Statistics Workseet -3

Question1:

Answer- C)

Question 2:

Answer – C)

Question 3:

Answer – A)

Question 4:

Answer- A)

Question 5:

Answer – B)

Question 6:

Answer – B)

Question 7:

Answer – B)

Question 8:

Answer – D)

Question 9:

Answer – A)

Question 10:

Answer –

Bayes theorem describes the probability of occurrence of an event related to any condition. It is also considered for the case of conditional probability. Bayes theorem is also known as the formula for the probability of causes.

P(A/B)={P(B/A) P(A)}/P(B)

Posterior= (Prior*Likelihood)/Evidence

Question 11:

Answer – A Z-Score is a numerical measurement used in statistics of a value's relationship to the mean of the group of values, measured in terms of standard deviations from the mean. In other words, a measure of how many standard deviations below or above the population mean a raw score, is called z score.

The equation is given by $z = (x – \mu)/ \sigma$

Where,

μ = mean

σ = standard deviation

x = test value

Question 12:

Aswer –

1) A t-test is an inferential statistic used to determine if there is a statistically significant difference between the means of two variables.
2) The t-test is a test used for hypothesis testing in statistics.
3) Calculating a t-test requires three fundamental data values including the difference between the mean values from each data set, the standard deviation of each group, and the number of data values.

4) T-tests can be dependent or independent.

Question 13:

Answer – In Statistics, Percentile is ued to indicate the value below which the group of percentage of data falls below. Percentiles are used extensively to report scores in academic exams and tests, such as LSAT, GRE and SAT. For example, in 2013, the 70th percentile for GRE was 156 – so, if you scored 156, you did better than 70% of test takers.

Question 14:

Answer – Analysis of variance (ANOVA) is a statistical technique that is used to check if the means of the two or more groups are significantly different from each other. ANOVA checks the impact of one or more factors by comparing the means of different samples.

The Formula for ANOVA is:

F=MSE/MST

Where,

F=ANOVA coefficient

MST=Mean sum of squares due to treatment

MSE=Mean sum of squares due to error

Question 15:

Answer – ANOVA can help to identify the sources of variations in a data set. This can also help to improve the accuracy of data predictions and the analyses. Additionally, ANOVA can help to identify relationships between different variables in a data set. This information can be used to improve data models and the predictions. Overall, ANOVA can greatly improves the quality of data science research and results by allowing researchers to focus on the areas that need improvements.