

STATISTICS WORKSHEET-3

Q1 to Q9 have only one correct answer. Choose the correct option to answer your question.

1. Which of the following is the correct formula for total variation?
 - a) Total Variation = Residual Variation – Regression Variation
 - b) Total Variation = Residual Variation + Regression Variation
 - c) Total Variation = Residual Variation * Regression Variation
 - d) All of the mentioned

Answer – b) Total Variation = Residual Variation + Regression Variation

2. Collection of exchangeable binary outcomes for the same covariate data are called outcomes.
 - a) random
 - b) direct
 - c) binomial
 - d) none of the mentioned

Answer – c) binomial

3. How many outcomes are possible with Bernoulli trial?
 - a) 2
 - b) 3
 - c) 4
 - d) None of the mentioned

Answer – a) 2

4. If H_0 is true and we reject it is called
 - a) Type-I error
 - b) Type-II error
 - c) Standard error
 - d) Sampling error

Answer – a) Type-I error

5. Level of significance is also called:
 - a) Power of the test
 - b) Size of the test
 - c) Level of confidence
 - d) Confidence coefficient

Answer – a) Power of the test

6. The chance of rejecting a true hypothesis decreases when sample size is:
- a) Decrease
 - b) Increase
 - c) Both of them
 - d) None

Answer – b) Increase

7. Which of the following testing is concerned with making decisions using data?
- a) Probability
 - b) Hypothesis
 - c) Causal
 - d) None of the mentioned

Answer – b) Hypothesis

8. What is the purpose of multiple testing in statistical inference?
- a) Minimize errors
 - b) Minimize false positives
 - c) Minimize false negatives
 - d) All of the mentioned

Answer – d) All of the mentioned

9. Normalized data are centred at _ and have units equal to standard deviations of the original data
- a) 0
 - b) 5
 - c) 1
 - d) 10

Answer – a) 0

Q10 and Q15 are subjective answer type questions, Answer them in your own words briefly.

10. What Is Bayes' Theorem?

Answer – **Bayes' theorem** describes the occurrence of an event related to any condition. It is used in case of conditional probability.

11. What is z-score?

Answer – **Z-score** is also called **Standard score**. It is measured in terms of standard deviations from the Mean score.

12. What is t-test?

Answer – **t-test** is a statistical test that is used to compare the means of two samples. It is used in hypothesis testing to determine whether a process has an effect on the population of interest, or whether two groups are different from one another.

13. What is percentile?

Answer – **Percentile** is a value of number that represents a percentage position on a range or list of the data, person or thing at the number of percentage.

14. What is ANOVA?

Answer – An **ANOVA** or **Analysis of variance** is a statistical technique that is used to check if the means of two or more groups are significantly different from each other.

15. How can ANOVA help?

Answer – ANOVA helps in Hypothetical testing. It enables the comparison of independent and dependent variables.
