

## CBSE Class 12th Chemistry Most Repeated Questions 2025 for Board Exam

**Question 1. What type of semiconductor is obtained when silicon is doped with arsenic?**

**Answer:**

n-type semiconductor.

**Question 2. What is meant by 'reverse osmosis'?**

**Answer:** If a pressure higher than the osmotic pressure is applied on the solution, the solvent will flow from the solution into the pure solvent through semipermeable membrane. This process is called reverse osmosis (R.O.).

**Question 3. What are isotonic solutions?**

**Answer:** An isotonic solution is a kind of solution with the same salt concentration as blood and cells. Those solutions which are exerting same osmotic pressure under similar conditions (For example 0.9% NaCl solution by mass volume is Isotonic with human blood).

**Question 4. What is the effect of catalyst on:**

**(i) Gibbs energy ( $\Delta G$ ) and**

**(ii) activation energy of a reaction?**

**Answer:**

(i) There will be no effect of catalyst on Gibbs energy.

(ii) The catalyst provides an alternative pathway by decreasing the activation energy of a reaction.

**Question 5. What is the effect of adding a catalyst on**

**(a) Activation energy ( $E_a$ ), and**

**(b) Gibbs energy ( $\Delta G$ ) of a reaction?**

**Answer:**

(a) On adding catalyst in a reaction, the activation energy reduces and rate of reaction is fastened.

(b) A catalyst does not alter Gibbs energy ( $\Delta G$ ) of a reaction.

**Question 6. If the rate constant of a reaction is  $k = 3 \times 10^{-4} \text{ s}^{-1}$ , then identify the order of the reaction.**

**Answer:**

$\text{s}^{-1}$  is the unit for rate constant of first order reaction.

**Question 7. Write the unit of rate constant for a zero order reaction.**

**Answer:**  $\text{Mol L}^{-1} \text{S}^{-1}$  is unit of rate constant for a zero order reaction.

**Question 8.** Define rate of reaction. (Comptt. Delhi 2016)

**Answer:** The change in concentration of reactant or product per unit time is called rate of reaction.

**Question 9.** What is meant by 'lanthanoid contraction'?

**Answer:** The steady decrease in the ionic radius from  $\text{La}^{3+}$  to  $\text{Lu}^{3+}$  is termed as lanthanoid contraction.

**Question 10.** Why do transition elements show variable oxidation states?

**Answer:** The variability of oxidation state of transition elements is due to incompletely filled d-orbitals and presence of unpaired electrons, i.e. (ns) and (n -1) d electrons have approximate equal energies.

**Question 11.** Write the formula of an oxo-anion of Manganese (Mn) in which it shows the oxidation state equal to its group number.

**Answer:** Permanganate ion, i.e.,  $\text{MnO}_4^-$  with oxidation number +7.

**Question 12.** Give a chemical test to distinguish between  $\text{C}_2\text{H}_5\text{Br}$  and  $\text{C}_6\text{H}_5\text{Br}$ .

**Answer:** Both are heated with aqueous NaOH.  $\text{C}_2\text{H}_5\text{Br}$  gives ethanol and NaBr, which on reacting with  $\text{AgNO}_3$ , gives yellow precipitate of AgBr.  $\text{C}_6\text{H}_5\text{Br}$  does not respond to this test.

**Question 13.** Arrange the following in increasing order of boiling point:

- (i)  $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{Br}$
- (ii)  $(\text{CH}_3)_3\text{C}.\text{Br}$
- (iii)  $(\text{CH}_3)_2\text{C}.\text{Br}$

**Answer:**  $(\text{CH}_3)_2\text{C}.\text{Br} < (\text{CH}_3)_3\text{C}.\text{Br} < \text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{Br}$

**Question 14.** Draw the structure of hex-1-en-3-ol compound.

**Answer:**  $\text{CH}_2 = \text{CH} - \text{CH}(\text{OH}) - \text{CH}_2 - \text{CH}_2 - \text{CH}_3$

**Question 15.** Ortho nitrophenol has lower boiling point than p-nitrophenol. Why ?

**Answer:** Ortho-nitrophenol has lower boiling point due to formation of intramolecular H-bonding whereas p-nitrophenol forms intermolecular H-bonding.

**Question 16.** Ortho-nitrophenol is more acidic than ortho-methoxyphenol. Why?

**Answer:**  $\text{NO}_2$  group is an electron withdrawing group while methoxy group is electron donating in nature. The release of  $\text{H}^+$  is easier from O-nitrophenol while it is difficult from O-methoxyphenol.

**Question 17. Write the IUPAC name of  $\text{Ph} - \text{CH} = \text{CH} - \text{CHO}$ .**

**Answer:** IUPAC name : 3-phenylprop-2-enal

**Question 18. Give a chemical test to distinguish between Benzoic acid and Phenol.**

**Answer:** Benzoic acid forms a brisk effervescence with  $\text{NaHCO}_3$  solution but phenol does not respond to this test.

**Question 19. Give a chemical test to distinguish between Ethanal and Propanal.**

**Answer:** Ethanal on heating with  $\text{I}_2$  in  $\text{NaOH}$  gives a yellow ppt of iodoform but propanal does not respond to this test.

**Question 20. Why is an alkylamine more basic than ammonia?**

**Answer:** Due to electron releasing inductive effect (+I) of alkyl group, the electron density on the nitrogen atom increases and thus, it can donate the lone pair of electrons more easily than ammonia.

**Question 21. Arrange the following compounds in an increasing order of basic strengths in their aqueous solutions :  $\text{NH}_3$ ,  $\text{CH}_3\text{NH}_2$ ,  $(\text{CH}_3)_2\text{NH}$ ,  $(\text{CH}_3)_3\text{N}$**

**Answer:** Basicity order (due to stability of ammonium cation)  
 $(\text{CH}_3)_2\text{NH} > \text{CH}_3\text{NH}_2 > (\text{CH}_3)_3\text{N} > \text{NH}_3$

**Question 22. Where does the water present in the egg go after boiling the egg?**

**Answer:** Denaturation of proteins is a process that changes the physical and biological properties of proteins without affecting the chemical composition of protein. In an egg, denaturation of protein is the coagulation of albumin present in the white of an egg. When an egg is boiled in water, the globular proteins present in it change to a rubber like insoluble mass which absorbs all the water present in the egg by making hydrogen bond with it.

**Question 23. Name a water soluble vitamin which is a powerful antioxidant. Give its one natural source.**

**Answer:** Water soluble vitamin : Vitamin C  
Natural source : Amla

**Question 23. What are three types of RNA molecules which perform different functions?**

Answer:

m-RNA, t-RNA, r-RNA

**Question 24. What is a glycosidic linkage?**

Answer: The two monosaccharide units are joined together through an etheral or oxide linkage formed by loss of a molecule of water. Such a linkage between two monosaccharide units through oxygen atom is called glycosidic linkage.