

DELHI PUBLIC SCHOOL, JAMMU
ASSIGNMENT
(2018-2019)

SUBJECT: CHEMISTRY

CLASS: XII

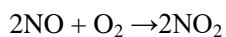
SECTION A (VERY SHORT ANSWER TYPE)

- Q.1.** Which crystal defect lowers the density of a solid?
- Q.2.** Out of BaCl_2 and KCl , which is more effective in causing coagulation of a negatively charged colloidal solution. Give reason?
- Q.3.** Write the equation for Kolbe's reaction?
- Q.4.** What do you mean Schiff's base? Give an example?
- Q.5.** Why do amines behave as nucleophiles?

SECTION B (SHORT ANSWER TYPE)

- Q.6.** State Raoult's law for a solution containing non volatile solute. What type of deviation from Raoult's law is shown by a solution of chloroform and acetone?
- Q.7.** Give reasons for the following:
- (i) Red phosphorous is less reactive than white phosphorous.
- (ii) Electron gain enthalpies of halogens are largely -ve?
- Q.8.** Write two similarities and two difference between the chemistry of lanthanoids and actinoid elements?
- Q.9.** Why is butan-1-ol optically inactive but butan-2-ol is optically active?
- Q.10.** Give reason why benzyl chloride undergoes SN_1 reaction faster than cyclohexyl methyl chloride?
- Q.11.** Silver crystallises in fcc lattice. If the edge length of the cell is $4.077 \times 10^{-8} \text{ cm}$ and density is 10.5 gm cm^{-3} , calculate the atomic mass of silver?
- Q.12.** A solution of glucose in water is labelled as 10% w/w, what would be the molality and mole fraction of each component in the solution? If the density of the solution is 1.2 g mL^{-1} , then what shall be the molarity of the solution?

Q.21. The following data were obtained for the reaction:

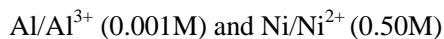


Experiment	[A]/mol L ⁻¹	[B]/mol L ⁻¹	Initial rate of formation of NO ₂ /M min ⁻¹
I	0.3	0.2	7.2 x 10 ⁻²
II	0.1	0.1	6.0 x 10 ⁻³
III	0.3	0.4	2.88 x 10 ⁻¹
IV	0.4	0.1	2.40 x 10 ⁻²

- (i) Find the order of the reaction with respect to NO and O₂.
- (ii) Write rate law and overall order of the reaction.
- (iii) Calculate the rate constant(k).

Q.22. (i) State the relationship amongst cell constant of a cell, resistance of the solution in the cell and conductivity of the solution. How is molar conductivity of a solution related to conductivity of its solution?

(ii) A voltaic cell is set up at 25° C with the following half cell;



Calculate the cell voltage. [$E^\circ_{\text{Ni}^{2+}/\text{Ni}} = -0.25\text{V}$, $E^\circ_{\text{Al}^{3+}/\text{Al}} = -1.66\text{V}$]

Q.23. (i) Give reason why Propanone is less reactive than ethanol towards nucleophilic addition reactions.

(ii) Bring out the following conversions:

- a) Acetaldehyde to but-2-enal
- b) Benzoic acid to benzaldehyde
- c) Propanone to propene.
