

VIDUSH SOMANY INSTITUTE OF TECHNOLOGY AND RESEARCH, KADI

Question Bank for Mid Sem Exam

Branch: CE/IT/CSE

Subject: Machine Learning

1. Define Machine learning.
2. Explain types of Machine Learning with example.
3. When should we use classification over regression?
4. What are the applications of Machine Learning? When it is used?
5. What is Probability basics in machine learning?
6. What is Linear algebra basics in machine learning?
7. What is Regression?
8. Define linear regression and explain its types? How do you interpret a linear regression model?
9. When we can use regression?
10. The values of independent variable x and dependent variable y are given below.

X	Y
0	3
2	4
3	6
4	7
5	7.5
6	8

Find the least square regression line $y = mx + c$. Estimate the value of y when x is 10.

11. What is Multiple Linear Regression?
12. What is Classification? Explain types of classification.
13. Explain Logistic Regression with Example.
14. Explain Problem of overfitting in Logistic Regression.
15. What is Regularization? Explain types of Regularization.
16. What is Support Vector Machine algorithm? Explain with example.
17. Explain KNN algorithm with example.
18. Define Terms: Cross Validation, Regression, Overfitting, under fitting, Cost Function, Confusion Matrix, Training Set, Testing Set, Root Mean Square Error, F1-Score, Precision, Recall, Accuracy
19. Difference Between Supervised Learning Vs Unsupervised Learning.
20. Discuss Lazy Learner and Eager Learner
21. What is Reinforcement Algorithm? Explain with example.
22. Why Support Vector Machine classifiers have improved classification over Linear ones? Discuss HyperPlane in SVM.
23. When should we have to use classification over regression?

24. Write a popular application of machine learning that you see on day to day basis.
25. Describe Overfitting and Underfitting problem in Machine Learning.
26. Following is the dataset result after survey from client on company produce different types of tissues.

Name	Acid Durability	Strength	Class
Type-1	10	8	Bad
Type-2	8	5	Bad
Type-3	9	5	Good
Type-4	3	5	Good

Company want to predict class for Type-5 tissue having acid durability =3 and strength=8 based on existing survey result dataset.

What will be the prediction class for Type-5 using KNN Algorithm when k=1,2 and 3?

27. Explain the bias-variance trade-off.
28. Explain Types of Cross Validation Technique.
29. Is it necessary to remove outliers? Why or why not?