Answer on Question #66487 - Chemistry - Physical Chemistry

Question:

Question 1 : The reactions with the high value of energy of activation are
Slow
Fast
Not feasible
Moderate

Question 2 : In general, the rate of a reaction can be increased by all the factors except
Using a catalyst
Increasing the activation energy
Increasing the concentration of reactants
Increasing the temperature

Question 3 : For the following system at equilibrium, what will cause the partial pressure of HF to increase?
$UO_2(s)+4HF(g)\rightarrow UF_4(g)+2H_2O(g)$
decreasing the pressure
adding $UF_4(g)$
adding $UO_2(s)$
removing $H_2O(g)$

Solution:

Question 1: Each reaction is characteristic activation energy. At this temperature, the reaction with a low activation energy will be faster than reactions with high activation energy. This can easily be determined from the Arrhenius equation. So the correct answer: slow.

Question 2: The main methods of increasing the reaction rate is to increase the temperature, concentration change, the introduction of the catalyst. So the correct answer: increasing the activation energy.

Question 3: $K = \frac{p(UF_4)\cdot p^2(H_2O)}{p^4(HF)}$;

$p^4(HF) = \frac{p(UF_4)\cdot p^2(H_2O)}{K}$;

It follows that if you add in $UF_4(g)$, the increase and the number of HF(g). So the correct answer: adding $UF_4(g)$.

Answer: Question 1: slow;

Question 2: increasing the activation energy;

Question 3: adding $UF_4(g)$.