

Home Assignment-1 (CHM-646A)

1. Why, mainly, Zn is the nature's choice in hydrolytic metalloenzymes instead of so many other elements in the earth?
2. What chemical properties of Fe and Cu make them suitable for redox processes in biological system?
3. What do you mean by Entatic State? What experimental evidences are there for this concept?
4. How you explain the many fold increase in electron transfer rate in case of Blue Copper Proteins compared to the similar complexes in laboratory.
5. Why O₂ does not react with organic substrates? When it reacts then? Why O₂ need to be activated in biology?
6. Why nature has chosen cobalt in the active site of vitamin B₁₂, although there are so many other metal ions available in the nature?
7. Write a reaction that is catalyzed by *vitamin B₁₂* and propose a mechanism for such reaction. What are the advantages of using *vitamin B₁₂*?