CHEMISTRY

BOOKS - OSWAAL PUBLICATION

Solved Paper 2019-1

Excercise

1. What is the SI unit of electric current?

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2. State Dalton's law of partial pressure and write mathematical form.

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3. Write the conjugate base of HCO_3^-.

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4. Write the valence shell electronic configuration of P-block elements.

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5. Assign the oxidation number of Mn in MnO_4^-

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6. Name the alkali metal which has high hydration enthalpy.

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7. Give the chemical formula of Borax.

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8. What are silicones?

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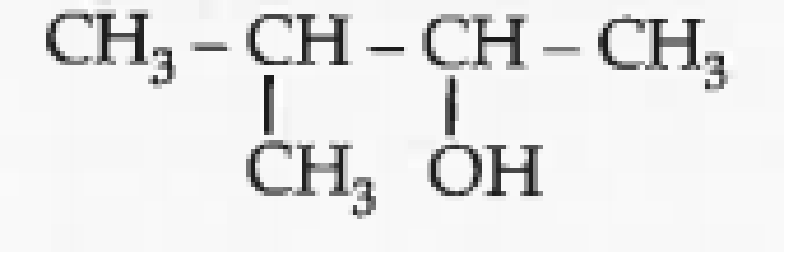
9. Write IUPAC name of



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10. Name the organic product obtained when Benzee is treated with excess of chlorine in

presence of anhydrous Aluminium chloride.

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11. A solution is prepared by adding 2 g of a substance A to 18 g of water. Calculate the mass percent of the solute.

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12. Derive the relation between Density and Molar mass of a gaseous substance from ideal gas equation.

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13. Write the resonance structures of ozone.

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14. What happens when

(i) Quicklime is heated with silica.

(ii) Sodium burns vigorously in oxygen.

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16. Diamond is covalent yet it has high melting point. Why?

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17. How to prepare benzene from ethyne?

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18. Explain the mechanism of Friedel craft alkylation of benzene.

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19. What are particulate pollutants? Give an example

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20. What is electron negativity ? How does it change in a period as well as in a group ?

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21. Which of the following will have most negative electron gain enthalpy?

P,S,Cl,F

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22. Explain sp-hybridisation in $BeCl_2$ molecule.

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23. Give any two difference between σ and π bond.

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24. Name the type of Hydrogen bonding in ortho-nitrophenol.

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25. Write the Electronic configuration of Oxygen molecule,Predict its magnetic property and calculate its Bond order.

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26. Balance the following redox reaction by using Oxidation number method in acidic medium. $Cr_2O_7^{-2}(aq) + SO_3^{-}2(aq) \rightarrow Cr^{+}3(aq) + SO_4^{-2}(aq)$

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27. How temporary Hardness of water is removed by Boiling ?

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28. What is the composition of water gas?

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29. Complete the following reactions.

(a) $CaCO_3 \xrightarrow{1200K}$ _____ + _____

(b) $2\,Ca(OH)_2 + 2Cl_2 \longrightarrow$ _____ + _____

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30. Lithium shows diagonal relationship with Megnesium. Give reason.

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31. Write the chemical formula of Inorganic benzene.

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32. Write the dimeric structure of Aluminium chloride.

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33. Define catenation.

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34. Calculate the amount of carbondioxide produced by the combustion of $24g$ of methane.

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35. Define Mole. What is the Value of Avagadro's Number.

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36. Express the number 232.508 in scientific notation.

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37. What are the observations made in Rutherford a-particle experiment.

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38. Give any two postulates of Bohr's theory of atomic model.

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39. Name any three quantum numbers and write their significance.

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40. State Heisenberg's uncertainty principle.

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41. Write any four postulates of kinetic theory of gases

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42. Define critical temperature. Write the value of critical temperatue for CO_2.

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43. Calculate the standard enthaly of formation of Methane. Given that the standard enthalpy of combustion of Methane, carbon and Hydrogen are -893.3kJ, -3.93kJ and -285.8kJ respectively.

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44. What is the change in the value of entropy when ice melts to give water.

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

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46. Mention any two thermodynamic criteria for spontaneous process.

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

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48. What is the effect of increase in temperature for the reaction?

$$2NO_{2(g)} \rightleftarrows N_2O_{4(g)} \quad \Delta H = -572.\ kJ$$

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49. Write the relationship between the solubility and solubility product of AB type salt.

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50. Calculate the pH of 0.001 M NaOH.Assuming complete dissociation of base.

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51. Classify the following species into lewis acid and lewis base.

(i) OH^- (ii) BCl_3

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52. Give an example for basic buffer.

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53. Explain functional isomerism with example.

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54. For the compound

$CH \equiv C - CH = CH - CH_3$

(i) Write the bond line formula for the compound.

(ii) Identify the number of Sigma and Pi-bonds.

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56. Define:Free radicals,

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57. How do you estimate carbon and hydrogen present in the organic compound by Liebig's method.(Diagram not necessary)

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58. What are nucluophiles?Give example.

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59. Explain the machanism of chlorinantion of methane.

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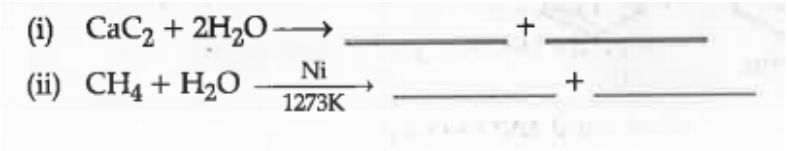
60. Complete the reaction:



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