

INDEX

EX. NO	Experiment Name	Page
1	Find out the point estimate of the population mean and interval estimate of the population mean. Where 30 students quiz test marks is (2,4,3,23,25,27,28,13,15,16,20,14,35,33,32,21,35,40,42,22,33,13,17,20,25,29,27,40,38,31) Total marks 50. Here population size $N=30$ and sample size $n=10$.also illustrate the sample size determination, sampling distribution for mean and check the unbiasedness of the population mean.	1-5
2	Two dice rolled, S is the sum of both faces, Find the expectation of S , $E(s)$ and variance of S , $V(s)$.Plot the distribution of S and dice D .	6-8
3	A herd of 1500 steer was fed a special high protein gain for a month. A random sample of 29 was weighted and had gained an average of 6.7 pounds. If the sd of weight gain for the entire herd is 7.1. Test the hypothesis at 5% level of significance that the average weight gain per steer for the month was more than 5 pounds. Also comments on the test using the p-value. Create the confidence interval.	9-11
4	In order to find out whether children with chronic diarrhea have the same average hemoglobin level(HB) that is normally seen in healthy children in the same area, a random sample of 10 children with Chronic diarrhea are selected, and their HB levels <g/dl) are obtained as follows: 12.3, 11.4, 14.2, 15.3, 14.8, 13.8, 11.1, 15.1, 15.8, 13.2. Do the data provide sufficient evidence to indicate that the mean HB level for children with chronic diarrhea is less than the normal value of 14.6 (g/dl)? Test at 0.01 level of significance. Draw a boxplot and normal plot for this data and comments.	12-15

5	<p>In order to find out whether children with chronic diarrhea have the same average hemoglobin level(HB) that is normally seen in healthy children in the same area, a random sample of 10 children with chronic diarrhea are selected, and their HB levels <g/dl are obtained as follows: 12.3, 11.4,14.2, 15.3, 14.8, 13.8, 11.1,15.1,15.8,13.2 .Another random sample of 12 children with chronic diarrhea are 11.1, 17.2, 13.4, 15.2, 14.1, 13.0,12.5, 11.5, 12.7, 14.5, 15.3, 14.0.</p> <p>Is there any difference in the mean HB label between the two groups of children???</p>	16-19																
6	<p>Test the hypothesis that the mean systolic blood pressure of healthy subjects (status-0) and subject with hypertension (status-1) are equal, have $\mu_0 = \mu_1$. The dataset contains $n_1= 25$ subjects with status-0 and $n_2= 30$ with status-1.</p> <p>Status-0: (120, 115, 94, 118, 111, 102, 102, 131, 104, 107, 115, 139, 115, 113, 114, 105, 115, 134,109, 109, 93, 118, 109, 106, 125).</p> <p>Status-1: (150, 142, 119, 127, 141, 149, 144, 142, 149, 161, 143, 140, 148, 149, 141, 146, 159, 152,135, 134, 161, 130, 125, 141, 148, 153, 145, 137, 147, 169).</p>	20-22																
7	<p>The 126 people have some doing smoking and some do not smoke. Some of this type of data are tabulated is given below:</p> <table><tr><th>Diseases Smoking</th><th>Heart disses</th><th>Not heart disses</th><th>Total</th></tr><tr><td>YES</td><td>55</td><td>16</td><td>71</td></tr><tr><td>No</td><td>23</td><td>32</td><td>55</td></tr><tr><td>Total</td><td>78</td><td>48</td><td>N=126</td></tr></table> <p>Is there any association between smoking and heart disses for the given data???</p>	Diseases Smoking	Heart disses	Not heart disses	Total	YES	55	16	71	No	23	32	55	Total	78	48	N=126	23-24
Diseases Smoking	Heart disses	Not heart disses	Total															
YES	55	16	71															
No	23	32	55															
Total	78	48	N=126															
8	<p>There are two COVID-19 testing booths, we test some people and their recorded data is below, where the numbers of people of booth-1 are 11 and the numbers of people of booth-2 are 10:</p> <p>Booth-1: positive, positive, negative, positive, negative, negative, positive, positive, positive, negative, positive.</p> <p>Both-2: negative, negative, negative, positive, positive, negative, positive, negative, negative, negative.</p> <p>Is there any relation between two both???</p>	25-28																

9	<p>The number of systolic blood pressure of healthy subjects. The data set contains $n=25$.</p> <p>120, 115, 94, 118, 111, 102, 102, 131, 104, 107, 115, 139, 115, 113, 114, 105, 115, 134, 109, 109, 93, 118, 109, 106, 125.</p> <p>Do you think that the sample follows $N(\mu, 400)$</p>	29-30
10	<p>Test the hypothesis that the mean systolic blood pressure of healthy subjects (status-0) and subject with hypertension (status-1) are equal, have $\mu_0 = \mu_1$. The dataset contains $n_1 = 25$ subjects with status-0 and $n_2 = 30$ with status-1.</p> <p>Status-0: (120, 115, 94, 118, 111, 102, 102, 131, 104, 107, 115, 139, 115, 113, 114, 105, 115, 134, 109, 109, 93, 118, 109, 106, 125).</p> <p>Status-1: (150, 142, 119, 127, 141, 149, 144, 142, 149, 161, 143, 140, 148, 149, 141, 146, 159, 152, 135, 134, 161, 130, 125, 141, 148, 153, 145, 137, 147, 169).</p> <p>Are the variations in systolic blood pressure of healthy subjects with hypertension are same?</p>	31-33
11	<p>The sample observation are</p> <p>122, 145, 120, 45, 98, 67, 109, 100, 107, 106, 93, 125, 130, 90, 34, 108, 80, 48, 65, 56. The test hypothesis at 5% level of significance that the test of median. Do you think that the median is 110?</p>	34-35
12	<p>Test the hypothesis that the median systolic blood pressure of healthy subjects (status-0) and subject with hypertension (status-1) are equal, have $\mu_0 = \mu_1$. The dataset contains $n_1 = 25$ subjects with status-0 and $n_2 = 30$ with status-1.</p> <p>Status-0: (120, 115, 94, 118, 111, 102, 102, 131, 104, 107, 115, 139, 115, 113, 114, 105, 115, 134, 109, 109, 93, 118, 109, 106, 125).</p> <p>Status-1: (150, 142, 119, 127, 141, 149, 144, 142, 149, 161, 143, 140, 148, 149, 141, 146, 159, 152, 135, 134, 161, 130, 125, 141, 148, 153, 145, 137, 147, 169).</p> <p>Is there any difference in the median between status-0 and status-1?</p>	36-37