



NARSIMHA REDDY ENGINEERING COLLEGE

UGC AUTONOMOUS INSTITUTION

Your roots to success...

Maisammaguda (V), Kompally - 500100, Secunderabad, Telangana State, India

UGC - Autonomous Institute
Accredited by NBA & NAAC with 'A' Grade
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UNIT-III ESTIMATION

S.No	Questions	BT	CO	PO
Part – A (Short Answer Questions)				
1	State the conditions under which Normal distribution is a limiting case of Binomial.	L1	CO3	PO1
2	If X is a Normal variate with mean 30 and standard deviation 5. find $P(26 \leq X \leq 40)$.	L2	CO3	PO2
3	Define Normal distribution.	L1	CO3	PO1
4	Define statistic and standard error of a statistic.	L1	CO3	PO1
5	Find the value of the finite population correction factor for $n=10$ and $N=100$.	L3	CO3	PO2
6	A mobile conversation follows an Exponential distribution $f(x) = \frac{1}{3}e^{-x/3}$. What is the probability that the conversation takes more than 5 mins.	L3	CO3	PO2
7	Define Uniform Distribution and write its mean and variance.	L1	CO3	PO1
8	The variance of a population is 2. The size of the sample collected from the population is 169. What is the standard error of mean.	L3	CO3	PO2
9	Three masses are measured as 62.34, 20.48, 35.97kgs with standard deviation 0.54, 0.21, 0.46 kgs. Find the mean and standard deviation of the sum of the masses.	L3	CO3	PO2
10	A population consists 5, 10, 14, 18, 13, 24. Consider all possible samples of size two which can be drawn without replacement from the population. Find mean and variance of the population.	L3	CO3	PO2
Part – B (Long Answer Questions)				
11	a) In a normal distribution 7% of the items are under 35 and 89% are under 63. Determine the mean and variance of the distribution	L4, L5	CO3	PO3
	b) If the masses of 300 students are normally distributed with mean 68 kgs and standard deviation 3kgs how many students have masses i. Greater than 72kgs ii. Less than or equal to 64 kgs	L3	CO3	PO2
12	a) A sample of 26 bulbs gives a mean life of 990 hours with a standard deviation of 20 hours. The manufacturer claims that the mean of bulbs is 1000hrs. is the sample not up to standard	L3	CO3	PO2

	b)	The means of two random samples of sizes 9 and 7 are 196.42 and 198.82 respectively. The sum of the squares of the deviations from the mean are 26.94 and 18.73 respectively. Can the sample be considered to have been from the same normal population	L3	CO3	PO2																						
13	a)	Memory capacity of 10 students were tested before and after training <table border="1"><tr><td>Before</td><td>12</td><td>14</td><td>11</td><td>8</td><td>7</td><td>10</td><td>3</td><td>0</td><td>5</td><td>6</td></tr><tr><td>After</td><td>15</td><td>16</td><td>10</td><td>7</td><td>5</td><td>12</td><td>10</td><td>2</td><td>3</td><td>8</td></tr></table> Test whether the intensive training is useful at 5% level of significance.	Before	12	14	11	8	7	10	3	0	5	6	After	15	16	10	7	5	12	10	2	3	8	L4,L5	CO3	PO3
Before	12	14	11	8	7	10	3	0	5	6																	
After	15	16	10	7	5	12	10	2	3	8																	
	b)	The number of automobile accidents per week in a certain community are as follows:12,8,20,2,14,10,15,6,9,4. Are these frequencies in agreement with the belief that the accident conditions were same during this 10-week period	L3	CO3	PO2																						

