STATISTICS WORKSHEET- 6

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

1. Which of the following can be considered as random variable?
   a) The outcome from the roll of a die
   b) The outcome of flip of a coin
   c) The outcome of exam
   d) All of the mentioned
   Ans: d. All of the Mentioned
2. Which of the following random variable that take on only a countable number of possibilities?
   a) Discrete
   b) Non Discrete
   c) Continuous
   d) All of the mentioned
   Ans: c. continuous
3. Which of the following function is associated with a continuous random variable?
   a) pdf
   b) pmv
   c) pmf
   d) all of the mentioned
   Ans: a. pdf
4. The expected value or _____ of a random variable is the center of its distribution.
   a) mode
   b) median
   c) mean
   d) bayesian inference
   Ans: c. mean
5. Which of the following of a random variable is not a measure of spread?
   a) variance
   b) standard deviation
   c) empirical mean
   d) all of the mentioned
   Ans: a. Variance
6. The _____ of the Chi-squared distribution is twice the degrees of freedom.
   a) variance
   b) standard deviation
   c) mode
   d) none of the mentioned
   Ans: a.Variance
7. The beta distribution is the default prior for parameters between _____
   a) 0 and 10
   b) 1 and 2
   c) 0 and 1
   d) None of the mentioned
   Ans: c 0 and 1
8. Which of the following tool is used for constructing confidence intervals and calculating standard errors for difficult statistics?
   a) baggyer
   b) bootstrap
   c) jacknife
   d) none of the mentioned
   Ans: b.Bootstarp

9. Data that summarize all observations in a category are called _____ data.
   a) frequency
   b) summarized
   c) raw
   d) none of the mentioned

Ans: b.summarized

Q10and Q15 are subjective answer type questions, Answer them in your own words briefly.

10. What is the difference between a boxplot and histogram?
11. How to select metrics?
12. How do you assess the statistical significance of an insight?
13. Give examples of data that doesnot have a Gaussian distribution, nor log-normal.
14. Give an example where the median is a better measure than the mean.
15. What is the Likelihood?

Ans 10: Histograms are a special kind of bar graph that shows a bar for a range of data values instead of a single value. A box plot is a data display that draws a box over a number line to show the interquartile range of the data. The 'whiskers' of a box plot show the least and greatest values in the data set.

Ans 11: prioritize objectives, examine which metric consistently predicts their achievement, and identify which activities influence predictors, in that order. And continuously re-evaluate this process to keep up with the times.

Ans 12: Steps in Testing for Statistical Significance
1. State the Research Hypothesis.
2. State the Null Hypothesis.
3. Select a probability of error level (alpha level)
4. Select and compute the test for statistical significance.
5. Interpret the results.

Ans 13: Exponential distributions do not have a log-normal distribution or a Gaussian distribution. In fact, any type of data that is categorical will not have these distributions as well. Example: Duration of a phone car, time until the next earthquake

Ans 14: Income is the classic example of when to use the median instead of the mean because its distribution tends to be skewed. The median indicates that half of all incomes fall below 27581, and half are above it. For these data, the mean overestimates where most household incomes fall.

Ans 15: The likelihood is the probability that a particular outcome is observed when the true value of the parameter is , equivalent to the probability mass on ; it is not a probability density over the parameter .