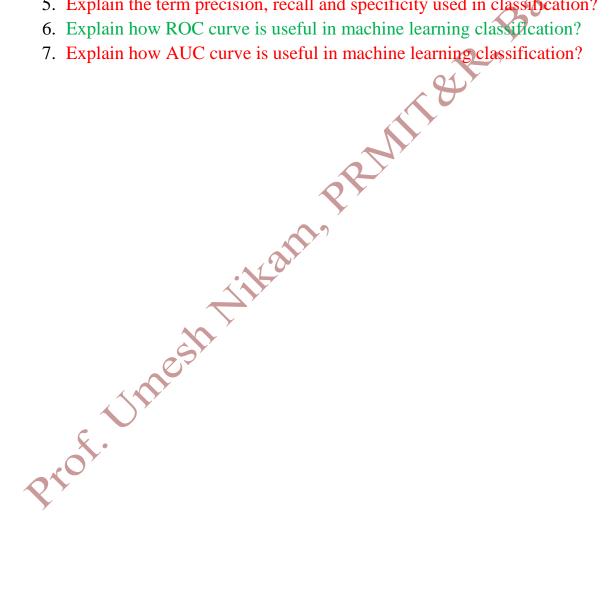
- 1. Explain the term mean, weighted mean, median, variance and standard deviation in detail.
- 2. What is Numpy? Explain with example array indexing and slicing using Numpy.
- 3. Write and explain various universal functions supported by Numpy library.
- 4. Explain the concept of broadcasting functionality with example?
- 5. What are the rules of broadcasting? Explain all the rules with example.
- 6. How pandas library is useful in DSS? Explain series object in detail.
- 7. How pandas library is useful in DSS? Explain dataframe object in detail.
- 8. How pandas library is useful in DSS? Explain how index object can be used as index set in detail.
- 9. What causes missing data? Explain how to drop column with missing values and input missing values with example?
- 10. Explain hierarchical indexing?
- 11. Explain how concat and append function can be used for combining dataset?
- 12. What is join? Explain various types of join with example?
- 13. Explain with example many to one join using merge function.
- 14. Explain with example one to many join using merge function.
- 15. Explain with example many to many join using merge function.
- 16. Explain split, apply and combine operation with example.
- 17. How pivot tables are useful? Write its syntax and explain how it handles multidimensional aggregation.

- 1. What is matplotlib and seaborn in python? How to use it for plotting a graph?
- 2. Explain the pyplot method of matplotlib library with various parameters of it?
- 3. Explain how to label a plot using titles, axix labels(x label & y label) and legend label with example?
- 4. What is the use of scatter plot method? Also explain when to use plt.plot() and when to use plt.scatter() method?
- 5. Explain how to display three dimensional data in two dimensions using contours or color coded regions.
- 6. Explain how to plot a histogram using various functions of matplotlib library?
- 7. What is sampling? What are various types of sampling?
- 8. Explain random sampling with its advantages and various types?
- 9. What is normal distribution? What are its properties? Also explain the empirical rule.
- 10. Explain binomial distribution with example?
- 11. Explain poisson's distribution in detail?

- 1. What is hypothesis? Explain null and alternative hypothesis with example?
- 2. What is level of significance and level of confidence explain with example?
- 3. What is hypothesis? Explain how to test hypothesis using one tail test?
- 4. Explain how to test hypothesis using two tailed test?
- Badhera. 5. What is P-Value? Explain how it supports to accept or reject the null hypothesis?
- 6. Explain Type I and Type II Error?
- 7. Differentiate between Type I and Type II error.
- 8. What is degree of freedom? Explain with example.
- 9. Explain how one sample Z –test is performed?
- 10.Explain one sample t-test?
- 11.Explain two sample t-test?
- 12. Explain Chi-Square test?
- 13.Explain Anova test and when to use it?
- 14. In the population, the average IQ is 100 with a standard deviation of 15. A team of scientist wants to test a new medication to see if it has either a positive or negative effect on intelligence or no effect at all. A sample of 30 who have taken the medication has a mean of 140. Did the medication affect intelligence? Prof. Umesh.

- 1. What is machine learning? Explain types of machine learning?
- 2. Explain supervised and unsupervised machine learning?
- 3. Differentiate between supervised and unsupervised machine learning algorithm?
- 4. What is machine learning? What are its application and uses?
- 5. Explain train-test and split technique of model validation in machine learning?
- 6. Explain cross validation technique of model validation in machine learning?
- 7. What is regression? Explain types of regression?
- 8. Explain simple and multi linear regression?
- 9. Explain the assumptions of regression?
- 10. What is the line of Best fit?
- ession?

- 1. Explain how logistic response function and logit is useful for logistic regression?
- 2. How to predict values form logistic function using logistic response function?
- 3. Explain interpreting the coefficient and understanding odd ratio in logistic regression?
- 4. Explain how confusion matrix is used for evaluating a classification model?
- 5. Explain the term precision, recall and specificity used in classification?
- 6. Explain how ROC curve is useful in machine learning classification?
- 7. Explain how AUC curve is useful in machine learning classification?



- 1. What is decision tree algorithm? Explain how it works?(https://www.javatpoint.com/machine-learning-decision-tree-classificationalgorithm)
- 2. What are the advantages and disadvantages of decision tree algorithm?
- 3. Explain recursive partitioning algorithm?
- 4. Explain how to measure homogeneity or impurity?
- 5. What is random forest algorithm? Explain how it works. (https://www.javatpoint.com/machine-learning-random-forest-algorithm)

rks.
andom-fc

Research, PRIMITIONE

RECEIVED

RECEIVED