STATISTICS WORKSHEET-3

1. B
2. C
3. A
4. A
5. C
6. B
7. B
8. D
9. A
10. Bayes' theorem describes the probability of occurrence of an event related to any condition

• Bayes theorem is a mathematical formula, which is used to determine the conditional probability of the given event.

• The formula for the Bayes theorem can be written in a variety of ways. The following is the most

Common version:

P(A B) = P(B A)P(A) / P(B) P(A B)is the conditional probability of event A occurring, given that B is true.

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

P(A) and P(B) are the probabilities of A and B occurring independently of one another.

11. A z score is simply defined as the number of standard deviations from the mean. The zscore can be calculated by subtracting mean by test value and dividing it by standard value. Where x is the test value, μ is the mean and σ is the standard value.

12. • t-test is a statistically significant test for the hypothesis testing (null and alternative hypotheses) when the sample size is small and the population parameter (mean and variance) is unknown.
    • It is used to determine if there is a significant difference between the means of two groups, which may be related in certain features.

13. • A percentile is a comparison score between a particular score and the scores of the rest of a group. It shows the percentage of scores that a particular score surpassed. For example, if you score 75 points on a test, and are ranked in the 85th percentile, it means that the score 75 is higher than 85% of the scores.
    • The percentile rank is calculated using the formula
    $R=(P/100)*(N)$
    where P is the desired percentile and N is the number of data points
    • Percentile is a number/value where a certain percentage of scores/data fall below that given
    number/value.

14. • An Analysis of Variance (ANOVA) is an inferential statistical tool that we use to find statistically significant differences among the means of two or more populations. We calculate variance but the goal is still to compare population mean differences.
    • Analysis of variance (ANOVA) is a statistical procedure used to test the degree to which two or more groups vary in an experiment.

15. • ANOVA checks the impact of one or more factors by comparing the means of different samples. We can use ANOVA to prove/disprove if all the medication treatments were equally effective or not.
    • ANOVA tests compare the difference between the means of two or more groups of data. ANOVA tests measure the degree to which levels or groups of an independent variable differ from each other.
    • It helps to find out whether the difference between groups of data is statistically significant.