	SRM Institute of Science and Technology Department of Mathematics **18MAB204T- Probability and Queueing Theory** **Module – IV** **Tutorial Sheet – I0**

	Questions
1	Test whether the two populations have the same variance. Sample I: 20 16 26 27 23 22 18 24 Sample II: 17 23 32 25 22 24
2	Test whether the samples have been drawn from the same normal population. 	Sample	Size	Mean	Variance
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1	16	440	40
2	25	462	42	
3	Two random samples gave the following results. 	Sample	Size	Sample Mean	Sum of squares of deviations from the mean
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1	12	14	108
2	10	15	90	 Test whether the samples came from the same normal population.
4	From the following two sample values, find out whether they have come from the same normal population. | Sample 1	17	27	18	25	27	29	27	23	17
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Sample 2	16	16	20	16	20	17	15	21		
5	Fit a binomial distribution for the following data and also test the goodness of fit. x: 0 1 2 3 4 f: 5 29 36 25 5
6	Fit a Poisson distribution for the following data and also test the goodness of fit. x: 0 1 2 3 4 f: 123 59 14 3 1
7	The table below gives the number of aircraft accidents that occurred during the various days of the week. 	Days	Mon	Tue	Wed	Thurs	Fri	Sat
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No. of accidents	14	18	12	11	15	14	

8	Among 64 off-springs of a certain cross between guinea pigs, 34 were red, 10 were black and 20 were white. According to the genetic model, these numbers should be in the ratio 9:3:4. Are the data consistent with the model at 5% level?

9	500 patient's reaction to the treatment is recorded in the following table. On the basis of this data, can it be concluded that drug and sugar pills differ significantly in curing cold.

	Helped	Harmed	No effect
Drug	150	30	70
Sugar pills	130	40	80

10	Two batches each of 12 animals are taken for test of inoculation. One batch was inoculated and the other batch was not inoculated. The frequencies of the dead and surviving animals are given below in both cases. Can the inoculation be regarded as effective against the disease?

	Dead	Survived	Total
Inoculated	2	10	12
Not inoculated	8	4	12
Total	10	14	24