



CHEMISTRY

BOOKS - OSWAAL PUBLICATION

Sample Paper 7

Exercise

1. The body temperature of a normal healthy person is 98.4° F. Write the temperature on the celsius scale?



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2. Define vapour pressure.



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3. How are K_p and K_c related? Mention the condition under which $K_p = K_c$.



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4. Name the element which is most electronegative , and the element which is least electronegative in the periodic chart.



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5. What do you mean by disproportionation reaction?



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6. why do alkali metals give characteristic flame colouration?



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7. How does BF_3 act as a catalyst in industrial processes ?



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8. What is the hybridisation state of C in diamond?



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9. Which type of organic compounds cannot be Kjeldahised?



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10. What is conformation in alkanes



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11. Explain the law of reciprocal proportions with suitable example.



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12. State Boyle's law.



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13. Write an equation for root mean square velocity of a gas.



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14. Give two difference between bonding molecular orbital and antibonding molecular orbital.



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15. What happens when sodium carbonate undergoes hydrolysis? Give chemical reaction takes place



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16. What happens when CO_2 is passed through lime water : For a short duration



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17. What happens when CO_2 is passed through lime water : For a long duration?



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18. Write the IUPAC name of following organic compounds: $(CH_3)_3 - C - CH = CH_2$



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19. Write the IUPAC name of following organic compounds:



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20. Explain peroxide effect with suitable example.



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21. What do you mean by Biological Oxygen Demand (BOD) ? Give the BOD value of pure water



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22. Why is melting point of LiCl lower than NaCl ?



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23. Give the name and atomic number of the noble gas element in which the total number of d-electrons is equal to the difference in the number of s and p electrons



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24. Define the terms: Octet Rule



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25. Define the terms,

Bond length



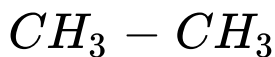
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26. Define the terms : Formal charge.



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27. Which hybrid orbitals are used by carbon atoms in the following molecules :



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28. Which hybrid orbitals are used by carbon atoms in the following molecules :



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29. Define intermolecular hydrogen bonding.



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30. Draw the energy level diagram of N_2 .
calculate its bond order.



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31. How does H_2O_2 behave as a bleaching agent?



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32. Write any two similarities between Lithium and Magnesium.



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33. What happens when CaO is heated with ammonium chloride?



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34. Give suitable reason or equation for the following statements : Silicon dioxide is treated with HF.



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35. Give suitable reaction or equation for the following statements : C is heated with ZnO.



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36. Give suitable reason or equation for the following statements : Aluminous utensils should not be kept in water overnight.



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37. Explain heterogenous mixtures Give one example



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38. Calculate the mass of sodium acetate required to make 500 mL of 0.375 molar aqueous solution. Molar mass of sodium acetate is 82.0 g mol^{-1}



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39. The atomic number of an element is 5 and mass number is 11. Find the number of protons and neutrons present in it.



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40. Calculate : Frequency of yellow radiation having wavelength 5800 \AA



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41. Write the electronic configuration of the element with $Z=17$



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42. Write the electronic configuration of the element with $Z=17$ and predict : Number of half filled orbitals.



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43. Write the electronic configuration of the element with $Z=17$ and predict : Number of half filled orbitals.



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44. State Aufbau principle.



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45. State Aufbau principle.



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46. State Aufbau principle.



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47. A gas occupying a volume of 100 Litres is at $20^{\circ}C$ under a pressure of 2 bar. What temperature will it have when it is placed in an evacuated chamber of volume 175 Litres? The pressure of the gas in the chamber is one - third of its initial pressure.



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48. State first law of thermodynamics write its mathematical form.



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49. When liquid benzene is oxidised at constant pressure at 300 k, The change in enthalpy is -3728 kj. What is the change in internal energy at the same temperature?
($R=8.314 \times 10^{-3} \text{ kJ K}^{-1} \text{ mol}^{-1}$)



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50. Write any two factors which influence entropy.



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51. Write the relationship between standard free energy change and the equilibrium constant of a reaction. What is the sign of standard free energy change when the equilibrium constant is less than one?



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52. Define equilibrium constant of a reaction. What is the unit of equilibrium

constant.



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53. Derive the relationship between K_p and K_c



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54. State Henry's law.



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55. Solubility product of $BaSO_4$ is 2.4×10^{-10}

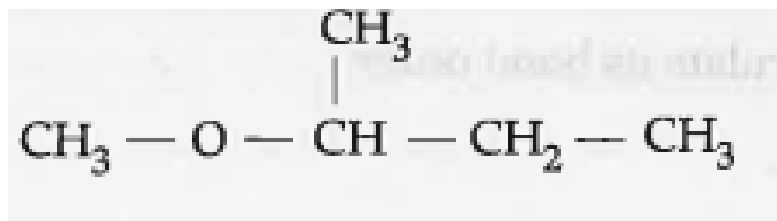
.Calculate its solubility.



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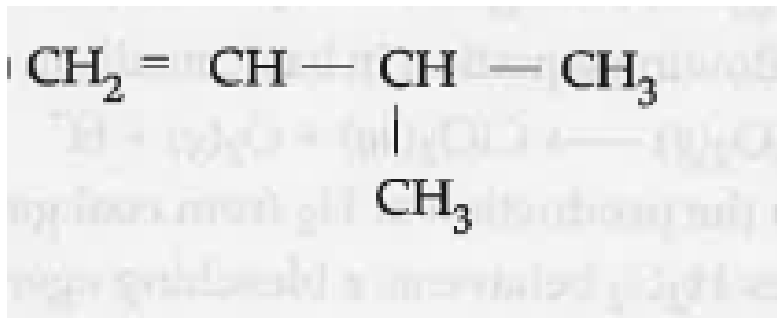
56. For the following compounds write IUPAC

names:



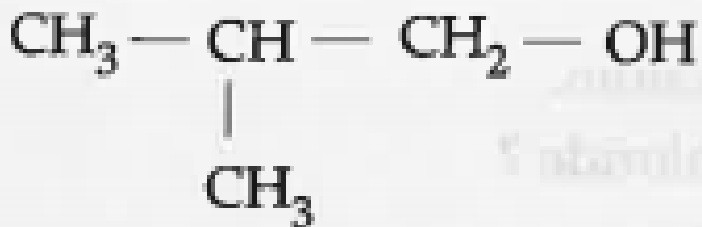
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57. For the following compounds write IUPAC names:



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58. For the following compounds write IUPAC names:



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59. Define : Nitrenes



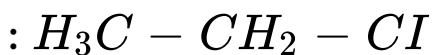
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60. Define : Nucleophiles



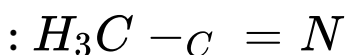
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61. Using curved arrow notation show the formations of reactive intermediates when the following covalent bonds undergo heterolysis



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62. Using curved arrow notation show the formations of reactive intermediates when the following covalent bonds undergo heterolysis





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63. Briefly explain column chromatography



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64. How is benzene prepared from ethyne?



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65. Explain the mechanism of Acylation of Benzene



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