

CHEMISTRY

- As per the Bohr's model, the minimum energy (in eV) required to remove an electron from the ground state of doubly ionized Li atom ($Z = 3$) is
A) 1.51 B) 13.6 C) 40.8 D) 122.4
- The hybridization of **Xe** in **XeF₄** is
A) sp^3d B) dsp^2 C) sp^3d^2 D) sp^2d^3
- The X-ray beam coming from an X-ray tube will be
A) monochromatic
B) having all wavelengths smaller than a certain maximum wavelength
C) having all wavelengths larger than a certain minimum wavelength
D) having all wavelengths lying between a minimum and a maximum wavelength
- Which one of the following causes increase in entropy?
A) A liquid crystallizes into a solid
B) Water vapor condensation into liquid
C) Decomposition of $NaHCO_3$ at $102^\circ C$
D) Diffusion of two similar gas mixture into each other in a closed container isolated from the surroundings
- The reaction that takes place at anode is
A) ionization B) reduction C) oxidation D) hydrolysis
- Which of the following statement(s) is/are correct about *trans*-1,2-dimethylcyclohexane?
I. Two methyl groups can exist in diaxial orientation.
II. Two methyl groups can exist in axial-equatorial or equatorial-axial orientation.
III. Two methyl groups can exist in diequatorial orientation.
A) I only B) II only C) I and II only D) I and III only
- Find the correct order of their boiling points of the following alcohols:
methanol, *n*-propyl alcohol, *iso*-propyl alcohol
A) methanol < *n*-propyl alcohol < *iso*-propyl alcohol
B) methanol > *n*-propyl alcohol > *iso*-propyl alcohol
C) methanol < *iso*-propyl alcohol < *n*-propyl alcohol
D) methanol > *iso*-propyl alcohol > *n*-propyl alcohol
- Reaction of _____ with Grignard reagent followed by hydrolysis yields ketone.
A) esters B) aldehyde C) alkyl nitrile D) acid chloride
- Benzoic acid can be prepared from toluene by treatment with
A) $KMnO_4$ -KOH B) Grignard reagent in ether followed by dry ice and acid hydrolysis
C) Tollens' reagent D) HBr/KCN followed by acid hydrolysis
- The number of amino acid units present in insulin is
A) 42 B) 51 C) 8 D) 32