

Cat. No: Stat.3501.
Title: Statistics (1+1)

Marks: 50.00
Time: 2 hours

I Fill up the blanks

(10x1=10)

1. A representative part of the population is known as -----
2. The mean of the set of values 3,5,2,6,4,3 is -----
3. Measures of dispersion which are free from units of measurements are called -----
4. The square root of Variance is known as -----
5. A distribution which is more peaked than the normal curve is referred to as -----
6. The variable to be predicted in regression analysis is called ----- variable
7. The square of correlation coefficient is known as -----
8. The set of all possible outcomes of a random experiment is known as -----
9. Probability of occurrence of an event ranges from ----- to-----
10. If the observed and expected frequencies completely coincide, the value of chi-square will be -----

II Write short notes/answers on any FIVE

(5x2=10)

1. What is meant by frequency distribution? Explain the procedure of constructing a frequency distribution from raw data.
2. What is meant by sampling? Point out its significance in statistics.
3. Explain the concept of measure of central tendency. What purposes do they serve?
4. What is meant by 'dispersion'? In what way measures of dispersion supplement measures of central tendency?
5. Explain the meaning of skewness and kurtosis using sketches of frequency curves.
6. Define Binomial distribution. Under what conditions does it tend to Normal distribution?
7. Explain the concept of statistical significance. Distinguish between the two types of errors in testing of hypothesis.

III Write short answers on any FIVE

(5x4=20)

1. What are the requisites for an ideal measure of central tendency? Compare and contrast arithmetic mean, median and mode, pointing out their merits and demerits.
2. Distinguish between:
 - i. Positive and negative correlation
 - ii. Linear and non-linear correlation
 - iii. Simple, partial and multiple correlations
3. Describe the method of least squares and explain how it can be used to fit a linear regression.
4. Define the terms:
 - (i) Mutually exclusive events
 - (ii) Independent events
 - (iii) Expectation of random variable
5. Distinguish between large sample and small sample tests of significance, stating the assumptions in each case. Explain any two large sample tests of significance.
6. What is meant by standard error? Explain its uses in statistical inference.
7. Describe the chi-square test of significance. State the conditions to be satisfied for using this test. Mention any two uses of chi-square test.

IV Write essay on any ONE

(1x10=10)

1. What is meant by statistical quality control? Give the general theory of control charts. Explain the different types of control charts popularly used in practice.
2. Define the term 'dispersion'. Explain the various measures of dispersion with their relative merits and demerits.
