Statistics Questions

1. Where you have used Hypothesis Testing in your Machine learning Solution.
2. What kind of statistical tests you have performed in your ML Application
3. What do you understand by P Value? And what is use of it in ML?
4. Which type of error is severe Error, Type 1 or Type 2? And why with example.
5. Where we can use chi square and have used this test anywhere in your application
6. Can we use Chi square with Numerical dataset? If yes, give example. If no, give Reason?
7. What do you understand by ANOVA Testing?
8. Give me a scenario where you can use Z test and T test.
9. What do you understand by inferential Statistics?
10. When you are trying to calculate Std Deviation or Variance, why you used N-1 in Denominator? (Hint: Basel Connection)
11. What do you understand by right skewness, Give example?
12. What is difference between Normal distribution and Std Normal Distribution and Uniform Distribution?
13. What is different kind of Probabilistic distributions you heard of?
14. What do you understand by symmetric dataset?
15. In your last project, were you using symmetric data or Asymmetric Data, if its asymmetric, what kind of EDA you have performed?
16. Can you please tell me formula for skewness?
17. Have you applied student T distribution Anywhere?
18. What do you understand by statistical analysis of data, Give me scenario where you have used statistical analysis in last projects?
19. Can you please tell me criterion to apply binomial distribution, with example?
20. There are 100 people, who are taking this particular 30 days Data science interview preparation course, what is the probability that 10 people will be able to make transition in 1 week? If 50 people were able to make transition in 3 weeks? (Hint: Poisson Distribution)
21. lets suppose I have appeared in 3 interviews, what is the probability that I am able to crack at least 1 interview?
22. Explain Gaussian Distribution in your own way.
23. What do you understand by $1^{st}, 2^{nd}$ and 3rd Standard Deviation from Mean?
24. What do you understand by variance in data in simple words?
25. If variance of dataset is too high, in that case How you will be able to handle it or decrease it?
26. Explain the relationship between Variance and Bias.
27. Tell me what kind of graph-based approach I will be able to apply to find out standardization of Dataset?
28. What do you understand by Z Value given in Z Table?
29. Do you know a Standard Normal Distribution Formula?
30. Can you please explain critical region in your way?
31. Have you used AB testing in your project So far? If yes, Explain. If no, Tell me about AB testing.
32. Can we use Alternate hypothesis as a null Hypothesis?
33. Can you please explain confusion matrix for more than 2 variables?
34. Give me an example of False Negative From this interview?
35. What do you understand by Precision, Recall and F1 Score with example?
36. What kind of questions do you ask to your client if they give you dataset?

37. Have you ever done F test on your dataset, if yes, give example. If No, then explain F distribution?
38. What is AUC & ROC Curve? Explain with uses.
39. Who decided in your last project, what will be the accuracy of your model & what was the criterion to make the decision.
40. What do you understand by 1 tail test & 2 tail test? give example.
41. What do you understand by power of a test?
42. How do you set level of significance for your dataset?
43. Have you ever used T table in any of your project so far? If No, then why statistic is important for data scientist? If yes, explain the scenario.
44. Can we productionise statistical model?
45. How frequently do you build the model and test it?
46. What are the testing techniques that you use for model testing, name some of those?
47. What do you understand by sensitivity in dataset? Give example.
48. Let's suppose you are trying to solve classification problem; how do you decide which algorithm to use? Give scenarios.
49. Can we use Logistic regression for classification if my no. of classes are 5?
50. Let's suppose there is company like OLA or UBER who provides service to many customers, then how will they make sure that car availability in particular region and what kind of dataset is required?
51. AI Solution for architecture -- Let's suppose there is agricultural field in diff areas in India, and we know soil & weather condition is different over India, So I am trying to build system which helps me understanding what kind of treatments I will be able to apply on my crops, which crop I can grow in particular month so I can be able to maximize the benefit form the soil. Then what kind of algorithm you will use whether its ML, DL, Vision?

What will be your approach and what kind of solution design you will provide?

52. I have a client, they are facing a problem in terms of maintaining the pipeline for water. So what kind of AI solution you will design to identify the leakage and maintenance?

53. Let's suppose I am building solution for blind people What kind of AI solution you will provide to help them to interact with the system, an Affordable solution?
54. What is difference between R2 and Adjusted R2?
55. Where do you apply Regularization and What kind of regularization you have applied and Why?
56. What do you understand by multicollinearity and homoscedasticity in Dataset?
57. Can you please explain 1 example of Polynomial Regression and how to build model for polynomial regression.
58. There is some client who are intercepting a call like 3,4 or 5 people talking in zoom call. Tell me approach so that we can able to separate the voices of each and every person. (Hint: Speech Diarization)
59. In case of multilinear regression model, let's suppose my number of features are 5. Can you explain me what kind of line it draws? Explain.
60. List no. of algorithms that you know from clustering.
61. Tell me what is evaluation techniques for clustering algorithms. List some of those.
62. Can you please explain random state in train & test split function.
63. Lets suppose client has provided me a data, how will you evaluate that the data is fit for model building?
64. Have you ever worked in your last project from scratch? Or you started working in middle. If you have started working from scratch then how what kind of work were doing. And if you have started from middle then what were your responsibility?

65. What do you understand by machine learning? how will you explain ML to Kids.
66. Let's suppose there is project which I am going to start for client (security & surveillance project). Client requirement is like this- they want to develop a system which can detect any kind of intrusion or unwanted or unclassified entity in region. 1. What kind of solution you will provide to solve this requirement. 2.And what kind of feature you will be able to provide? . Give complete proposal for this solution.