**Q:1. What is the primary goal of Machine Learning (ML)?**

**A. To write explicit rules for software to follow**

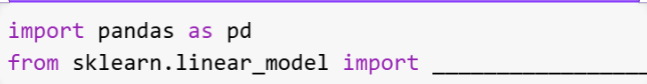
**B. To allow systems to learn patterns from data and make predictions**

**C. To create static programs that do not change behavior**

**D. To replace databases with neural networks**

**Answer : B**

**Q:2. Fill in the blank to correctly import the Linear Regression model in Python:**



**Choose the correct option**

**A: LinearRegression**

**B: linear\_regression**

**C: regression**

**D: lin\_reg**

**Answer : A**

**Q:3. What does the following line do in Python?**

****

**Choose the correct option**

**A. It saves the model to a file**

**B. It loads a model from a file**

**C. It evaluates the model and prints results**

**D. It deletes the model from memory**

**Answer : A**

**Q:4. What is the main goal of Exploratory Data Analysis (EDA)?**

**A. To train a model**

**B. To visualize charts only**

**C . To explore, clean, and understand the data**

**D . To export data to Excel**

**Answer : C**

**Q:5. Which type of data is used in supervised learning?**

**A. Labeled data**

B. **Unlabeled data**

**C. Raw image data**

**D. Audio data**

**Answer : A**

**Q:6. The function sns.boxplot() is used to detect \_\_\_\_ and visualize distribution characteristics.**

**A. duplicates**

**B. outliers**

**C. nulls**

**D. categories**

**Answer : B**

**Q:7. Underfitting typically happens when the model is too \_\_\_\_ to capture the underlying structure of the data.**

**A. large**

**B. simple**

**C. complex**

**D. deep**

**Answer : B**

**Q:8. One of the key goals of L1 and L2 regularization is to prevent \_\_\_\_ by penalizing large weights.**

**A. optimization**

**B. dropout**

**C. overfitting**

**D. training**

**Answer : C**

**Q:9. A neural network consists of input, hidden, and output layers where each neuron computes a weighted sum followed by a(n) \_\_\_\_ function.**

**A. loss**

**B. dropout**

**C. activation**

**D. optimizer**

**Answer : C**

**Q:10. Two different words appear in similar contexts and get mapped to similar vector representations. This behavior is most characteristic of:**

**A. Bag-of-Words.**

**B. TF-IDF.**

**C. One-Hot Encoding.**

**D. Word Embeddings.**

**Answer : D**

**Q:11. Which of the following best defines Natural Language Processing (NLP)?**

**A. Programming computers to read binary code**

**B. Teaching machines to interpret and generate human language**

**C. Compressing human language into zip files**

**D. Translating HTML documents into JSON**

**Answer : B**

**Q:12. What is a key feature of the Word2Vec model in NLP?**

**A. It represents each word as a unique one-hot vector**

**B. It predicts the next sentence in a paragraph**

**C. It learns word vectors based on surrounding context and captures semantic similarity**

**D. It requires labeled data for training**

**Answer : C**

**Q:13. Git is commonly used in ML workflows to track changes in \_\_\_\_ and experiment logic.**

**A. model outputs**

**B. training datasets**

**C. hardware dependencies**

**D. code and scripts**

**Answer : D**

**Q:14. The command dvc add data.csv creates a .dvc file which tracks the \_\_\_\_ of the data file.**

**A. size**

**B. content hash**

**C. name**

**D. metadata**

**Answer : B**

**Q:15. Feast is used in MLOps to store and serve \_\_\_\_ to models in both training and production environments.**

**A. predictions**

**B. hyperparameters**

**C. raw data**

**D. features**

**Answer : D**

**Q:16. How do you log a parameter in MLflow?**

**A. log.params()  
B. mlflow.log\_param()  
C. mlflow.write\_param()  
D. log\_param()**

**Answer : B**

**Q:17. What is an artifact in MLflow?**

**A. A file or folder output from an ML run  
B. A container image  
C. A metric value  
D. A Git commit**

**Answer : A**

**Q:18. What is MLflow Model Registry used for?**

**A. Training models  
B. Managing model lifecycle (staging → production)  
C. Saving plots  
D. Logging datasets**

**Answer : B**

**Q:19. Which command is used to build a Docker image from a Dockerfile?**

**A. docker run -t image\_name .  
B. docker start image\_name .  
C. docker build -t image\_name .  
D. docker compile image\_name .**

**Answer : C**

**Q:20. What is the primary purpose of a Dockerfile.**

**A. Automate GPU training  
B. Deploy to the cloud  
C. Describe how to build a Docker image  
D. Package model weights only**

**Answer : C**

**Q:21. What does EXPOSE 80 do in a Dockerfile?**

**A. Opens port on host  
B. Informs Docker that the container listens on port 80  
C. Maps port to host  
D. Starts a web server**

**Answer : B**

**Q:22. What is a Pod in Kubernetes?**

**A. The smallest deployable unit containing one or more containers  
B. A VM  
C. A cluster  
D. A node**

**Answer : A**

**Q:23. How do you create a pod using a YAML file?**

**A. kubectl apply -f pod.yaml  
B. kubectl run pod.yaml  
C. kubectl init pod.yaml  
D. k8s create pod.yaml**

**Answer : C**

**Q:24. Which of the following is a Master component?**

**A. kubelet  
B. API Server  
C. Pod  
D. Container runtime**

**Answer : B**

**Q:25. Which tool is commonly used for ML model monitoring?**

**A. Prometheus  
B. GitHub  
C. Docker Hub  
D. TensorBoard**

**Answer : A**

**Q:26. What is concept drift in machine learning?**

**A. Codebase changes  
B. Change in data distribution over time  
C. GPU degradation  
D. UI rendering delay**

**Answer : B**

**Q:27. What is a best practice for production logging?**

**A. Avoid printing sensitive data  
B. Use only print statements  
C. Log all user inputs  
D. Use DEBUG level always**

**Answer : A**

**Q:28. In a CI/CD pipeline for ML, what is typically automated during the "Integration" phase?**

**A. Model inference  
B. Manual testing  
C. Code merging, testing, and validation  
D. Monitoring live traffic**

**Answer : C**

**Q:29. What is a "job" in GitHub Actions?**

**A. A manual task performed by the user  
B. A unit of work that runs on a runner  
C. A function in a Python script  
D. A GitHub branch**

**Answer: B**

**Q:30 Which of the following tools helps deploy ML models in a cloud-native CI/CD workflow?**

**A. MySQL  
B. Streamlit  
C. Kubernetes  
D. Scikit-learn**

**Answer: C**