

# CHEMISTRY

11. (4)

Order of reaction is an experimental value, while molecularity is a theoretical value.

12. (2)

$$r = k(C_A)^{\frac{3}{2}}(C_B)^{-\frac{1}{2}}$$

$$\text{Order} = \frac{3}{2} + \left(-\frac{1}{2}\right) = \frac{2}{2} = 1$$

13. (1)

The rate will be given by slowest step. Thus,

$$r = K[A][B_2] \cdot K_c = \frac{[A][A]}{[A_2]}$$

$$\text{or } [A] = [K_c]^{1/2}[A_2]^{1/2}$$

$$r = K \times [K_c]^{1/2}[A_2]^{1/2}[B_2] = K[A_2]^{1/2}[B]$$

Thus order is  $0.5 + 1 = 1.5$

14. (4)

$$t_{1/2} = \frac{1}{K[R_0]} \text{ for second order reactions.}$$

15. (3)

In photochemical reactions the rate of reaction is independent of the concentration of reacting species.

16. (3)

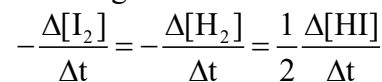
17. (1)

A graph plotted between  $\log k$  vs  $\frac{1}{T}$  for

calculating activation energy.

18. (1)

For the given reaction:



19. (4)

$$\% \text{ distribution of B} = \frac{K_1}{K_1 + K_2} \times 100$$

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

$$B\% = 76.83\%$$

$$\% \text{ Distribution of C} = \frac{K_2}{K_1 + K_2} \times 100$$

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

$$C\% = 23.17\%$$

20. (2)