# CHEMICAL REACTION ENGINEERING – ANSWERS

**1.** 40, 0.5. 0.75

**2.** Space time = 1 min for case X, Y, Z

Holding time = 1 min (case X), ≈ 2 sec (case Y), somewhere b/w 2 and 60 sec (case X) depending on the kinetics

**3.** 6 liter/min

**4.** 0.6, 350 L

**5.** conversion is same in both the cases, as $\tau$ remains the same

**6.** 3.228 $m^3$

**7.** 33.2 sec

**8.** 17 L

**9.** 0.00793 mol/L, 70.7%

10. The actual conversion was more as blades make two equal volume zones of 500 gallon each rather than one entire mixing zone of 1000 gallon