1. For a reaction the initial rate is given as : $R_0 = k[A]_0^2[B]_0$ by what factor, the initial rate of reaction will increase if initial concentration of A is taken 1.5 times and of B is tripled?
   A) 4.5 B) 2.25
   C) 6.75
   D) None of these
2. For $A_{(g)} + B_{(g)} \rightarrow C_{(g)}$; rate = $k[A]^{1/2}[B]^2$, if initial concentration of A and B are increased by factor of 4 and 2 respectively, then the initial rate is changed by the factor
   A) 4 B) 6
   C) 8
   D) None of these
3. Which of the following rate law has an overall order of 0.5 for reaction involving substances x,y and z?
   A) Rate = $K (C_x) (C_y) (C_z)$
   B) Rate = $K (C_x)^{0.5} (C_y)^{0.5} (C_z)^{0.5}$
   C) Rate = $K (C_x)^{1.5} (C_y)^{-1} (C_z)^0$
   D) Rate = $K (C_x) (C_z)^o / (C_y)^2$
4. For the reaction $H_2(g) + Br_2(g) \rightarrow 2HBr(g)$, the experimental data suggests, Rate = $K [H_2] [Br_2]^{1/2}$. The order for this reaction is –
   A) 2 B) $1\frac{1}{2}$
   C) 1 D) $2\frac{1}{2}$
5. The rate law for the single step reaction $2A + B \rightarrow 2C$, is given by –
   A) Rate = K[A][B]
   B) Rate = $K[A]^2[B]$
   C) Rate = K[2A][B]
   D) Rate = $K[A]^2[B]$
6. For an elementary process $2X + Y \rightarrow Z + W$, the molecularity is –
   A) 2 B) 1
   C) 3
   D) Unpredictable
7. For the reaction $A + B \rightarrow$ products, it is found that the order of A is 1 and the order of B is 1/2. When the conc. Of both A and B are increased four times, the rate will increase by a factor of :-
   A) 16 B) 8
   C) 6 D) 4
8. The rate law for a reaction $A + B \rightarrow$ product is rate = $K[A]^1[B]^2$. Then which one of the following statement is false:-
   A) If [B] is held constant while [A] is doubled, the reaction will proceedtwice as fast
   B) If [A] is held constant while [B] is reduced to one quarter, the rate willbe halved
   C) If [A] and [B] are both doubled, the reaction will proceed 8 times as fast
   D) This is a third order reaction
9. Following mechanism has been proposed for a reaction $2A + B \rightarrow D + E$
   $A + B \rightarrow C + D$ .....(slow)
   $A + C \rightarrow E$.....(fast)
   The rate law expression for the reaction is –
   A) $r = K[A]^2 [B]$ B) $r = K[A] [B]$
   C) $r = K[A]^2$ D) $r = K[A][C]$
10. Units of specific reaction rate for second order reactions:
    A) s^{-1} B) mol L^{-1} s^{-1}
    C) L mol^{-2} s^{-1} D) L mol^{-1} s^{-1}
11. The rate law for the reaction, $xA + yB \rightarrow mP \rightarrow nQ$ is rate = $k [A]^c [B]^d$ what is the total order of the reaction?
    A) x + y B) m + n
    C) c + d D) Two
12. Units of rate constant of first and zeroorder reaction in terms of molarity M are respectively:
    A) s^{-1}, Ms^{-1} B) s^{-1}, M
    C) Ms^{-1}, s^{-1}, D) M, s^{-1},
13. For a reaction $A + 2B \longrightarrow C$, rate is givenby $R = K [A] [B]^2$. The order of reaction is:
    A) 3 B) 6
    C) 5 D) 7
14. Trimolecular reactions are uncommonbecause
    A) The probability of three moleculescolliding at an instant is low
    B) The probability of three moleculescolliding at an instant is high

C) The probability of three moleculescolliding at an instant is zero

D) The probability of many moleculescolliding at an instant is high

15. For a reaction $A \rightarrow B$, the rate of reaction quadrupled when the concentration of A is doubled. The rate expression of the reaction is $r = K[A]^n$ when the value of n is

A) 1 B) 0

C) 3 D) 2

16. For the reaction $H_2 + Br_2 \rightarrow 2$ HBr overall order is found to be 3/2. The rate of reaction can be expressed as:

A) $[H_2][Br_2]^{1/2}$ B) $[H_2]^{1/2}[Br_2]$

C) $[H_2]^{3/2}[Br_2]^0$ D) All of these