STATISTICS WORKSHEET-5

Q1 to Q10 are MCQs with only one correct answer. Choose the correct option.

1. Using a goodness of fit, we can assess whether a set of obtained frequencies differ from a set of frequencies.
   a) Mean
   b) Actual
   c) Predicted
   d) Expected

Ans: d) Expected
Explanation: A goodness of fit test is a statistical test of the hypothesis that the observed frequency distribution of a categorical variable matched the expected frequency distribution.

2. Chisquare is used to analyses
   a) Score
   b) Rank
   c) Frequencies
   d) All of these

Ans: c) Frequencies
Explanation: The person Chi-square test is used to determine whether there is a statistically significant difference between the expected frequencies and the observed frequencies in one or more categories of the pivot table.

3. What is the mean of a Chi Square distribution with 6 degrees of freedom?
   a) 4
   b) 12
   c) 6
   d) 8

Ans: c) 6
Explanation: By the property of Chi-square distribution, the mean corresponds to the number of degrees of freedom. Degrees of freedom = 6. Hence mean = 6.

4. Which of these distributions is used for a goodness of fit testing?
   a) Normal distribution
   b) Chi-squared distribution
   c) Gamma distribution
   d) Poisson distribution

Ans: b) Chi-Squared distribution
Explanation: The Chi-square test is used exclusively for data put into classes (bins), and it requires a sufficient sample size in order to produce accurate results.

5. Which of the following distributions is Continuous
   a) Binomial Distribution
   b) Hypergeometric Distribution
   c) F Distribution
   d) Poisson Distribution

Ans: c) F- Distribution
Explanation: Binomial, Poisson and Hyper geometric distribution are Discrete Distributions. Only F-Distribution is

continuous distribution in the given distributions.

6. A statement made about a population for testing purpose is called?
   a) Statistic
   b) Hypothesis
   c) Level of Significance
   d) Test Statistic

Ans: b) Hypothesis
Explanation: Hypothesis is a statement made about a population in general. It is then tested and correspondingly accepted if True and rejected if False.

7. If the assumed hypothesis is tested for rejection considering it to be true is called?
   a) Null Hypothesis
   b) Statistical Hypothesis
   c) Simple Hypothesis
   d) Composite Hypothesis

Ans: a) Null Hypothesis
Explanation: If the assumed hypothesis is tested for rejection considering it to be true is called Null Hypothesis. It given the value of population parameter.

8. If the Critical region is evenly distributed then the test is referred as?
   a) Two tailed
   b) One tailed
   c) Three tailed
   d) Zero tailed

Ans: a) Two tailed
Explanation: In two tailed test the Critical region is evenly distributed. One region contains the area where Null Hypothesis is accepted and another contains the area where it is rejected.

9. Alternative Hypothesis is also called as?
   a) Composite hypothesis
   b) Research Hypothesis
   c) Simple Hypothesis
   d) Null Hypothesis

Ans: b) Research Hypothesis
Explanation: Alternative Hypothesis is also called as Research Hypothesis. If the Null Hypothesis is false then Alternative Hypothesis is accepted.

10. In a Binomial Distribution, if ‘n’ is the number of trials and ‘p’ is the probability of success, then the mean value is given by _____
    a) np
    b) n

Ans: a) np
Explanation: For a discrete probability function, the mean value or the expected value is given by:
Mean (μ)=$\sum nx=0xp(x)$
For Binomial Distribution $P(x)={}^{n}C_{x}\ p^{x}\ q^{(n-x)}$, substitute in above equation and solve to get
$\mu = np$.