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? (d)
   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
2. Which of the following random variable that take on only a countable number of possibilities? (a)
   a) Discrete
   b) Non Discrete
   c) Continuous
   d) All of the mentioned
3. Which of the following function is associated with a continuous random variable? (a)
   a) pdf
   b) pmv
   c) pmf
   d) all of the mentioned
4. The expected value or _____ of a random variable is the centre of its distribution. (a)
   a) mode
   b) median
   c) mean
   d) bayesian inference
5. Which of the following of a random variable is not a measure of spread? (a)
   a) variance
   b) standard deviation
   c) empirical mean
   d) all of the mentioned
6. The _____ of the Chi-squared distribution is twice the degrees of freedom. (a)
   a) variance
   b) standard deviation
   c) mode
   d) none of the mentioned
7. The beta distribution is the default prior for parameters between _____ (c)
   a) 0 and 10
   b) 1 and 2

c) 0 and 1

d) None of the mentioned

8. Which of the following tool is used for constructing confidence intervals and calculating standard errors for difficult statistics? (c)

a) baggyer

b) bootstrap

c) jacknife

d) none of the mentioned

9. Data that summarize all observations in a category are called _____ data. (b)

a) frequency
b) summarized
c) raw
d) none of the mentioned

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

10. **What is the difference between a boxplot and histogram?**

Histograms indicate the whole frequency distribution of a variable, whereas the boxplot summarises its most prominent features. These features include median and spread as well as the extent and nature of departures from symmetry, and the possible presence of observations having extreme values (outliers).

11 How to select metrics?

-> Define your primary objective.

-> Choose your metric(s) - determine cause and effect.

-> Create relevant activities.

-> Evaluate periodically

12 How do you assess the statistical significance of an insight?

-> State the Research Hypothesis

-> State the Null Hypothesis

-> Select a probability OF error level

-> The Chi Square Test

-> Degrees Of Freedom

-> Distribution Tables

-> Interpret the results

-> Use T-Tests, Calculate t value

-> Distribution and interpret the value of t

-> Report test of statistical significance

13 Give examples of data that doesnot have a Gaussian distribution, nor log-normal.

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, etc.

15. What is the Likelihood?

14. Give an example where the median is a better measure than the mean.