Model Question paper

Chemical Equilibrium - I 2

11th Standard

Chemistry

Reg.No. : | | | | | | |

I. Answer all the questions.

II. Use blue pen only.

Time : 00:45:00 Hrs

Total Marks : 30

Part - A

3 x 1 = 3

1) For endothermic equilibrium, increase in temperature changes the K_{eq} value as

   (a) No change (b) Increases (c) Decreases

2) In the heterogeneous equilibrium $CaCO_{3(s)} \rightleftharpoons CaO_{(s)} + CO_{2(g)}$ the K_{eq} value is given by

   (a) partial pressure of CO_2 (b) activity CaO (c) activities of $CaCO_3$ (d) $[CaO]/[CaCO_3]$

3) For the equilibrium reaction $H_2(g)+I_2(g) \rightleftharpoons 2HI_{(g)}$

   (a) Kp=Kc (b) Kp>Kc (c) Kp<Kc (d) Kp=1/Kc

Part -

3 x 2 = 6

4) Define law of mass action

5) Write the K_p expression for $PCl_{5(g)} \rightleftharpoons PCl_{3(g)} + Cl_{2(g)}$

6) Relate K_p and K_c when $\triangle$n=0, $\triangle$n=1;$\triangle$n=2.0

Part - C

2 x 3 = 6

7) Give an example of irreversible reaction

8) Reason out why equilibrium concentrations remain constant.

Part - D

3 x 5 = 15

9) Explain the characteristics of a chemical equilibrium.

10) Two moles of H_2 and three moles of I_2 are taken in 2 dm^3 vessels and heated. If the equilibrium mixture contains 0.8 moles of HI, calculate K_p and K_c for the reaction $H_{2(g)} + I_{2(g)} \rightleftharpoons 2HI_{(g)}$

11) At 25°C. K_c for the reaction $3C_2H_{2(g)} + \rightleftharpoons C_6H_{6(g)}$ is 4.0.If the equilibrium concentration of C_2H_2 is 0.5 mol. lit^{-1}. What is the concentration of C_6H_6?

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