**Q1. What is Machine Learning?**

: Machine Learning is a subset of artificial intelligence that enables computers to “learn” from and make predictions or decisions based on data without being explicitly programmed by developing algorithms that can identify patterns, make prediction and improve performance over time through experience & exposure to more data.

There are three basic types of Machine Learning include:

* Supervised Learning: Uses labeled data for training.
* Unsupervised Learning: Identifies patterns in unlabeled data.
* Reinforcement Learning: The algorithm learns from feedback (correct or incorrect) and maximizes rewards through exploration.

**Q2. What is Supervised Learning?**

It is a type of machine learning where model trains on labeled data. The labeled datasets are used to train algorithms to predict outcomes. The datasets contains both input and output that help in analyzing the desired output value. There are two types of supervised learning algorithm that are regression and classification.

Applications of Supervised Learning include:

* Medical Diagnosis/ Recommendation system
* Fraud detection
* Speech recognition/ Image classification

Some of the supervised learning algorithms are linear regression, logistic regression, decision tress, KNN, SVMs, etc.

**Q3. What is classification and regression?**

Classification:

* It is used to group data by predicting categorical label or output variable based on input data. It is used when output variables are categorical.
* Classification algorithms predict the categories which are present in the dataset.
* Some applications of classification algorithms are: Spam Detection, Email Filtering, Image classification, object detection, etc.
* Algorithm used in classification are logistic regression, KNN, SVMs, decision trees,etc.

Regression:

* Regression algorithms are used to solve regression problems in which there is a definite linear relationship between the input and output variables.
* These are used to predict continuous output variables e.g(weather prediction).
* Algorithm used in regression are linear regression, polynomial regression, etc.