BRAIN INTERNATIONAL SCHOOL

SESSION 2024-25

CLASS: XI **REVISION SHEET** **SUBJECT: CHEMISTRY**

Comprehension:

Atoms and molecules are so small in size that it is neither possible to count them individually nor possible to determine their mass. These are counted collectively in terms of Avogadro's number. The mass of Avogadro's number of atoms and molecules is known as gram atomic mass and gram molecular mass respectively. The volume occupied by Avogadro's number of molecules of a gas or vapours is known as molar volume.

1. If N_A is Avogadro's number, then the number of valance electrons in 4.2g of nitride ions(N^{3-}) is

   (a)$4.2N_A$ (b) $2.4N_A$

   (c)$1.6N_A$ (d)$3.2N_A$

2. The vapour density of a gas is 11.2. The volume occupied by 11.2g of gas at NTP will be.

   (a)22.4 L (b) 11.2L

   (c) 1L (d)44.8L

3. The number of molecules in 16g methane is :

   (a)$3.0x10^{23}$ (b)$16/6.022x10^{23}$

   (c) $6.022\ x10^{23}$

   (d) $\frac{16}{3.0}10^{23}$

4. If $3.01\ x10^{20}$ molecules are removed from 98mg of H_2SO_4, then the number of moles of H_2SO_4 left will be.

   (a) $0.1X10^{-3}$ (b) $1.66\ X\ 10^{-3}$

   (c) $9.95\ X10^{-2}$ (d) $0.5\ X\ 10^{-3}$

5. Calculate the molecular percentage of hydrogen in sucrose.
6. Calculate the no. of atoms present in 4g of methane
7. Calculate the no. of moles of 12gm. of H_2S gas.

Assertion –Reason type questions

(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 assertion

(c) If assertion is correct but reason is incorrect

(d) If both assertion and reason are incorrect

8. Assertion: Emperical and molecular formule of $NaHCO_3$ are the same.

Reason: Upon heating, $NaHCO_3$ evolve CO_2 gas.

Structure of atom

9Assertion:Photo electric effect is most readily shown by cesium metal.

Reason: Photons are easiest access to the surface of cesium metal.

10: Assertion:. Helium and beryllium have similar outer electronic configuration of the type ns^2

Reason: Both are chemically inert.

11Assertion:All molecules with polar bonds may not have dipole moments.

Reason: Dipole moment is vector quantity and bond dipoles may cancel out.

12.De-Broglie equation has no significance in daily life.Explain

13. Explain the Afbau principle.

14. Why electron cannot locate in nucleus? explain according to H.U.P.

Redox

15. Can we store copper sulphate solution in silver pot? explain according to concept of electrode potential.

16. Explain the function of salt bridge.

17. Why components of alloy show zero oxidation state?

18.Find oxidation state of bold element.$\mathbf{Cr}O_5$, $\mathbf{S}_4O_6^{-2}$

.19. Why SO_2 behave like oxidizing as well as reducing agent?

Classification of elements and periodicity in properties

20. What is electron gain enthalpy? On what factors it depends?

21. What are the bond parameters?

22. Explain Born haber cycle taking example for $CaCl_2$ formation..

23. Why SO_2 behave like oxidizing as well as reducing agent?

Chemical bonding and molecular structures

24. O_2shows paramagnetic character while it has all paired electrons according to V.B.T.

25. Explain dipole moment of boron trifluoride is zero.

26.What are bond parameters? . 27.What is hydrogen bonding?

28. Boiling point of p-Nitropheol is more than o-Nitrophenol why?

Thermodynamics

34. Calculate the temp. of 5.5 moles of a gas occupying 6 dm^3 at 3.35 bar (R=0.083 bar dm3 k^{-1} mol^{-1})

Multiple choice questions only one correct answer:

35.When liquid boils, there is

(a) an increase in entropy (b) a decrease in entropy

(c) an increase in heat of vaporization (d) an increase in free energy

36.Which of the following is extensive property

(a) volume and enthalpy (b) volume and temperature

(c) volume and specific heat (d)pressure and temperature

37.Explain Hasse's law with example.

Equilibrium

38.We know that relation between Kc and Kp is $Kp = Kc(RT)^{\Delta ng}$

39. What are homogeneous and heterogeneous equilibrium?

Multiple choice questions:

40. What would be the value of Δng for following reaction

$NH_4Cl(s) \rightarrow NH_3(g) + HCl(g)$

(a) 1 (b) 2

(c) 3 (d) 0.5

41.Acidity of BF_3 can be explained on the basis of following theory

(a)Arrhenius theory (b) Lewis theory

(c) Bronsted theory (d) Bronsted as well as Lewis concept

Some Basic concept of Organic chemistry

42.Draw the Structures of the following compounds.

(a) Hex-3-enoic acid (b) 2-chloro-2-methylbutan-1-ol

43 Explain Inductive effect with example.

44. Explain why $(CH_3)_3C^+$ is more stable than $CH_3C^+H_2$.

45. Write the condensed and bond line formula of 2,2,4-Trimethylpentane