TEZPUR UNIVERSITY
Assignment (Spring) 2022
MMS104: Probability & Statistics

Total Marks: 30

The figures in the right-hand margin indicate marks for the individual question.
All questions are compulsory.
Answers should be concise and entire answer to a question should be together. State assumptions wherever made.

1. Obtain a relation between the Standard Deviation and the Range of a Set of Numbers. **6**

2. Given a set of numbers $\{-1, 0.5, 0, 1\}$, obtain the first and third quartiles. **3+3=6**

3. Given a set of bivariate data $\{(-1, -0.5), (0, 0), (1, 0.5), (2, 1)\}$ compute the regression coefficient of y on x and the correlation coefficient. **3+3=6**

4. Let P be a probability function on (Ω, F). If $A \subset B$, $A, B \in F$. Show that $P(B^c) \leq P(A^c)$. If $P(A) > 0$, prove or disprove $P(B^c/A) = 1 - P(B/A)$. **3+3=6**

5. Let the inter-arrival times between successive arrivals follow exponential(2) distribution. Obtain the average number of arrivals per unit time. **6**

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