K_p & K_c Relationship and Characteristics of K

61. For reaction, $2A(g) \rightleftharpoons 3C(g) + D(s)$, the value of K_c will be equal to
(a) $K_p(RT)$
(b) K_p/RT
(c) $= K_p$
(d) None of these

62. In the reaction, $A_2(g) + 4B_2(g) \rightleftharpoons 2AB_4(g)$
$\Delta H < 0$ the formation of AB_4 is will be favoured at
(a) Low temperature, high pressure
(b) High temperature, low pressure
(c) Low temperature, low pressure
(d) High temperature, high pressure

63. The formation of SO_3 takes place according to the following reaction, $2SO_2 + O_2 \rightleftharpoons 2SO_3$; $\Delta H = -45.2\ kcal$
The formation of SO_3 is favoured by
(a) Increasing in temperature
(b) Removal of oxygen
(c) Increase of volume
(d) Increasing of pressure

64. What is the effect of increasing pressure on the dissociation of PCl_5 according to the equation
$PCl_{5(g)} \rightleftharpoons PCl_{3(g)} + Cl_{2(g)} - x\ cal$
(a) Dissociation decreases
(b) Dissociation increases
(c) Dissociation does not change
(d) None of these

65. If equilibrium constants of reaction, $N_2 + O_2 \rightleftharpoons 2NO$ is K_1 and $\frac{1}{2}N_2 + \frac{1}{2}O_2 \rightleftharpoons NO$ is K_2, then
(a) $K_1 = K_2$ (b) $K_2 = \sqrt{K_1}$
(c) $K_1 = 2K_2$ (d) $K_1 = \frac{1}{2}K_2$

66. For the following reaction in gaseous phase $CO + \frac{1}{2}O_2 \rightarrow CO_2$; K_p/K_c is
(a) $(RT)^{1/2}$ (b) $(RT)^{-1/2}$
(c) (RT) (d) $(RT)^{-1}$

67. For the reaction $N_{2(g)} + O_{2(g)} \rightleftharpoons 2NO_{(g)}$, the value of K_c at 800^oC is 0.1. When the equilibrium concentrations of both the reactants is 0.5 mol, what is the value of K_p at the same temperature
(a) 0.5 (b) 0.1
(c) 0.01 (d) 0.025

68. $A_{(g)} + 3B_{(g)} \rightleftharpoons 4C_{(g)}$. Starting concentration of A is equal to B,

equilibrium concentration of A and C are same. $K_c =$

(a) 0.08 (b) 0.8

(c) 8 (d) 80

(e) 1/8

69. $NH_4COONH_{2(s)} \rightleftharpoons 2NH_{3(g)} + CO_{2(g)}$ if equilibrium pressure is 3 atm for the above reaction K_p for the reaction is

(a) 4 (b) 27

(c) 4/27 (d) 1/27