Answer on Question #66942 - Chemistry - Physical Chemistry

Question:

Question 8 : The magnitude of Kw indicates that _____.
water autoionizes very quickly
the autoionization of water is exothermic
water autoionizes very slowly
water autoionizes only to a very small extent

Question 9 : For the following reaction, which of the following is a conjugate acid-base pair?
HC2O4−(aq) + H2O(l) → H3O(aq) + C2O42−(aq)
H2O and C2O42−
HC2O4− and H3O+
HC2O4− and C2O42−
HC2O4− and H2O

Question 10 : What's the concentration of Ag+ ion in a saturated silver chloride solution?
Ksp= 1.56 x10−10.
none of these
0.000339 M
0.0000125 M
4.90 M

Question 11 : A substance that is capable of acting as both an acid and as a base is _____.
conjugated
Amphoteric
Diprotic
Binary acid-base

Solution:

Question 8: Autoionizes water only in very small extent, because it has low avtoionizatsiyi, Kw = $1{,}0 \times 10^{-14}$ at room temperature. So the correct answer: water autoionizes only to a very small extent.

Question 9: According to the theory Brønsted-Lowry each pair of particles that are transformed into one another by joining (splitting) off of the proton forms a conjugate acid and base, as described above with suitable answers only: H_3O^+ and $C_2O_4^{2-}$. So the correct answer: H_3O^+ and $C_2O_4^{2-}$.

Question 10: $K_{sp} = [Ag^+] \cdot [Cl^-] = [Ag^+]^2$

$[Ag^+] = \sqrt{K_{sp}} = \sqrt{1.56 \cdot 10^{-10}} = 0.0000125\ M$

So the correct answer: 0.0000125 M.

Question 11: Amphotery - the ability of the compounds exhibit acidic and basic properties. So the correct answer: Amphoteric.

Answer: Question 8: water autoionizes only to a very small extent;

Question 9: H_3O^+ and $C_2O_4^{2-}$;

Question 10: 0.0000125 M;

Question 11: Amphoteric.