

J.E.E./A.I.P.M.T.Foundation - XI Chemistry Worksheet

Time: 30 min

Ch#7 : Equilibrium -03

Full Marks: 20

Instructions:

1. All questions are compulsory.
2. Please give the explanation for the answer where applicable.

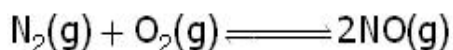
Q1 -Define Lewis Acids and Bases.

(1 Mark)

Q2 -What is a Common Ion Effect?

(2 Marks)

Q3 - At equilibrium, the concentrations of  $N_2=0.0032$  M,  $O_2= 0.0043$  M and  $NO =0.0026$  M in a sealed vessel at 800K. What will be  $K_c$  for the reaction?



(2 Marks)

Q4 -12.8 gm of  $N_2O_4$  was placed in a 1L reaction vessel at 400 K and allowed to attain equilibrium

The total pressure at equilibrium was found to be 8.29 bar calculate  $K_p$ ,  $K_c$  and partial pressure at equilibrium?

(5 Marks)

Q5 -Hydrolysis of sucrose gives,



Equilibrium constant,  $K_c$  for the reaction is  $3 \times 10^{11}$  at 300 K. Calculate  $\Delta G$  at 300 K

(2 Marks)

Q6 -Write conjugate acid of  $NH_3$ .

(1 Mark)

Q7 -Write conjugate acid of  $HCOO^-$ .

(1 Mark)

Q8 -Write conjugate base of  $HClO_4$ .

(1 Mark)

Q9 - The ionization constant of HF is  $3.4 \times 10^{-4}$ . Calculate the degree of dissociation of HF in its 0.02 M solution?

(3 Marks)

Q10 - Calculate the solubility of AX in pure water. The solubility product of AX is  $2.5 \times 10^{-20}$ .

(2 Marks)