

**Department of Chemistry, IIT Kharagpur**  
**Inorganic Chemistry**

**Tutorial 2**

1. Why noble gases are monoatomic? Explain with example of Neon gas.
  2. Draw the molecular orbital diagram of dioxygen and predict magnetic character of it. Find bond order and spin only magnetic moment of (a)  $\text{O}_2^+$ ,  $\text{O}_2^-$ ,  $\text{O}_2^{2-}$
  3. Why  $\text{B}_2$  is paramagnetic and  $\text{C}_2$  is diamagnetic? –Explain with MO electronic distribution.
  4. What is electron sea model in metallic bonds?
  5. (a) Explain the reason for the electrical conductivity by metals. (b) What is the characteristic feature of band gap in metals?
  6. Which MO energy level diagram is to be followed for  $\text{B}_2$  and  $\text{C}_2$  molecules and why?
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