

such type of eq<sup>m</sup> shifts are also expected if we change the pressure, temperature, or add an inert gas. However, addition or removal or changing concentration of solid reactant and product doesn't have any effect on eq<sup>m</sup> state.

for example, in the reaction  $\text{BeCO}_3(\text{s}) \rightleftharpoons \text{BeO}(\text{s}) + \text{CO}_2$ , addition of ~~the~~ some extra  $\text{BeCO}_3$  [will] have no effect.

Now Answer the following questions based on your reading of above passage;

① Consider the eq<sup>m</sup>.  $\text{CaCO}_3(\text{s}) \rightleftharpoons \text{CaO}(\text{s}) + \text{CO}_2(\text{g})$ .

If we add a very large piece of  $\text{CaCO}_3(\text{s})$  in the closed vessel (in which rx<sup>n</sup> is occurring), the the equilibrium will

- a) remain as it is
- b) shift rightward
- c) shift leftward
- d) can't predict

② consider the rx<sup>n</sup>.  ${}_{92}^{238}\text{U} \rightarrow {}_{82}^{206}\text{X} + 8 {}_2^4\text{He} + \bar{e}$ .

if we increase

the conc. of He gas by adding it ~~externally~~ externally, then the reaction will proceed

(a) faster and more towards right

(b) slower ~~and~~ ~~more~~ but towards right

(c) immediately left

(d) No where and remain same.

Sol.

① The very large piece of  $\text{CaCO}_3(\text{s})$  basically reduces the volume of the container. So, it is same as decreasing volume. So, the reaction shifts to the side with less number of gaseous moles. i.e., shift leftward  $\Rightarrow$  (c) option  
[ $\therefore$  Note how the question is tricking you by first teaching a concept and then intentionally asking the exceptional case of the concept]

② Nuclear reactions aren't affected by physical conditions. So, option (d) is correct.