PES UNIVERSITY, Bangalore

(Established under Karnataka Act No. 16 of 2013)

Department of Computer Science & Engineering

Statistics for Data Science

Assignment – Bernoulli Distribution

1. A certain brand of dinnerware set comes in three colors: red, white, and blue. Twenty percent of customers order the red set, 45% order the white, and 35% order the blue. Let X = 1 if a randomly chosen order is for a red set, let X = 0 otherwise; let Y = 1 if the order is for a white set, let Y = 0 otherwise; let Z = 1 if it is for either a red or white set, and let Z = 0 otherwise.

   a. Let p_X denote the success probability for X. Find p_X.
   b. Let p_Y denote the success probability for Y . Find p_Y .
   c. Let p_Z denote the success probability for Z. Find p_Z.
   d. Is it possible for both X and Y to equal 1?
   e. Does $p_Z = p_X + p_Y$?
   f. Does Z = X + Y? Explain.