



# Brain International School

Vikas Puri, New Delhi

## REVISION SHEET

**SUBJECT: CHEMISTRY**

**CLASS-XI**

**TERM 1**

### Ch-5 Thermodynamics

1. An exothermic reaction may not be always thermodynamically spontaneous. Justify.
2. One kg coal is burnt separately in a close container and in an open vessel. Will the heat evolve in the two cases be same or different?

#### MCQ type questions:

3. The enthalpy of fusion of water is 1.435 kcal/mol. The molar entropy change for the melting of ice at  $0^{\circ}\text{C}$ .  
(a) 10.52 cal/mol (b) 21.04 cal/mol  
(c) 5.260 cal/mol (d) 0.256 cal/mol
4. The correct thermodynamic conditions for all spontaneous reactions at all temperature is:  
(a)  $\Delta H < 0$  and  $\Delta S > 0$  (b)  $\Delta H < 0$  and  $\Delta S < 0$   
(c)  $\Delta H < 0$  and  $\Delta S = 0$  (d)  $\Delta H > 0$  and  $\Delta S < 0$
5. Bond dissociation enthalpy of  $\text{H}_2$ ,  $\text{Cl}_2$  and  $\text{HCl}$  are 434, 242 and 431 kJ/mol respectively. Enthalpy of formation of  $\text{HCl}$  is  
(a) -93 kJ/mol (b) 245 kJ/mol  
(c) 93 kJ/mol (d) -245 kJ/mol

### Ch-4 Chemical bonding

6. Give reason for the following:  
(a) Why bond length in ozone is equal?  
(b) Be has all paired electrons but it forms compound.  
(c)  $\text{BF}_3$  shows zero dipole moment.
7.  $\text{He}_2$  can not be formed show according to M.O.T.
8. Find geometry, hybridization and shape of  $\text{SF}_4$ ,  $\text{PCl}_5$ , and  $\text{XeF}_4$ .
9. Why solubility of  $\text{HO}-\text{CH}_2-\text{CH}_2-\text{OH}$  is more than  $\text{CH}_3\text{OH}$ ?

### **Ch-3 Classification of elements & Periodicity in properties**

#### **Assertion and reason type:**

- (a) If both assertion and reason are correct and reason is correct explanation for assertion.
- (b) If both assertion and reason are correct but reason is not correct explanation for reason.
- (c) If assertion is correct but reason is wrong.
- (d) If assertion is wrong and reason correct.

10. Assertion Electron affinity of noble gases is zero.

Reason: The noble gases have complete octet.

11. Assertion: Helium should be located in second group but it is kept in 18<sup>th</sup> group.

Reason: Properties of Helium are similar with 18<sup>th</sup> group elements.

12. Write short note on (a) Shielding effect (b) Penetration effect

13. Second electron gain enthalpy of oxygen is positive. Explain.

#### **Ch-2 Structure of atom**

14. Define the following:

(a) Aufbau principle (b) Hund's rule (c) Pauli exclusion principle.

15. Give proof for dual nature of moving electron.

16. Find the relation for angular momentum.

17. If Momentum and position of moving electron is equal then find velocity of electron in terms of  $h$ ,  $m$  and  $\pi$ .

18. If uncertainty in velocity of electron is  $2.4 \times 10^8$  m/sec. then find position of electron.

19. Why electron can not travel in circular path explain according to H.U.P.

#### **Ch-1 Some basic concept of chemistry**

20. Why molality is preferred over molarity?

21. Find mass of carbon present in 0.4 moles of ethane.

22. Find atoms of each element in 49g sulphuric acid.

23. 40g calcium carbonate reacts with 50g hydrochloric acid then find the following:

(a) Limiting reagent (b) Volume of  $\text{CO}_2$  gas released (c) How much other reactant left

24. Find Molality, molarity and mole fraction of components in 40%  $\text{H}_2\text{SO}_4$  solution.

25. Find total electrons in 8g methane gas.