**Q1.** a. Suppose there are 9 rules in a **fuzzy expert system**, out of which 3 rules fire for a certain set of input conditions. The output parameter Y has the following membership values for these 3 rules:

Y’ = 0/100, 0.25/200, 0.5/300, 0.75/400, 1/500, 0.75/600, 0.5/700, 0.25/800, 0/900, 0/1000

Y’ = 0.5/100, 0.75/200, 0.75/300, 0.75/400, 1/500, 0.75/600, 0.5/700, 0.25/800, 0/900, 0/1000

Y’ = 0/100, 0/200, 0/300, 0.75/400, 0.75/500, 0.75/600, 0.5/700, 0/800, 0/900, 0/1000

What will be the unified value of the output?

b. Find the intersection, union and complements of fuzzy sets A & B:

A = {0/10, 0.6/20, 1/30, 1/40, 0.3/50, 0.1/60, 0/70, 0/80, 0.5/90, 1/100}

B = {1/10, 0.5/20, 0/30, 0/40, 0.1/50, 0.3/60, 1/70, 1/80, 0.6/90, 0/100}