



# CHEMISTRY

## BOOKS - OSWAAL PUBLICATION

### Solved Paper 2020-2

#### Exercise

1. Define molarity of a solution.



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2. Give the ideal gas equation for  $n$  moles of a gas.



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3. Write the relationship between  $K_p$  and  $K_c$



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4. Select and iso electronic pair among the following :  $Na^+$ ,  $Cl$ ,  $F^-$ ,  $Li^+$



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5. What is the oxidation state of Manganese (Mn) in  $K_2MnO_4$ ?



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6. Why is sodium kept immersed in kerosene oil ?



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7. What is Catenation?



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8. What is the composition of water gas?



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9. What is  $R_f$  value?



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**10.** What is Pyrolysis? Give example .



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**11.** Calculate the molarity of NaOH solution prepared by dissolving '4g' of it in 250ml of water.



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**12.** What are the causes for deviation of real gases from ideal behaviour.



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**13.** Explain the non existence of helium molecule on the basis of molecular orbital theory (MOT).



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**14.** Explain the action of carbon dioxide in lime water.



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**15.** How is diborane prepared in the laboratory?



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**16.** State Markownikoff's rule with an example.



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**17.** Mention any two necessary conditions for any system to be aromatic.



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**18.** Write any two common chemical of photochemical smog.



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**19.** What do you mean by the term electron gain enthalpy? How does electron gain enthalpy change along a period and in a group?



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**20.** Distinguish between a sigma and a pi bond.



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**21.** Define dipole moment.



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**22.** Write any three postulates of VSEPR theory.



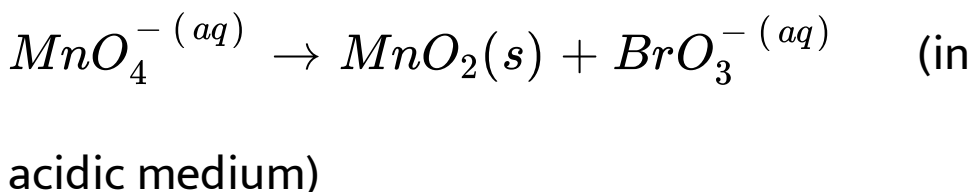
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**23.** Calculate bond order of Oxygen molecule and mention its magnetic property.



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24. Balance the redox reaction using oxidation number method:



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25. What is the chemical used in Clarke's process to remove temporary hardness of water?



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**26.** Give the preparation of sodium hydroxide by Caster-Kellner-Cell method.



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**27.** Mention any 2 difference between diamond and graphite.



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**28.** Write the structure of inorganic benzene.



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**29.** Find the empirical formula of a compound which contain 33.18% of carbon, 4.60% of hydrogen, 29.49% of oxygen and 32.72% of chlorine (At masses: C=12, H=1, O=16, Cl=35.5)



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**30.** State Avogadro law and write mathematical form.



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**31.** How many significant figures are there in the number,0.0025?



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**32.** Write the three postulates of Bohr's atomic model.



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**33.** Write the electronic configuration of copper ( $Z=29$ ).



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**34.** Calculate the energy of radiation with wave length 500nm.



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**35.** State Heisenberg's uncertainty principle.



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**36.** Name the spectral lines which lies in the UV region.





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**37.** Write the postulates of kinetic theory of gases.



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**38.** Why drops and bubbles are spherical in shape?



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**39.** State and illustrate Hesse's law.



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**40.** Write the mathematical form of the first law of thermodynamics.



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**41.** What is the unit of entropy ?



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**42.** What do you mean by isolated system ?

Given an example also.



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**43.** Which allotropic form of carbon is more stable?



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**44.** What is a spontaneous process ? Give an example.



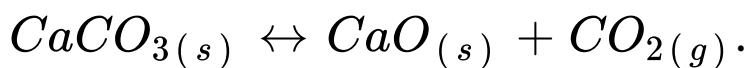
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**45.** State Le-chatetier's principle. Describe the effect of addition of  $H_2$  and addition of  $CH_3OH$  on the equilibrium reaction.



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46. Write an expression for  $K_p$  for the following reaction.



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47. Give an example of reaction where

$$K_p = K_c$$



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**48.** What is meant by Conjugate acid -base pair?

Write the conjugate acids for  $CN^-$  and  $H_2O$



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**49.** Define solubility product. Write its any two applications.



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**50.** Draw a neat labelled diagram & give the principle in the estimation of halogen by Carius method.



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**51.** Explain functional isomerism with example.



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52. Give two differences between inductive effect and electromeric effect.



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53. Give the IUPAC name of



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**54.** Name the separating method used for the separation of glycerol from spent lye.



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**55.** What are the free radicals?



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**56.** Explain the mechanism of chlorination benzene



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57. Name the reaction involved in the conversion of benzene to toluene



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58. What is carcinogen?



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