



CHEMISTRY

BOOKS - CBSE COMPLEMENTARY MATERIAL CHEMISTRY (HINGLISH)

PRACTICE PAPER 1

Questions

1. Why are medicines more effective in collidal state ?



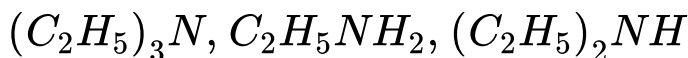
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2. What is difference between an emulsion and a gel ?



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3. Arrange the following in increasing order of base strength in gas phase:



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4. Why conductivity of silicon increases on doping with phosphorus?



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5. What is the basic structural difference between glucose and fructose ?



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6. Product obtained by hydrolysis of lactose are



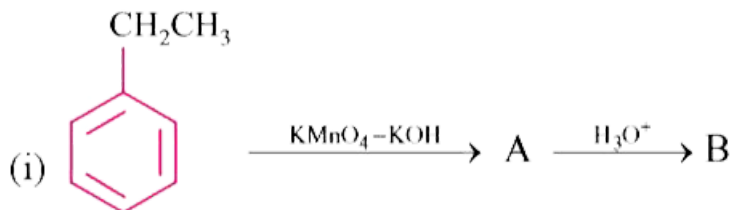
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7. Write IUPAC name of the given compound :



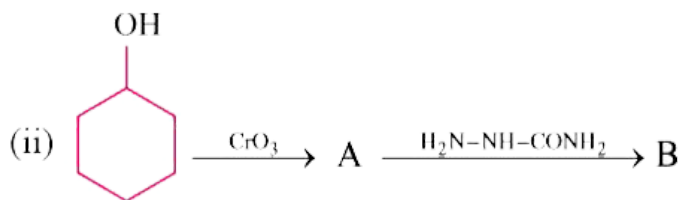
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8. Write structures of compounds A and B in each of the following reactions :



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10. For a reaction :



the proposed mechanism is as given below:



(i) Write rate law for the reaction.

(ii) Write the overall order of reaction.

(iii) Out of steps (1) and (2), which one is rate determining step ?



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11. Write two differences between an ideal solution and a non-ideal solution.

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12. When MnO_2 is fused with KOH in the presence of KNO_2 as an oxidising agent, it gives a dark green compound (A). Compound (A) disproportionates in acidic solution to give purple compound (B). An alkaline solution of compound (B) oxidises KI to compound (C) whereas an acidified solution of compound (B) oxidises KI to (D). Identify (A), (B), (C), and (D).

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13. Write IUPAC name of the complex $[Cr(NH_3)_4Cl_2]^+$. Draw structures of geometrical isomers for this complex.

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14. Using IUPAC norms write the formulae for the following :

Pentaamminenitrito-O-cobalt (III) chloride

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15. Using IUPAC norms write the formulae for the following :

Potassium tetracyanonickelate (II)



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16. Two complex is given as

$[CoF_6]^{3-}$ and $[Co(C_2O_4)_3]^{3-}$, which one complex

is:

(i) diamagnetic

(ii) more stable

(iii) outer orbital complex and

(iv) low spin complex?

(Atomic no. Of CO =

27)



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17. Write balanced chemical equations for the following processes :

XeF_2 undergoes hydrolysis.



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18. Write balanced chemical equations for the following processes :

MnO_2 is heated with conc. HCl.



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19. Arrange the following in order of property indicated for set:

H_2O , H_2S , H_2Se , H_2Te - increasing acidic character



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20. Arrange the following in order of property indicated for set:

HF , HCl , HBr , HI - decreasing bond enthalpy



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21. An element crystallizes in fcc lattice with a cell edge of 300 pm. The density of the element is 10.8 g cm^{-3} . Calculate the number of atoms in 108 g of the element.



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22. A 4% solution (w/w) of sucrose ($M = 342 \text{ g mol}^{-1}$) in water has a freezing point of 271.15K. Calculate the freezing point of 5% glucose ($M = 180 \text{ g mol}^{-1}$) in water.

(Given: Freezing point of pure water 273.15 K)



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23. The decomposition of NH_3 on platinum surface is zero order reaction. If rate constant (k) is $4 \times 10^{-3} M s^{-1}$, how long will it take to reduce the initial concentration of NH_3 from 0.1 M to 0.064 M.



