DEPARTMENT OF STATISTICS
Visva-Bharati University
Probability & Probability Dist. (Code: CC-3)

Internal Test: 1
Date: 09/07/21 (Friday)

Time: 40 + 5 Minutes   *Attempt All Questions*   Total Marks: 10

1. Express $A_1 \cup A_2 \cup A_3 \cup A_4$ as union of disjoint sets. [2]

2. Two points are chosen at random on a line of unit length. Find the probability that each of the three line segments so formed will have a length $> 1/6$. [2.5]

3. A system comprising of n identical components works if at least one of the components works. Each of the components works with probability 0.6, independent of all other components. Find the minimum value of n for which the system works with probability at least 0.9. [2.5]

4. Student population of a university has 30% Asian, 40% American, 20% European and 10% African students. It is known that 40% of all Asian students, 50% of all American students, 60% of all European students and 20% of all African students are girls. Find the probability that a girl chosen at random from the university is an Asian. [3]