Machine Learning Assignment Questions

1. Define Machine Learning in your own words. Provide a real-life example where ML is being used.
2. Differentiate between Supervised and Unsupervised Learning. Give two examples of each.
3. Explain the key differences between Classification and Regression problems with suitable use cases.
4. What is Reinforcement Learning? Describe a scenario where it is more suitable than other ML types.
5. Why is data preprocessing important in machine learning? List at least three common preprocessing steps.
6. Describe the role of Feature Engineering in the ML pipeline. Provide one example of a feature you can create from raw data.
7. List and briefly explain each step in the classical machine learning pipeline.
8. A dataset contains information about used cars including price, mileage, age, and brand. Suggest whether this is a classification or regression problem and justify your answer.
9. What is the purpose of splitting the dataset into training and testing sets? What might happen if you skip this step?
10. Imagine you are building a spam email detection system. Which type of ML will you use? Justify your answer and outline the steps you would take from data collection to deployment.