

DELHI PUBLIC SCHOOL, JAMMU
ASSIGNMENT FOR HALF YEARLY (2018-19)

SUB- CHEMISTRY

CLASS: XI

Very short answer type questions

Q1. Define law of definite proportions. Give examples.

Q2. What are isotones? Give examples

Q3. What do you mean by ionisation enthalpy? How does it differ from electron gain enthalpy?

Q4. Define surface tension. Give its S.I. unit and dimensions.

Q5. Define system. Explain three types of system.

Short answer questions type I

Q6. Calculate the number of atoms in the following.

(i) 52u of He

(ii) 52g of He

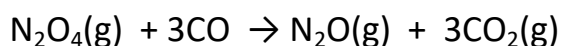
Q7. What are cathode rays? How are they produced? Describe their properties.

Q8. How does metallic and non metallic character vary on moving from left to right in a period?

Q9. Describe any three postulates of kinetic molecular theory of gases.

Q10. Enthalpies of formation of CO(g), CO₂(g), N₂O(g) and N₂O₄(g) are -110, -393, 9.7 kJ/mol respectively.

Find the value of Δ_rH for the reaction



Short answer questions type II

Q11. For a given reaction $2A(g) + B(g) \rightarrow 2D(g)$

$$\Delta U^{\circ} = -10.5 \text{ kJ} \quad \Delta S^{\circ} = -44.1 \text{ J/K}$$

Calculate ΔG° for the reaction and predict whether reaction may occur spontaneously. $R = 8.314 \text{ J K}^{-1} \text{ mol}^{-1}$, $T = 298 \text{ K}$

Q12. What are the conditions under which real gases deviate from ideal behaviour? Explain them and write down the Vanderwaals equation for it.

Q13. What is meant by hybridisation of atomic orbitals? Describe the shapes of sp , sp^2 and sp^3 .

Q14. What observations of Rutherford led to the discovery of nucleus of an atom? Explain them.

Q15. Derive an ideal gas equation and derive the relationship between density and molar mass of a substance.

Long Answer type questions

Q16. Explain the process of hybridisation for the formation of PCl_5 molecule.

Q17. Describe the liquefaction of carbon dioxide gas with the help of a well defined plot.

Q18. (i) Starting with thermodynamic relationship $G = H - TS$, derive the following relationship $\Delta G = -T\Delta S_{\text{total}}$

(ii) Explain entropy change in irreversible processes.

Q19. What are stoichiometric defects. Give its types and explain each of them.

Q20. Explain the significances of Bohr's model of atom in detail.