



B.K. BIRLA CENTRE FOR EDUCATION

SARALA BIRLA GROUP OF SCHOOLS
A CBSE DAY-CUM-BOYS' RESIDENTIAL SCHOOL



PERIODIC TEST-II 2025-26 CHEMISTRY (043)

Class: XI
Date: 07.11.25

Time: 1 hour
Max Marks: 25

Section A

1. (b) Li 2. (a) H^+ ions. 3. (c) H_2O_2 4. (c) gas 5. (c)

Section B

6. (a) CuO is reduced and H_2 is oxidised (b) Fe_2O_3 Reduced CO is oxidised
7. In the reactions given below, identify the species undergoing oxidation and reduction:
(a) H_2S oxidation Cl_2 Reduction
(b) $3Fe_3O_4$ reduction Al (s) oxidation

8. Residual charge on atom and +6

9. From the equation $q = n C \Delta T$, we can say: At constant pressure P, we have $q_P = n C_P \Delta T$. This value is equal to the change in enthalpy, that is, $q_P = n C_P \Delta T = \Delta H$. Similarly, at constant volume V, we have $q_V = n C_V \Delta T$. This value is equal to the change in internal energy, that is, $q_V = n C_V \Delta T = \Delta U$. We know that for one mole ($n=1$) of an ideal gas, $\Delta H = \Delta U + \Delta(pV) = \Delta U + \Delta(RT) = \Delta U + R \Delta T$. Therefore, $\Delta H = \Delta U + R \Delta T$. Substituting the values of ΔH and ΔU from above in the former equation, $C_P \Delta T = C_V \Delta T + R \Delta T$.

Section C

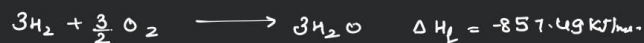
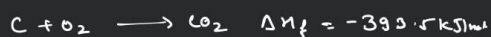
10. Step 1 find the O N Step 2 find the OHR and RHR
Step 3 balance electron by OH^- ion Step 4 balance O by H_2O
Step 5 balance electron by comparing both the equation.
11. Step 1 find the O N Step 2 find the OHR and RHR
Step 3 balance O by H_2O Step 4 balance Hydrogen by H^+ ion
Step 5 balance electron by comparing both the equation.

Problem 5.9

The combustion of one mole of benzene takes place at 298 K and 1 atm. After combustion, $\text{CO}_2(\text{g})$ and $\text{H}_2\text{O}(\text{l})$ are produced and 3267.0 kJ of heat is liberated. Calculate the standard enthalpy of formation, $\Delta_f H^\circ$, of benzene. Standard enthalpies of formation of $\text{CO}_2(\text{g})$ and $\text{H}_2\text{O}(\text{l})$ are $-393.5 \text{ kJ mol}^{-1}$ and $-285.83 \text{ kJ mol}^{-1}$ respectively.



$$\Delta_f H = -3267 \text{ kJ mol}^{-1}$$



$$\Delta_f H_{\text{benzene}} = -3218 + 3267$$

$$= 48.51 \text{ kJ mol}^{-1}$$

$$\Delta_f H_{\text{benzene}} = 48.51 \text{ kJ mol}^{-1}$$

12.

13. : (a) Exchange both energy and matter (b) Exchange only energy not the matter (c) Neither Exchange energy nor matter

*****ALL THE BEST*****