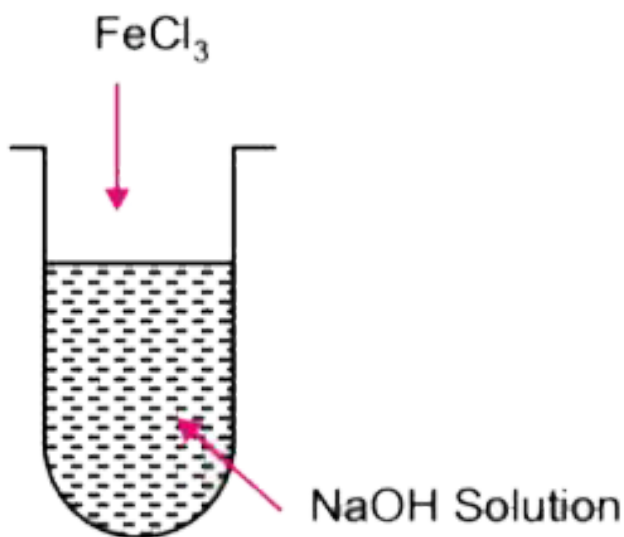
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24. What is the role of activated charcoal in gas mask?



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25. A colloidal sol is prepared by the given method in figure. What is the charge on hydrated ferric oxide colloidal particles formed in the test tube? How is the sol represented?



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26. How does chemisorption vary with temperature.



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27. Write the role of 'CO' in the purification of nickel.



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28. What is the role of silica in the extraction of copper?



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29. What type of metals are generally extracted by electrolytic method?



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30. (b) Why do transition metals form alloy ?



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31. Give reasons for the following:

Mn_2O_3 is basic whereas Mn_2O_7 is acidic.



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32. Give reasons for the following:

Eu^{2+} is a strong reducing agent.



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33. Write the structure of monomers used for getting the following polymers:

Nylon 6, 6



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34. Write the structure of monomers used for getting the following polymers:

Glyptal



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35. Write the structure of monomers used for getting the following polymers:

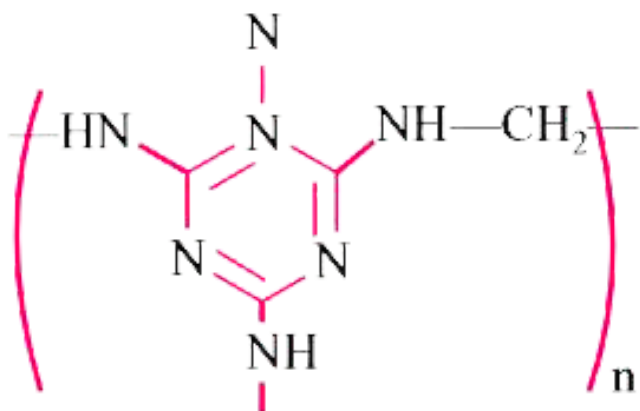
Buna-S

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36. Is $\left[-CH_2 - \overset{CH_3}{\underset{|}{CH}} - \right]_n$ a homopolymer or copolymer? Give reason.

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37. Write the monomers of the following polymer:



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38. What is the function of S in the vulcanization of rubber?

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39. Why is bithional added to soap ?

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40. Between sodiumhydrogen carbonate and magnesium hydroxide , which is a better antacid and why ?

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41. Why are detergents non - biodegradable while soap are biodegradable ?

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42. Define terms with a suitable example :

Antibiotics



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43. Artificial sweeteners.



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44. Define terms with a suitable example :

Analgesics



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45. Write the structures of main products when benzene diazonium chloride reacts with the following reagents:

(i) CuCN

(ii) $\text{CH}_3\text{CH}_2\text{OH}$

(iii) KI



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46. Out of $(\text{CH}_3)_3\text{C} - \text{Br}$ and $(\text{CH}_3)_3\text{C} - \text{I}$, which one is more reactive towards $\text{S}_\text{N}1$ and why?



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47. Write the product formed when p-nitrochlorobenzene is heated with aqueous NaOH at 443 K followed by acidification.



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48. Why dextro and laevo rotatory isomers of Butan-2-ol are difficult to separate by fractional distillation?



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49. Differentiate between the following :

Amylose and Amylopectin



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50. Differentiate between the following :

Peptide linkage and Glycosidic linkage



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51. Differentiate between globular and fibrous proteins.



