Statistics Interview Questions & Answers (PDF Notes)

Q: What is statistics?

A: Statistics is the science of collecting, analyzing, interpreting, and presenting data.

Q: What is the difference between population and sample?

A: Population is the entire group, while a sample is a subset of the population.

Q: What is mean, median, and mode?

A: Mean is average, median is middle value, and mode is most frequent value.

Q: What is standard deviation?

A: It measures how spread out the data is from the mean.

Q: What is variance?

A: It is the average of squared deviations from the mean.

Q: What is probability?

A: It is the likelihood of an event occurring.

Q: What is a random variable?

A: A variable whose value depends on chance.

Q: What is normal distribution?

A: A bell-shaped symmetric probability distribution.

Q: What is Central Limit Theorem?

A: It states that sampling distribution of the mean becomes normal as sample size increases.

Q: What is hypothesis testing?

A: A method to make decisions using data.

Q: What is null hypothesis?

A: A statement of no effect or no difference.

Q: What is p-value?

A: Probability of observing results if null hypothesis is true.

Q: What is Type I error?

A: Rejecting a true null hypothesis (false positive).

Q: What is Type II error?

A: Failing to reject a false null hypothesis (false negative).

Q: What is confidence interval?

A: A range of values likely to contain the true population parameter.

Q: What is correlation?

A: A measure of strength and direction of linear relationship.

Q: What is covariance?

A: A measure of how two variables change together.

Q: Difference between correlation and causation?

A: Correlation does not imply one variable causes another.

Q: What is skewness?

A: A measure of asymmetry in data distribution.

Q: What is kurtosis?

A: A measure of tailedness or peakedness of distribution.

Q: What is t-test?

A: A statistical test used to compare means.

Q: What is ANOVA?

A: A test used to compare means of three or more groups.

Q: What is chi-square test?

A: A test for association between categorical variables.

Q: What is outlier?

A: An extreme observation that differs significantly from others.

Q: What is R²?

A: A measure of proportion of variance explained by regression model.