

Tutorial Questions-3

1. Why, mainly, Zn is the nature's choice in hydrolytic metalloenzymes instead of so many other elements in the earth?
2. Why nature has chosen cobalt in the active site of vitamin B₁₂, although there are so many other metal ions available in the nature?
3. Write a reaction that is catalyzed by *vitamin B₁₂* and propose a mechanism for such reaction. What are the advantages of using *vitamin B₁₂*?
4. What do you mean by Entatic State? What experimental evidences are there for this concept?
5. How you explain the many fold increase in electron transfer rate in case of Blue Copper Proteins compared to the similar complexes in laboratory.
6. Name the enzyme that your body produces to protect any 'bruise' if you have. What that enzyme does to protect such 'bruise'?
7. Peroxidase, catalase and cytochrome-P450 all produce Fe(IV)=O as an important intermediate during the reaction with the substrates. This being the case, why are they so different in their biological activities?
8. Draw the molecular structure of a widely used 'MRI Contrast Agent'.
9. Name and draw the structure of sugar present in DNA
10. Write down three important requirements of a compound to be used as an effective anti-cancer drug.