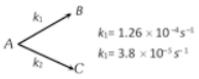
➡ A Substance undergoes first order decomposition. The decomposition follows two parallel first order reactions as 

The percentage distribution of B and C are [Kerala PMT 2004]

A) 75% B and 25% C

B) 80% B and 20% C

C) 60% B and 40% C

D) 90% B and 10% C

E) 76.83% B and 23.17% C

Correct Answer: E

Solution :

$$\% \text{ distribution of } B = \frac{K_1}{K_1 + K_2} \times 100 = \frac{1.26 \times 10^{-4}}{1.26 \times 10^{-4} + 3.8 \times 10^{-4}} \times 100 \quad B$$

$$= \frac{3.8 \times 10^{-4}}{1.26 \times 10^{-4} + 3.8 \times 10^{-4}} \times 100 \quad C$$