Name : ....

Roll No. : ....

DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE
Tutorial 3
VIth Semester
AIT362 - PROGRAMMING IN R
Batch: AD, CY, CSE AI 2022

Total Mark: 10   **Total Time: 1 Hrs**

Course Outcome (CO)
After completion of this course, the students will be able to
CO3 Illustrate the use of Probability distributions and basic statistical functions

PART A		
No.	**Questions**	**Marks**	**CO**
1.	A medical researcher is studying the effect of a new drug on blood pressure. They collected systolic blood pressure readings before and after administering the drug to 100 patients. a) Which statistical test would you use to determine if the drug had a significant effect? Justify your answer. b) Write an R code snippet to perform the appropriate test. c) If the p-value is 0.04, how would you interpret the results?	5	CO3
2.	A factory manager wants to model the probability of a machine failing on a given day, assuming a Poisson process with an average of 2 failures per week. a) How would you use R to model the probability of exactly 3 failures in a week? b) Write an R script to calculate and visualize the Poisson distribution. c) If the failure rate increases to 4 per week, how would this affect the distribution?	5	CO3