Le-Chaterlier principle and It's application

61. The rate of reaction of which of the following is not affected by pressure

(a) $PCl_3 + Cl_2 \rightleftharpoons PCl_5$

(b) $N_2 + 3H_2 \rightleftharpoons 2NH_3$

(c) $N_2 + O_2 \rightleftharpoons 2NO$

(d) $2SO_2 + O_2 \rightleftharpoons 2SO_3$

62. In the equilibrium $N_2 + 3H_2 \rightleftharpoons 2NH_3 + 22$ *kcal*, the formation of ammonia is favoured by

(a) Increasing the pressure

(b) Increasing the temperature

(c) Decreasing the pressure

(d) Adding ammonia

63. The reaction $2SO_2 + O_2 \rightleftharpoons 2SO_3$; ΔH = – *ve* is favoured by

(a) Low temperature, low pressure

(b) Low temperature, high pressure

(c) High temperature, high pressure

(d) High temperature, low pressure

64. Which of the following will favour the reverse reaction in a chemical equilibrium

(a) Increasing the concentration of the reactants

(b) Removal of at least one of the products at regular intervals

(c) Increasing the concentration of one or more of the products

(d) Increasing the pressure

(e) None of these

65. Under what conditions of temperature and pressure the formation of atomic hydrogen from molecular hydrogen will be favoured most

(a) High temperature and high pressure

(b) Low temperature and low pressure

(c) High temperature and low pressure

(d) Low temperature and high pressure

66. The formation of nitric oxide by contact process $N_2 + O_2 \rightleftharpoons 2NO$. ΔH = 43.200 *kcal* is favoured by

(a) Low temperature and low pressure

(b) Low temperature and high pressure

(c) High temperature and high pressure

(d) High temperature and excess reactants concentration

67. The chemical reaction: $BaO_{2(S)} \rightleftharpoons BaO_{(s)} + O_{2(g)}$, ΔH = + *ve*.

In equilibrium condition, pressure of O_2 depends upon

(a) Increase mass of *BaO*

(b) Increase mass of BaO_2

(c) Increase in temperature

(d) Increase mass of BaO_2 and *BaO* both

68. The yield of product in the reaction $A_{2(g)} + 2B_{(g)} \rightleftharpoons C_{(g)} + Q.kJ.$ would be high at

(a) High temperature and high pressure

(b) High temperature and low pressure

(c) Low temperature and high pressure

(d) Low temperature and low pressure

69. Which reaction is not effected by change in pressure

(a) $H_2 + I_2 \rightleftharpoons 2HI$

(b) $2C + O_2 \rightleftharpoons 2CO$

(c) $N_2 + 3H_2 \rightleftharpoons 2NH_3$

(d) $PCl_5 \rightleftharpoons PCl_3 + Cl_2$

70. The gaseous reaction $A + B \rightleftharpoons 2C + D$; $+ Q$ is most favoured at

(a) Low temperature and high pressure

(b) High temperature and high pressure

(c) High temperature and low pressure

(d) Low temperature and low pressure

71. For a reaction if $K_p > K_c$, the forward reaction is favoured by

(a) Low pressure

(b) High pressure

(c) High temperature

(d) Low temperature

72. $A_{2(g)} + B_{2(g)} \rightleftharpoons 2AB_{(g)}$; $\Delta H = +ve$

(a) Unaffected by pressure

(b) It occurs at 1000 pressure

(c) It occurs at high temperature

(d) It occurs at high pressure and high temperature

73. Consider the reaction equilibrium, $2SO_{2(g)} + O_{2(g)} \rightleftharpoons 2SO_{3(g)}$; $\Delta H° = -198kJ$. On the basis of Le-Chatelier's principle, the condition favourable for the forward reaction is

(a) Lowering of temperature as well as pressure

(b) Increasing temperature as well as pressure

(c) Lowering the temperature and increasing the pressure

(d) Any value of temperature and pressure