

3. Define population and sample with example. (3)
4. Define parameter and statistics with example. (3)
5. Describe scatter diagram with graph. (3)
6. Suppose a sample is taken from a normal distribution with mean $\bar{x} = 0.354$ and population S.D = 0.048. If the sample size is taken to be 15, estimate a 95% confidence interval for population mean (μ). (3)

OR

Suppose a sample is taken from a normal distribution with proportion $p = 0.354$ and If the sample size is taken to be 15, estimate a 95% confidence interval for population proportion (P). (3)

Group-C

(Long Answer Type Questions)

5 x 6 = 30

7. Describe the assumptions of linear regression. (5)
8. The mean yield for one acre plot is 662kilos with a s.d 32kilos. Assuming normal distribution, estimate how many one acre plots in a batch of 1000 plots would you expect to have yield i) over 700 kilos, ii) below 650 kilos. (5)
9. A random sample of 400 is taken from a large number of coins. The mean weight of the coins in the sample is 28.57 gms and s.d is 1.25 gms. What are the limits which have a 95% chance of including the mean weight of all the coins. (5)
10. Describe one tailed and two tailed tests. (5)
11. Describe simple and composite hypothesis briefly with examples. (5)
12. A sample of nine plastic nuts yielded an average diameter of 3.1 cm with sample standard deviation of 1.0 cm. It is assumed from design and manufacturing requirements that the population mean of nuts is 4.0 cm. Evaluate the mean diameter of plastic nuts being produced. (5)

OR

A fertilizer mixing machine is set to give 12 kg of nitrate for every quintal bag of fertilizer. Ten 100 kg bags are examined. The percentage of nitrate are: 14, 11, 13, 12, 13, 12, 13, 11, 13, 12. Evaluate if there is a reason to believe that the machine is defective? Critical value for t-distribution for 9 d.f. is 2.262. (5)

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