

Le-Chaterlier principle and It's application

41. In $N_2 + 3H_2 \rightleftharpoons 2NH_3$ reversible reaction, increase in pressure will favour

- (a) Reaction in forward direction
- (b) Reaction in reverse direction
- (c) Will not exert any effect
- (d) In backward and forward direction equally

42. In the reaction $N_2 + 3H_2 \rightarrow 2NH_3$, the product increases on

- (a) Increasing temperature
- (b) Increasing pressure
- (c) Increasing temperature and pressure both
- (d) Decreasing temperature and pressure both
- (e) None of these

43. In which of the following system, doubling the volume of the container cause a shift to the right

- (a) $H_2(g) + Cl_2(g) = 2HCl(g)$
- (b) $2CO(g) + O_2(g) = 2CO_2(g)$
- (c) $N_2(g) + 3H_2(g) = 2NH_3(g)$
- (d) $PCl_5(g) \rightleftharpoons PCl_3(g) + Cl_2(g)$

44. Which of the following information can be obtained on the basis of Le-chatelier's principle

- (a) Entropy change in a reaction
- (b) Dissociation constant of a weak acid
- (c) Equilibrium constant of a chemical reaction
- (d) Shift in equilibrium position on changing value of a constant

45. The equilibrium $2SO_{2(g)} + O_{2(g)} \rightleftharpoons 2SO_{3(g)}$ shifts forward, if

- (a) A catalyst is used
- (b) An adsorbent is used to remove SO_3 as soon as it is formed
- (c) Low pressure
- (d) Small amounts of reactants are used

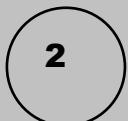
46. The equilibrium $SO_2Cl_{2(g)} \rightleftharpoons SO_{2(g)} + Cl_{2(g)}$ is attained at $25^\circ C$ in a closed container and an inert gas helium is introduced which of the following statement is correct

- (a) More chlorine is formed
- (b) Concentration of SO_2 is reduced
- (c) More SO_2Cl_2 is formed
- (d) Concentration of SO_2Cl_2, SO_2 and Cl_2 does not change

47. Which of the following equilibria will shift to right side on increasing the temperature

- (a) $CO_{(g)} + H_2O_{(g)} \rightleftharpoons CO_{2(g)} + H_2_{(g)}$
- (b) $2SO_{2(g)} + O_{2(g)} \rightleftharpoons 2SO_{3(g)}$
- (c) $H_2O_{(g)} \rightleftharpoons H_{2(g)} + \frac{1}{2}(O_2)_{(g)}$





54. In which of the following equilibrium systems is the rate of the backward reaction favoured by increase of pressure
- $PCl_5 \rightleftharpoons PCl_3 + Cl_2$
 - $2SO_2 + O_2 \rightleftharpoons 2SO_3$
 - $N_2 + 3H_2 \rightleftharpoons 2NH_3$
 - $N_2 + O_2 \rightleftharpoons 2NO$
55. Which of the following equilibrium is not shifted by increase in the pressure
- $H_2(g) + I_2(g) \rightleftharpoons 2HI(g)$
 - $N_2(g) + 3H_2(g) \rightleftharpoons 2NH_3(g)$
 - $2CO(g) + O_2(g) \rightleftharpoons 2CO_2(g)$
 - $2C(s) + O_2(g) \rightleftharpoons 2CO(g)$
56. According to Le-Chatelier's principle adding heat to a solid and liquid in equilibrium with endothermic nature will cause the
- Temperature to rise
 - Temperature to fall
 - Amount of solid to decrease
 - Amount of liquid to decrease
57. On addition of an inert gas at constant volume to the reaction $N_2 + 3H_2 \rightleftharpoons 2NH_3$ at equilibrium
- The reaction remains unaffected
 - Forward reaction is favoured
 - The reaction halts
 - Backward reaction is favoured
58. Le-Chatelier principle is not applicable to
- $H_2(g) + I_2(g) \rightleftharpoons 2HI(g)$
 - $Fe(s) + S(s) \rightleftharpoons FeS(s)$
 - $N_2(g) + 3H_2(g) \rightleftharpoons 2NH_3(g)$
 - $N_2(g) + O_2(g) \rightleftharpoons 2NO(g)$
59. For the reaction: $A + B + Q \rightleftharpoons C + D$, if the temperature is increased, then concentration of the products will
- Increase
 - Decrease
 - Remain same
 - Become Zero
60. $H_2(g) + I_2(g) \rightleftharpoons 2HI(g)$
- In this reaction when pressure increases, the reaction direction
- Does not change
 - Forward
 - Backward
 - Decrease

