1. Which of the following is not a technique commonly used in learning Artificial Neural Networks (ANN)?
a) Supervised Learning
b) Unsupervised Learning
c) Reinforcement Learning
d) Random Learning

Answer: d) Random Learning
Explanation: Random Learning is not a recognized technique in the context of ANN. Supervised, Unsupervised, and Reinforcement Learning are the primary methods employed.

2. What is the primary function of Convolutional Neural Networks (CNNs)?
a) Sequence prediction
b) Image classification
c) Text generation
d) Reinforcement learning

Answer: b) Image classification
Explanation: CNNs are particularly effective in tasks involving image recognition and classification due to their ability to capture spatial hierarchies in data.

3. Which type of Neural Network is well-suited for sequential data processing tasks like time series prediction?
a) Feedforward Neural Network (FNN)
b) Convolutional Neural Network (CNN)
c) Recurrent Neural Network (RNN)
d) Multilayer Perceptron (MLP)

Answer: c) Recurrent Neural Network (RNN)
Explanation: RNNs are designed to retain memory of past inputs, making them suitable for sequential data processing tasks.

4. How many layers are typically found in the architecture of a Feedforward Neural Network (FNN)?
a) One
b) Two
c) Three
d) Variable

Answer: c) Three
Explanation: A standard FNN consists of an input layer, one or more hidden layers, and an output layer.

5. In which layer of an Artificial Neural Network (ANN) are the input signals processed before being passed to the subsequent layers?
a) Input layer
b) Hidden layer
c) Output layer
d) Processing layer

Answer: a) Input layer
Explanation: The input layer of an ANN processes the incoming signals before passing them to the hidden layers for further processing.

6. Which of the following is an application of Artificial Neural Networks (ANN) in language

processing?
a) Image recognition
b) Sentiment analysis
c) Stock market prediction
d) Weather forecasting

Answer: b) Sentiment analysis
Explanation: ANN can be utilized in sentiment analysis tasks to classify text data based on the sentiment expressed.

7. What is a common task performed by expert systems?
a) Image classification
b) Speech recognition
c) Reasoning and decision-making
d) Financial forecasting

Answer: c) Reasoning and decision-making
Explanation: Expert systems are designed to emulate the decision-making processes of human experts in specific domains.

8. Which layer of a Convolutional Neural Network (CNN) is responsible for extracting features from the input data?
a) Input layer
b) Pooling layer
c) Convolutional layer
d) Fully connected layer

Answer: c) Convolutional layer
Explanation: Convolutional layers apply filters to the input data, extracting relevant features through convolution operations.

9. Which type of learning involves providing the neural network with labeled training data to learn from?
a) Unsupervised learning
b) Reinforcement learning
c) Semi-supervised learning
d) Supervised learning

Answer: d) Supervised learning
Explanation: In supervised learning, the neural network learns from labeled training data where the correct outputs are provided alongside the inputs.

10. What distinguishes Recurrent Neural Networks (RNNs) from other types of neural networks?
a) They have feedback connections allowing them to retain memory of past inputs.
b) They are primarily used for image processing tasks.
c) They do not have hidden layers.
d) They can only process data in a single pass.

Answer: a) They have feedback connections allowing them to retain memory of past inputs.
Explanation: RNNs possess recurrent connections, enabling them to retain information about past inputs and use it in processing future inputs.

11. Which type of Neural Network is commonly used for deep learning tasks involving

multiple layers?
a) Single-layer Perceptron
b) Multilayer Perceptron (MLP)
c) Radial Basis Function Network
d) Self-organizing Map

Answer: b) Multilayer Perceptron (MLP)
Explanation: MLPs are composed of multiple layers of nodes, making them suitable for deep learning tasks.

12. What is the purpose of the activation function in a neural network?
a) To control the learning rate
b) To normalize the input data
c) To introduce non-linearity into the model
d) To perform feature extraction

Answer: c) To introduce non-linearity into the model
Explanation: Activation functions introduce non-linearities into the neural network, allowing it to model complex relationships in the data.

13. Which layer of a neural network is responsible for producing the final output or prediction?
a) Input layer
b) Hidden layer
c) Output layer
d) Processing layer

Answer: c) Output layer
Explanation: The output layer of a neural network produces the final output or prediction based on the processed input data.

14. What is a characteristic of a Multilayer Perceptron (MLP)?
a) It can only have one hidden layer.
b) It can have multiple hidden layers.
c) It cannot handle non-linear data.
d) It is primarily used for image processing.

Answer: b) It can have multiple hidden layers.
Explanation: MLPs can have multiple hidden layers, allowing them to learn complex patterns in the data through deep learning.

15. Which of the following is an example of an expert system?
a) Siri (Apple’s virtual assistant)
b) Google Translate
c) IBM Watson
d) Facebook News Feed algorithm

Answer: c) IBM Watson
Explanation: IBM Watson is an example of an expert system that leverages artificial intelligence to provide expert-level solutions in various domains, such as healthcare and finance.