



INDIAN SCHOOL NIZWA - WORKSHEET

SUBJECT: MATHEMATICS CH-5 INFERENCE STATISTICS

Name: _____

Date: _____

Class: XII B

1.	An observed set of population that has been selected for analysis is called (a) a sample (b) a process (c) a forecast (d) a parameter
2.	A Specific characteristic of a population is known as a (a) a sample (b) parameter (c) statistic (d) mean
3.	A specific characteristic of a sample is known as a (a) population (b) parameter (c) statistic (d) mean
4.	Inferential statistics is a process that involves all the following except (a) estimating a parameter (b) estimating a statistic (c) test a hypothesis (d) analysis relationships.
5.	The following data are from a simple random sample : 5,8,10,7,10,4. The point estimate of the population is (a) 7 (b) 6 (c) 8 (d) 9
6.	A population consists of four observations 1,3,5,7. What is the variance? (a) 2 (b) 4 (c) 5 (d) 6
7.	A simple random sample consists of four observations 1,3,5,7.What is the point estimate of population standard deviation? (a) 2.3 (b) 2.58 (c) 2.87 (d) 3.1
8.	A sample of 50 bulbs is taken at random. Out of 50 we found 15 bulbs are Bajaj, 17 are of Surya and 18 are of Crompton. What is the point estimate of population proportion of Surya? (a) 0.3 (b) 0.34 (c) 0.36 (d) 0.4
9.	What does it mean that you calculate a 95 %confidence interval ? (a)The process you used will capture the true parameter 95 % of the time in long run. (b) you can be 95% confident that your interval will include the population parameter (c) you can be 5% confident that your interval will not include the population parameter (d) all the above statements are true.
10.	The assumed hypothesis which is tested for rejection considering it to true is called (a)Null hypothesis (b)alternative hypothesis (c)simple hypothesis (d)true hypothesis.
11.	A machine produces washers of thickness 0.50 mm. To determine whether the machine is in proper working order, a sample of 10 washers is chosen for which the mean thickness is 0.53 mm and the standard deviation is 0.03 mm. Test the hypothesis at 5% level of significance that the machine is working in proper order. (Ans: $t = 3$ Since $t(3) > t_{0.025}(2.262)$, the null hypothesis H_0 can be rejected. Hence we conclude that machine is not working properly.)



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12.	A random sample of 17 values from a normal population has a mean of 105 cm and the sum of the squares of deviations from this mean is 1225 cm ² . Is this assumption of a mean of 110 cm for the normal population reasonable? Test under 5% level of significance. (Given $t_{16}(0.05) = 2.12$)
13.	A group of 5 patients treated with medicine P and second group of 7 patients treated with medicine Q. The sample means were found to be 8 and 9 respectively and the sample standard deviation 'S' is 3.71. Comment on the rejection of the hypothesis with significance level 5%. (Given $t_{10}(0.05) = 2.23$) (Ans : $t = -0.46$, Since $ t < t_{10}(0.05)$, the null hypothesis H_0 is accepted at 5% level of significance.)
14.	A random sample of 17 values from a normal population has a mean of 105 cm and the sum of the squares of deviations from this mean is 1225 cm ² . Is this assumption of a mean of 110 cm for the normal population reasonable? Test under 5% level of significance. (Given $t_{16}(0.05) = 2.12$) (Ans: $t = -2.3561$, Since $ t > t_{16}(0.05)$, the null hypothesis H_0 can be rejected. We may conclude that the assumption that the mean of the population is 110 cm is not valid.)
15.	The average height of a random sample of 400 adult males of a city is 175 cm. It is known that population standard deviation is 40. Determine the 90% confidence interval for the population mean. ($Z_{0.05} = 1.645$)