size of the filter

C) Step size of the kernel ✅

D) Learning rate

24. What is typically used after a convolutional layer in CNNs?

A) Dense layer

B) ReLU activation ✅

C) LSTM

D) Dropout

25. What is a "multichannel" convolution operation used for?

A) To reduce training time

B) To process grayscale images

C) To handle RGB or multiple input channels ✅

D) To avoid overfitting

26. What kind of neural network is best suited for sequential data like text or time-series?

A) CNN

B) RNN ✅

C) MLP

D) Autoencoder

27. Which type of RNN is designed to overcome long-term dependency issues?

A) Vanilla RNN

B) GRU

C) LSTM ✅

D) Residual RNN

28. What does an RNN use to store past information?

A) Convolutional filters

B) Hidden state ✅

C) Weights

D) Gradient

29. What happens in the RNN cell at each time step?

A) Output is ignored

B) Input is reset

C) Previous hidden state is used ✅

D) Bias is removed

30. In PyTorch, what object represents data structures used in neural networks?

A) NumPy arrays

B) Lists

C) Tensors ✅

D) Dictionaries

31. What method is used in PyTorch to move tensors to a GPU?

A) .move()

B) .cuda() ✅

C) .gpu()

D) .to_gpu()

32. Which PyTorch module is used to define layers in a neural network?

A) torch.nn ✅

B) torch.utils

C) torch.data

D) torch.model

33. What does ReLU stand for?

A) Rectified Linear Unit ✅

B) Recursive Learning Unit

C) Random Linear Update

D) Rational Layer Unit

34. What layer is typically used to reduce dimensionality in CNNs?

A) Dense layer

B) Dropout layer

C) Flatten layer

D) Pooling layer ✅

35. In PyTorch, which function is commonly used to train a model?

A) fit()

B) train() ✅

C) compile()

D) learn()

36. Which of these is NOT a PyTorch tensor operation?

A) .reshape()

B) .add()

C) .divide()

D) .table() ✅

37. What does backpropagation update during training?

A) Input data

B) Hidden state

C) Loss

D) Weights ✅

38. What is the role of loss functions in CNN or RNN models?

A) Normalize inputs

B) Visualize layers

C) Measure model error ✅

D) Set batch size

39. What kind of data is a CNN not typically used for?

A) Images

B) Videos

C) Audio

D) Tabular data ✅

40. In PyTorch, which optimizer is commonly used for training CNNs and RNNs?

A) SGD

B) RMSProp

C) Adam ✅

D) Adagrad

41. What is the main goal of Machine Vision in deep learning?

A) Understand grammar rules

B) Enable machines to interpret images and videos ✅

C) Generate audio signals

D) Translate languages

42. Which deep learning model is commonly used for text generation and sentiment analysis?

A) CNN

B) RNN ✅

C) DBN

D) GAN

43. What does GAN stand for?

A) Gradient Adjustment Network

B) Generalized Artificial Network

C) Generative Adversarial Network ✅

D) Generic Attention Network

44. What are the two components of a GAN?

A) Generator and Decoder

B) Generator and Discriminator ✅

C) Discriminator and Transformer

D) Classifier and Predictor

45. Deep Reinforcement Learning combines neural networks with which concept?

A) Clustering

B) Supervised learning

C) Reinforcement learning ✅

D) Dimensionality reduction

46. In Natural Language Processing, which model is widely used for sequence-to-sequence tasks?

A) GAN

B) LSTM ✅

C) DBN

D) RBM

47. What is the primary use of an Autoencoder?

A) Classification

B) Feature extraction and data compression ✅

C) Image generation

D) Time-series prediction

48. What is the hidden layer in an Autoencoder called?

A) Visible layer

B) Encoding layer ✅

C) Output layer

D) Classifier

49. What type of network is a Boltzmann Machine?

A) Feedforward

B) Probabilistic generative network ✅

C) Deterministic model

D) Sequence model

50. Which of the following is a restricted version of Boltzmann Machines?

A) Convolutional Neural Network

B) Deep Belief Network

C) Restricted Boltzmann Machine ✅

D) Multilayer Perceptron

51. What restriction is imposed in a Restricted Boltzmann Machine (RBM)?

A) No bias nodes

B) No connections between visible and hidden layers

C) No intra-layer connections ✅

D) Limited number of neurons

52. Which learning algorithm is commonly used to train RBMs?

A) Backpropagation

B) Contrastive Divergence ✅

C) Adam

D) Genetic Algorithm

53. What is a Deep Belief Network (DBN)?

A) A single-layer neural network

B) A stack of Autoencoders

C) A stack of RBMs ✅

D) A type of CNN

54. In GANs, what is the goal of the Generator?

A) Classify input data

B) Distinguish real from fake data

C) Generate fake data that looks real ✅

D) Evaluate model loss

55. What is the Discriminator trained to do in GANs?

A) Generate data

B) Compress data

C) Classify text

D) Identify fake data from real ✅

56. Which of the following is NOT a component of Deep Reinforcement Learning?

A) Policy

B) Reward

C) Encoding layer

D) Environment ✅

57. What is the “exploration vs exploitation” trade-off in reinforcement learning?

A) Choosing the best loss function

B) Balancing new actions vs known rewards ✅

C) Selecting batch sizes

D) Optimizing memory usage

58. Which type of neural network is typically used in Deep Q-Learning?

A) Recurrent Neural Network

B) Feedforward Neural Network ✅

C) Autoencoder

D) GAN

59. What makes DBNs “deep”?

A) Use of dropout

B) Multiple layers of RBMs ✅

C) Long sequences

D) Kernel operations

60. In the context of NLP, what does "embedding" refer to?

A) Compressing images

B) Plotting graphs

C) Representing words as vectors ✅

D) Combining layers