# CHEMISTRY

# BOOKS - OSWAAL PUBLICATION

# Sample Paper 6

**Exercise**

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**1.** What do you mean by uncertainity in measurement ?

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**2.** Whrite the van-der Waal's equation for one mole of a real gas.

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**3.** Define Le-Chatelier's principle.

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**4.** State the modern periodic law.

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**5.** What is the oxidation number of Cr in $K_2CrO_4$

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**6.** Why do alkali metals not occur in free state?

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**7.** What is the formula of borax ?

**8.** What is Catenation?

**9.** During the estimnation of nitrogen by Kjeldhal's method, coper sulphate is added to sulphuric acid.why?

**10.** Write the structure of dimethyl acetylene.

**11.** Explain law of constant composition with suitable example.

12. How many molecules of an ideal gas are there is $1 \times 10^{-3} dm^3$ at STP ?

13. Mention the characteristic of covalent molecule.

14. Which out of LI, Na, K, Be, Mg, Ca has lowest ionization enthalpy and why?

15. Orthoboric acid acts as a Lewis acid . Why ?

**16.** Write the structure of cis and trans isomer of But-2-ene.

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**17.** Explain addition reaction of hydrogen in alkynes.

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**18.** Name the components of photochemical smog.

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**19.** To which block does the element with atomic number 50 belong?

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**20.** Define the term ionic radius. Justify that the radius of anion is larger than the parent atom.

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**21.** Write the Lewis dot structure of $CCI_4$

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**22.** Write the Lewis dot structure of $:PH_3$.

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**23.** Define electrovalency of an element

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**24.** Write any three points of differences between valence bond theory and molecular orbital theory.

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**25.** Find the oxidation number of the underlined atoms in the following :

$HCIO_3$

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**26.** Find the oxidation number of the underlined atoms in the following :

$CIO_3^-$

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**27.** Define decomposition redox reaction?

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**28.** Define ionic hydrides.

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**29.** Write any two uses of heavy water.

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**30.** The ionic compounds of alkali metals colourless. Why?

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**31.** Give any two uses of calcium oixde.

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**32.** In elements of group 14,:Which forms the most acidic oxide?

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**33.** In elements of group 14,:Which is normally found in +2 oidation state?

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**34.** In elements of group 14,:Which is used as semi-conductor?

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**35.** Define limiting reagent.

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**36.** Calculate the mass of the following :$5.4 mo \leq sof O_2$

37. Calculate the mass of the following ,2.5 moles of CO_2`

38. Calculate the mass of the following :$9.2 mo \leq of N_2$

39. Write the difference between isotope and isobars.

40. Calculate the wavelength of a photos in Angstrom units having energy of one electron volt.

$$\left(h = 6.626 \times 10^{-34} js, C = 3 \times 1 -^8 ms^{-1}\right)$$

**41.** State the Hund's Rule of maximum multiplicity.Write the electronic configuration of $Cr^2+$ .

**42.** A neutral atom has 2 k electrons, 8 L electrons and 8 M electrons.Predict from this,calculate: its atomic number

**43.** A neutral atom has 2 k electrons, 8 L electrons and 6 M electrons.Predict from this, calculate : Total number of s-electrons

**44.** A neutral atom has 2 k electrons, 8 L electrons and 6 M electrons.Predict from this, calculate : Total number of p-electrons

**45.** Mention of causes for the deviation of ral gas from ideal behaviour.

**46.** A sample of a gas is found to occupy a volume of $800cm^2$ at$27°$ celsius. Calculate the temperature at which it will occupy a volume of $400cm^2$, provided the pressure is kept constant.

**47.** What is an isolated system ?

**48.** What is a state function ?

**49.** Define heat capacity .

**50.** What is meant by free energy of a system ? What will be the direction of the chemical reaction when (i) $\Delta G = 0$ (ii) $\Delta G > 0$ (iii) $\Delta G < 0$ ?

**51.** What is meant by free energy of a system ? What will be the direction of the chemical reaction when (i) $\Delta G = 0$ (ii) $\Delta G > 0$ (iii) $\Delta G < 0$ ?

**52.** Out of dimond and graphite which has higher entropy?

**53.** Calculate the entropy increase in the evaporation of 1 mole of a liquid when it boils at $100°C$ having heat of vaporisation at $100°C$ as 540 cals\gm.

**54.** Define reaction quotient.Predicty the direction of the when : Q=K

**55.** Define reaction quotient.Predicty the direction of the reaction when : Q>K

**56.** The following concentration were obtained for the formation of $NH_3$ from $N_2$ and $H_2$ at quilibrium at 500 k. It $\left(N_2(g)\right) = 1.5 \times 10^{-2}M, \left(H_2(g)\right) = 3.0 \times 10^{-2}M$ and $\left(NH_3(g)\right) = 1.2 \times 10$ .Calculate equilbrium constant

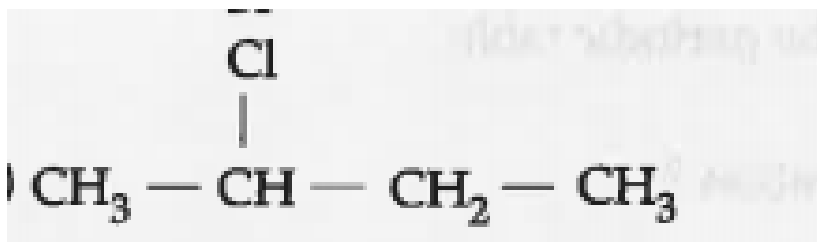**57.** Write any two limitationsof Lewis concept of acids and bases.

**58.** Define pH of a solution and write its mathematical equation.Write the pH value of human blood.

**59.** Write the IUPAC name of following compounds:

$$CH_3 - \overset{\displaystyle Cl}{\overset{|}{CH}} - CH_2 - CH_3$$

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**60.** Explain simple distillation.

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**61.** Explain positive electromeric effect with an example.

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**62.** What is substituation reaction?Give and example

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**63.** Explain Linear polymerisation of alkynes.

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**64.** Exlain the mechanism of chlorination benzene

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