

1. Name the following compounds. (20%)
(1) KH_2PO_4 , (2) SnCl_2 , (3) SF_4 , (4) NaClO_4 , (5) SiCl_4 ,
(6) $\text{K}_4\text{Fe}(\text{CN})_6$, (7) $\text{Pt}(\text{NH}_3)_2\text{Cl}_2$, (8) $\text{Cu}(\text{NH}_3)_4^{2+}$,
(9) $\text{Mn}(\text{H}_2\text{O})_6^{2+}$, (10) $\text{Ni}(\text{CO})_4$.
2. Calculate the number of moles of H_2O molecules in 1.000 liter of water at 0°C if the density of water at this temperature is 0.9998 g/cm^3 . (20%)
3. Describe what happens during the chain-initiation, chain-propagation, and chain-termination steps in the anionic polymerization of vinyl chloride when methyl-lithium is used as the chain initiator, write the Lewis structure of all intermediates. (20%)
4. Describe how the primary, secondary, tertiary, and quaternary structures of a protein differ. (20%)
5. Draw the structure of one of the nucleotides found in nucleic acids. Show how the structures of the monomers that form DNA differ from those of the monomers that form RNA. (20%)