



CHEMISTRY

BOOKS - OSWAAL PUBLICATION

Solved Paper 2019-2

Exercise

1. What is the SI unit of density?



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2. Define critical temperature (T_e)



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3. Define pH of a solution.



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4. State the modern periodic law.



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5. What is the oxidation number of Mn in $KMnO_4$



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6. Write the general electronic configuration of alkali metals.



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7. What is dry ice?



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8. What is the composition of water gas?



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9. Explain the homolytic fission.



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10. Name the catalyst used in Friedel -craft reaction.



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11. Calculate the molarity of a solution containing 2.3 moles of solute dissolved in 4.6 litres.



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12. State Boyle's law and give its mathematical form.



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13. Define dipole moment ? Comment on structure & dipole moment of CO_2 , BF_3



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14. Give the important uses of plaster of paris.



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15. Write the resonance structure of carbonate ion (CO_3^{-2})



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16. Explain the nitration of benzene.



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17. Name the components of photochemical smog.



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18. What do you mean by ionization enthalpy?
How does it vary across a period and down a group?



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19. Define hybridization ? Explain the hybridization in Methane molecule.



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20. Write the electronic configuration of Hydrogen molecule. Calculate its bond order and mention its magnetic property.



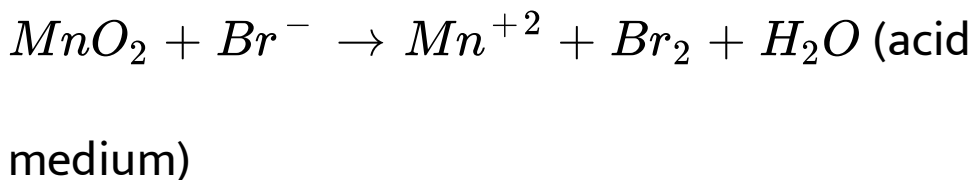
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21. Write any three postulates of VSEPR theory.



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22. Balance the following redox reaction by using oxidation number method.



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23. Explain ionic hydrides with an example



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24. What is temporary hardness of water?



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25. Explain the diagonal relationship between
Lithium and Magnesium



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26. Explain the structure of diborane molecule.



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27. A compound contains 4.07% hydrogen, 24.27% carbon and 71.65% chlorine. Its molar mass is 98.96 g. What are its empirical formula and molecular formula?



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28. Calculate the molecular mass of an atom.



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29. Write the value of n , l and m for electron present in $2P_z$ orbital.



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30. Write the significance of four quantum numbers.





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31. State and explain Hund's Rule of maximum multiplicity.



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32. Write any four postulates of kinetic theory of gases



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33. Enthalpy of combustion of benzene is -3267kJmol^{-1} . Calculate enthalpy of formation of benzene, given enthalpy of formation of CO_2 and water are -393.5kJmol^{-1} and -285.83kJmol^{-1} .



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34. State Hess's law of constant heat summation.



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35. What is an exothermic reaction ? Give an example.



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36. Prove that $pH + pOH = pK_w$ at 298 K.



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37. Calculate the pH of 0.01 MH_2SO_4 by assuming complete ionisation.



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38. Define buffer action.



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39. What is common ion effect? Give an example.



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40. Discuss amphoteric nature of water with an example.



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41. Mention the conjugate acid of SO_4^{2-}



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42. With neat labelled diagram, describe the estimation of nitrogen by Dumas method.



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



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44. What are the free radicals?



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45. Write the structure of 3-methyl-pentanal.



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46. Give the example for $+R$ effect



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47. Explain the mechanism of chlorination of methane.



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48. Explain the mechanism of addition of hydrogen bromide to propene.



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