Roll No. …….

B.Sc.(Hons.) III SEMESTER PRACTICAL EXAMINATION 2021-22

STATISTICS

Paper No.: STB-302

Time: Four hours MM: 70

Note: Attempt any ***Three*** questions. All the questions carry equal marks.

1. Seven coins are tossed and number of heads noted. The experiment is repeated 128 times and the following distribution is obtained:

No of Heads	0	1	2	3	4	5	6	7
Frequencies	7	6	19	35	30	23	7	1

Fit a binomial distribution to the data and test the goodness of fit using χ^2 test.

2. An investigator has to answer the question: whether there is a significant difference in the average cycle time to deliver a pizza from Pizza Company A vs Pizza Company B. Following is the data collected from a sample of deliveries of Company A and Company B. Suggest an appropriate answer.

Company A: 24.2 20.4 15.4 21.4 20.2 18.5 21.5
Company B: 20.2 16.9 18.5 17.3 20.5 19.2

3. A firm manufacturing rivets wants to limit variation in their length as much as possible. The lengths (in cm.) of 10 rivets manufactured by a new process are 3.12, 2.96, 3.02, 3.9, 3.14, 3.00, 2.95, 3.03, 3.22, 2.90. In past, the standard deviation of length of rivets manufactured by the firm has been 0.145 cm. Examine whether the new process seems to be superior (that is having least s.d. of length of rivets) to the old.

4. Two experimenters, A and B, take repeated measurements on the length of a copper wire. On the basis of the data obtained by them, which are given below, test whether B's measurements are more accurate (has less standard deviation) then A's.

A's measurements 13.48 12.91 12.78 12.97 13.79 13.45 13.14 12.87 13.26 13.30

B's measurements 13.07 13.24 13.47 12.99 13.23 13.35 13.47 13.40

5. Use appropriate non-parametric test to test whether the following two samples have come from the same population.

X: 1.1, 5.2, 11.4, 2.2, 7.0, 18.0, 3.3, 9.1
Y: 19.1, 10.3, 6.5, 4.2, 8.1,12.2, 14.8, 13.1,15.0

6. On the basis of 20 ear-head measurements for a variety of wheat, test whether the median length of ear-head measurement is 9.9 cm.

9.3, 8.8, 10.8, 11.5, 8.2, 9.7, 10.3, 8.6, 11.3, 10.7, 11.2, 9.0, 9.8, 9.3, 9.9, 10.3, 10.0, 10.1, 9.6, 10.4,