

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

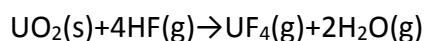
Using a catalyst

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?



decreasing the pressure

adding $\text{UF}_4(\text{g})$

adding $\text{UO}_2(\text{s})$

removing $\text{H}_2\text{O}(\text{g})$

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.

$$\text{Question 3: } K = \frac{p(\text{UF}_4) \cdot p^2(\text{H}_2\text{O})}{p^4(\text{HF})};$$

$$p^4(\text{HF}) = \frac{p(\text{UF}_4) \cdot p^2(\text{H}_2\text{O})}{K};$$

It follows that if you add in $\text{UF}_4(\text{g})$, the increase and the number of $\text{HF}(\text{g})$. So the correct answer: adding $\text{UF}_4(\text{g})$.

Answer: Question 1: slow;

Question 2: increasing the activation energy;

Question 3: adding $\text{UF}_4(\text{g})$.