# STATISTICS WORKSHEET-3

1. **Which of the following is the correct formula for total variation?**

Ans. b) Total Variation = Residual Variation + Regression Variation

2. **Collection of exchangeable binary outcomes for the same covariate data are called _____ outcomes.**

Ans. c) binomial

3. **How many outcomes are possible with Bernoulli trial?**

Ans. a) 2

**4. If Ho is true and we reject it is called**

Ans. a) Type-I error

5. **Level of significance is also called:**

Ans. b) Size of the test

**6. The chance of rejecting a true hypothesis decreases when sample size is:**

Ans. b) Increase

7. **Which of the following testing is concerned with making decisions using data?**

Ans. b) Hypothesis

8. **What is the purpose of multiple testing in statistical inference?**

Ans. d) All of the mentioned

9. **Normalized data are centred at and have units equal to standard deviations of the original data**

Ans. a) 0

**10.What is z-score?**

Ans. In statistics Z-score is the method to find out the outliers present in the data and also z-score shows how much the particular point is away from the standard daviation.

Z-scores range from -3 standard deviations up to +3 standard deviations .

Formula for find out the z-score is :

$z = (x – \mu) / \sigma$

where ,

x = data point

μ = Mean value

σ = Standard deviation

**12. What is t-test?**

Ans. The independent sample t-test or 2 sample t-test compare the mean of two independent group in order to determine whether the mean of two different variables are identical or not.

**13. What is percentile?**

Ans. In statistics percentile is used to indicate the value below which the group of percentage of data fall. For example, the 20th percentile is the value (or score) below which 20% of the observations may be found.

**14. What is ANOVA?**

Ans. ANOVA test is a type of statical test that allows a comparion of more than two groups at the same time it helps to determine whether a relationship exist between them or not.

**15. How can ANOVA help?**

Ans. The one-way ANOVA can help you to determine whether or not there are significant differences between the means of your independent variables(for ex- Age, Sex, Position).When you understand how each independent variables are different from others, you can begin to understand which of them has a connection to your dependent variables and begin to learn what is driving that behaviour.

**10.What Is Bayes' Theorem?**

Ans. In probability ,Bayes theorem is a mathematical formula, which is used to determine the conditional probability of the given event. Conditional probability is define as the likelihood that an event will occur ,based on the occurrence of a previous outcome.

$$P(A \mid B) = \frac{P(B \mid A)P(A)}{P(B)}$$

P(A|B) is the probability of event A occurring given that B is true.

P(B|A) is the probability of event B occurring given that A is true.

P(A) and P(B) are the probabilities of observing A and B respectively without any given conditions.

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