



CHEMISTRY

BOOKS - OSWAAL PUBLICATION

Sample Paper 3

Excercise

1. Define limiting reagent.



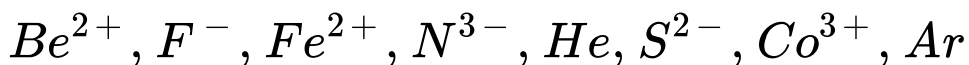
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2. What is compressibility factor (Z).



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3. Group the following species that are isoelectronic.



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4. Determine the oxidation number of C in C_2H_6 and CO .



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5. Write the name of one radioactive alkali and alkaline earth metal.



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6. Give the composition of producer gas.



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7. In which pure form does carbon exist in nature ?



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8. Define steam distillation.



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9. Write the possible isomers of Butane



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10. Represent 0.000352 in scientific notation.



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11. Mention any one postulates of kinetic molecular theory.



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12. Draw the sp hybridized C.



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13. what is effect of heat on the following compounds? (Give equations for the reactions)

(i) $CaCO_3$ (ii) $CaSO_4 \cdot 2H_2O$



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15. How does ammonia react with diborane ?



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16. Explain a test for unsaturation.



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17. What is Pyrolysis? Give example .



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18. Write major causes of ozone layer depletion.



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19. Explain why second ionisation energy of B is significantly higher than the second ionisation energy of C. even though the first ionisation enthalpy "B or Be" AND Why?



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20. Among HF, HCl, HBr and HI which has highest ionic character?



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21. Mention any two characteristics of ionic compounds.



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22. Predict the shapes of ClF_3 and IF_7 on the basis of VSEPR.



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23. Predict the hybridisation state of PCl_5 .



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24. Draw molecular orbital energy level diagram of H_2^+ ion. Calculate its bond order and magnetic nature also.

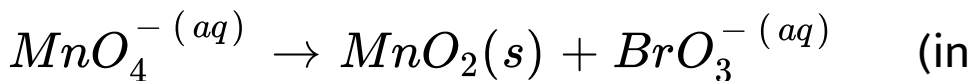


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25. Balance the redox reaction using oxidation

number

method:



acidic medium)



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26. What is meant by demineralised water?



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27. How does dihydrogen react with dinitrogen?



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28. What is slaked lime?



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29. Compare four properties of alkali metals and alkali earth metals.



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30. What is inert pair effect?



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31. Explain the reaction of aluminium towards acid.



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32. Define the term 'Molarity'.



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33. Define the term molality.



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34. 1.0 g of Mg is burnt in a closed vessel which contains 0.5 g of O_2 . Which is the limiting

reactant? What is the amount of MgO formed in the reaction?



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35. Write any two properties of anode rays.



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36. What are two longest wavelength line (in nano meters) in the Lyman series of hydrogen spectrum? ($r = 1.097 \times 10^{-2} nm^{-1}$)



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37. State Heisenberg's uncertainty principle.



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



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39. A neutral atom has 2 k electrons, 8 L electrons and 8 M electrons. Predict from this, calculate: total number of s-electrons



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40. A neutral atom has 2K electrons, 8 L electrons and 8 M electrons. Predict from this, calculate: total number of p-electrons



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41. Write any two importance of surface tension.



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42. A mixture of hydrogen and oxygen at one bar pressure contains 20% by weight of hydrogen. Calculate the partial pressure of hydrogen.



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43. Define an adiabatic process.



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44. What is an isobaric process ?



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45. Calculate the amount of work done by 2 mole of an ideal gas at 298 k in reversible

isothermal expansion from 10 Litres to 20 Litres. ($R=8.314 \text{ Jk}^{-1}\text{mol}^{-1}$)



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46. What are the applications of Hess's Law of constant heat summation?



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47. What do you mean by the term entropy?

Write any two characteristics of it.



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48. Explain the equilibrium in homogeneous system with an example.



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49. What concentration of CO_2 be in equilibrium with $2.5 \times 10^{-2} \text{ mol L}^{-1}$ of CO at 100°C for the reaction: $\text{FeO(s)} + \text{CO(g)} \rightleftharpoons \text{Fe(s)} + \text{CO}_2(\text{g})$; $K_c = 5.0$



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50. Define acids and bases by Lewis concept. Write one limitation of this concept.



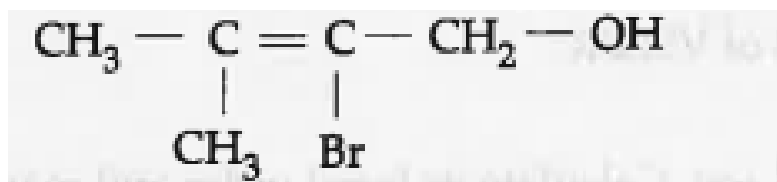
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51. Why do teeth undergo decay by eating sweets regularly?



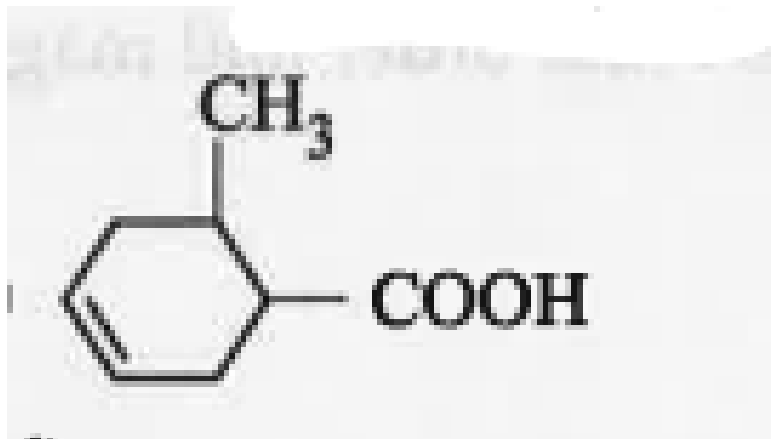
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52. Write IUPAC name of the following organic compounds:



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54. Define: Free radicals,



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55. Define : Position isomerism.



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56. Define : Nucleophiles



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57. Explain nucleophilic substitution reaction with an example.



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58. How sulphur is detected by Lassaigne's filtrate?



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59. What happens when benzene is added to hydrogen.



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60. Explain the mechanism of halogenation or chlorination of benzene.



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