

ISC Class 11 Chemistry Important Questions

- For a molecule $N_b = N_a$ will the molecule be stable? Explain why.
 - What type of bond is formed when two p-orbitals overlap sidewise?
- Which alkyne on reductive ozonolysis will produce glyoxal only?
 - Which gas is produced on dehydrohalogenation of ethyl iodide?
- At what temperature is the entropy of a perfectly crystalline substance taken as zero?
 - Predict the sign of ΔG for a reaction that is exothermic and accompanied by an increase in entropy.
- Why are alkali metals used as reducing agents?
 - Name the alkaline earth metal which shows diagonal relationship with aluminium.
- In the Carius method of estimation of halogens, 0.250g of an organic compound gives 0.141g of AgBr. Calculate the percentage of bromine in the compound. (at.wt. of Ag = 108, Br = 80).
- In the Carius determination 0.234 g of an organic compound gave 0.334 g of Barium Sulphate. Calculate the percentage of Sulphur in the given compound. (at.wt. of Ba=137, S = 32, O = 16)
- A dry gas measuring 280 ml at 305 K and 750 mm of Hg, weighs 0.344 g. Calculate the molecular weight of the gas.
- Write the structural formula of the compounds having the following IUPAC names.
 - 5 – methyl hept – 3 – enal
 - 3 – hydroxy 6, 6 dimethyl hept – 4 – ene – 1 – oic acid.
- The first ionisation enthalpy of nitrogen ($Z = 7$) is greater than that of oxygen ($Z = 8$) but the reverse is true for the second ionisation enthalpy. Explain why.
- Which alkene on reductive ozonolysis gives only:
 - Ethanal
 - Propanone
- How will you convert the following:
 - Ethyl alcohol to ethene

- b) Propene to 2 - bromopropane.
12. Discuss the structure of diamond and graphite and explain the hardness of these allotropes on the basis of their structures.
13. In a Victor Meyer's determination, 0.36g of volatile substance displaces air which measures 140 ml at STP. Calculate the vapor density and molecular weight of the substance. (1 litre of H₂ gas at STP weights 0.09g)
14. How will you convert the following? (Give balanced equation.)
- Sodium acetate to methane
 - Ethane to butane
 - Benzene to toluene.
15. 750 ml of N₂ gas when taken in a vessel has pressure equal to 900 mm of Hg, 1200 ml of O₂ gas when taken in another vessel has pressure equal to 1450 mm of Hg. If both the gases are taken in 1000 ml vessel, what will be the total pressure exerted by the mixture of above gases? Assume that the gases are non-reacting.
16. Define heat of neutralization.
17. What is the criteria for spontaneity in terms of free energy change?
18. Write the molecular orbital configuration of N₂. Calculate the bond order and predict its magnetic behavior.
19. Explain why:
- The colour of Baeyer's reagent gets discharged when treated with an alkene.
 - Alkanes and alkynes do not give geometrical isomerism.
20. Calculate the pH value of 0.01M CH₃COOH if it is 5% dissociated

