**Unit -1**

**Question 1**

**What is Machine Learning?**  
A) A programming language for building AI systems  
B) A method where computers learn from data to make predictions or decisions  
C) A hardware component used to speed up AI computations  
D) A type of database for storing large datasets

**Question 2**

**Which of the following is NOT a type of Machine Learning?**  
A) Supervised Learning  
B) Unsupervised Learning  
C) Reinforcement Learning  
D) Manual Learning

**Question 3**

**In Supervised Learning, what is typically required for training a model?**  
A) Labeled data with input-output pairs  
B) Unlabeled data with no specific outputs  
C) Real-time feedback from the environment  
D) Randomly generated data

**Question 4**

**Which of these tasks is an example of a Machine Learning application?**  
A) Predicting house prices based on size and location  
B) Writing a novel from scratch  
C) Manually sorting emails into folders  
D) Formatting a spreadsheet

**Question 5**

**What is the main goal of Unsupervised Learning?**  
A) To classify data into predefined categories  
B) To find hidden patterns or structures in unlabeled data  
C) To optimize actions based on rewards and penalties  
D) To generate new data from scratch

**Unit -2**

**Question 6**

**What is a lambda function in Python?**  
A) A named function defined using the def keyword  
B) An anonymous, inline function defined using the lambda keyword  
C) A built-in function for looping through lists  
D) A method to create classes in Python

**Question 7**

**Which of the following is the correct syntax for a lambda function that adds two numbers?**  
A) lambda x, y: x + y  
B) def lambda x, y: x + y  
C) lambda: x + y  
D) lambda x + y

**Question 8**

**In Python OOP, what is the purpose of the \_\_init\_\_ method in a class?**  
A) To destroy an object when it is no longer needed  
B) To initialize the attributes of an object when it is created  
C) To define a static method for the class  
D) To inherit properties from another class

**Question 9**

**What will be the output of the following code?**

f = lambda x: x + 6

print(f(5))

A) 5  
B) 12  
C) 22  
D) 11

**Question 10**

**What will be the output of the following code?**

f = lambda x: x \* 2

print(f(5))

A) 5  
B) 10  
C) 2  
D) Error

**Unit-3**

**Question 11**

**What is the core idea behind the K-Nearest Neighbors (KNN) algorithm?**A) It builds a tree structure to classify data  
B) It classifies data points based on the majority class of their k nearest neighbors  
C) It assumes features are independent and applies probability rules  
D) It finds a hyperplane that best separates classes

**Question 12**

**In Support Vector Machines (SVM), what is the purpose of the "kernel trick"?**  
A) To reduce the dimensionality of the dataset  
B) To transform data into a higher-dimensional space to make it linearly separable  
C) To calculate distances between all data points  
D) To simplify the model by removing support vectors

**Question 13**

**Which assumption is central to the Naive Bayes classifier?**  
A) All features are independent of each other given the class label  
B) The data follows a linear relationship  
C) The decision boundary must be a hyperplane  
D) The dataset must contain only numerical features

**Question 14**

**What is a key characteristic of a Decision Tree algorithm?**  
A) It uses probabilistic rules to classify data  
B) It splits data into branches based on feature values to make decisions  
C) It relies on finding the nearest neighbours to a data point  
D) It maximizes the margin between classes

**Question 15**

**Which of these algorithms is most sensitive to the scale of the input features?**  
A) Naive Bayes  
B) Decision Tree  
C) K-Nearest Neighbors (KNN)  
D) Support Vector Machines (SVM)

Answer key –

1-B

2-D

3-A

4-A

5-B

6-B

7-A

8-B

9-D

10-B

11-B

12-B

13-A

14-B

15-C