**Machine Learning**

**1. What is Machine Learning?**

A. A type of database management system  
 B. A programming language  
 C. A method of teaching computers to learn from data  
 D. A type of hardware technology

**2. Which of the following is NOT a type of Machine Learning?**

A. Supervised Learning  
 B. Unsupervised Learning  
 C. Reinforcement Learning  
 D. Manual Learning

**3. What is the main goal of Supervised Learning?**

A. To find patterns in unlabeled data  
 B. To learn from rewards and punishments  
 C. To predict an output based on labeled input-output pairs  
 D. To design hardware for machine learning

**4. Which of these is an example of Supervised Learning?**

A. Grouping customers based on their shopping behavior  
 B. Predicting house prices based on historical data  
 C. Playing chess using trial and error  
 D. Translating text from one language to another without labeled data

**5. In Unsupervised Learning, what type of data is used?**

A. Data with labeled input-output pairs  
 B. Data with labels only  
 C. Data with no labels  
 D. Data with predefined rewards

**6. What is the purpose of a "train-test split" in machine learning?**

A. To speed up the training process  
 B. To divide the dataset for testing and training a model separately  
 C. To organize the data alphabetically  
 D. To split the dataset for storage

**7. Which of the following libraries is commonly used in Python for machine learning?**

A. NumPy  
 B. TensorFlow  
 C. Pandas  
 D. All of the above

**8. What is a feature in machine learning?**

A. The data used to train the model  
 B. An input variable used by the model to make predictions  
 C. The algorithm used in the model  
 D. The hardware used for running the model

**9. What is a "label" in supervised learning?**

A. A variable used as input to the model  
B. The output the model is trying to predict  
C. A type of data preprocessing step  
D. The name of a machine learning algorithm

**10. Which of the following is an example of a classification problem?**

A. Predicting house prices  
B. Predicting the weather temperature  
C. Identifying whether an email is spam or not  
D. Predicting stock market trends

**11. Which machine learning algorithm is used for regression problems?**

A. Logistic Regression  
B. Decision Trees  
C. K-Means Clustering  
D. Linear Regression

**12. What is "gradient descent" in machine learning?**

A. A method to clean and preprocess data  
B. An optimization algorithm to minimize the loss function  
C. A technique to split data into training and testing sets  
D. A type of machine learning algorithm

**13. What is the "training set" in machine learning?**

A. A set of data used to evaluate the model  
B. A set of data used to fine-tune the hyperparameters  
C. A set of data used to teach the model  
D. A set of data used for cross-validation

**14. Which of the following is NOT a common step in a machine learning workflow?**

A. Data collection  
B. Model training  
C. Hardware assembly  
D. Model evaluation

**15. Which of the following is a loss function used in regression problems?**

A. Mean Squared Error (MSE)  
B. Cross-Entropy Loss  
C. Hinge Loss  
D. Log Loss

**16. Which machine learning library is written in Python?**

A. Scikit-learn  
B. TensorFlow  
C. PyTorch  
D. All of the above