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52. Write chemical reactions to show that open structure of D-glucose contains the following:

Straight chain



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53. Write chemical reactions to show that open structure of D-glucose contains the following:

Five alcohol groups

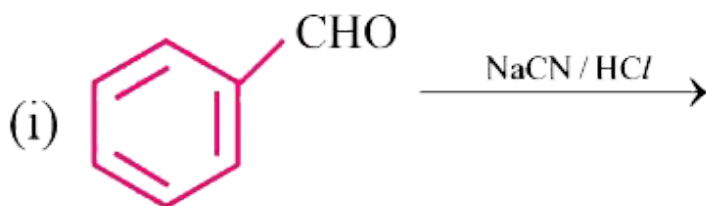


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54. Glucose contains in addition to aldehyde groups :

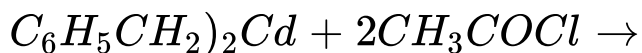
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55. Complete the following reactions:



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56. Complete the following reactions:





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57. Complete the following reactions:



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58. Write chemical equations, for the following reactions:

Propanone is treated with dilute $\text{Ba}(\text{OH})_2$



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59. Write chemical equations, for the following reactions:

Acetophenone is treated with $Zn(Hg) / \text{Conc. } HCl$

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60. Hydrogenation of benzoyl chloride in the presence of $Pd / BaSO_4$ gives :

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61. Sulphur vapours exhibit some paramagnetic behaviour. Explain.



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62. Single $N - N$ bond is weaker than the single $P - P$ bond. This is because of :



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63. Explain why ozone is thermodynamically less stable than oxygen ?



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64. Write the name of gas released when Cu added to dilute HNO_3

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65. Cu reacted to Conc. HNO_3 , which type of gas released during the reaction?

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66. Give one disproportionation reaction of phosphorus acid (H_3PO_3).

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67. Draw the structure of XeF_2 molecule.



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68. Account for the following:

Although Fluorine has less negative electron gain enthalpy yet F_2 is strong oxidizing agent.



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69. Account for the following:

Acidic character decreases from N_2O_3 to Bi_2O_3 in

group 15.



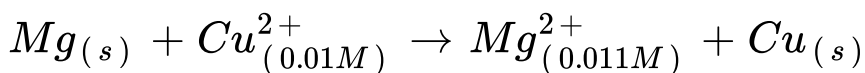
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70. Write a chemical reaction to test sulphur dioxide gas. Write chemical equation involved.



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71. E_{Cell} for the given redox reaction is 2.71 V



Calculate E_{cell} for the reaction. Write the direction of flow of current when an external opposite potential

applied is:

(i) less than 2.71 V and (ii) greater than 2.71 V



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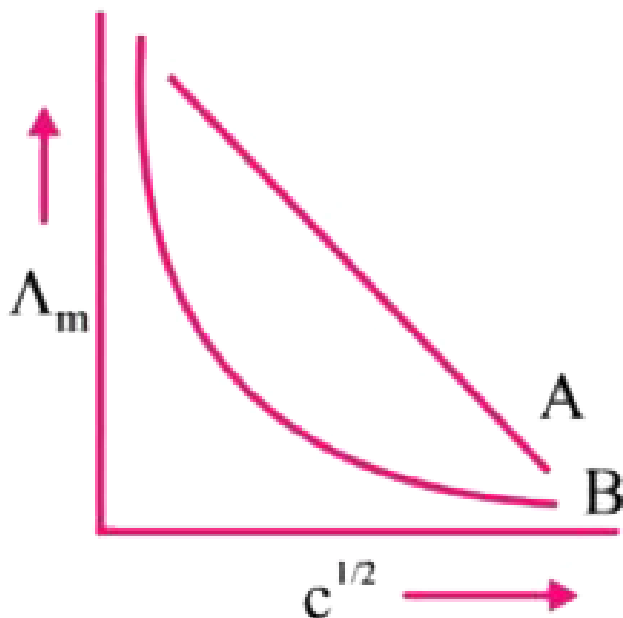
72. A steady current of 2 amperes was passed through two electrolytic cells X and Y connected in series containing electrolytes $FeSO_4$ and $ZnSO_4$ until 2.8 g of Fe deposited at the cathode of cell X. How long did the current flow? Calculate the mass of Zn deposited at the cathode of cell Y.

(Molar mass :)

$$Fe = 56 \text{ g mol}^{-1} \quad Zn = 65.3 \text{ g mol}^{-1}, \quad F = 96500 \text{ C mol}^{-1}$$

)

73. In the plot of molar conductivity (Λ_m) vs square root of concentration ($c^{1/2}$) following curves are obtained for two electrolytes A and B :



Answer the following: (i) Predict the nature of electrolytes A and B.

(ii) What happens on extrapolation of Λ° to concentration approaching zero for electrolytes A and B?

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74. How do you convert the following :

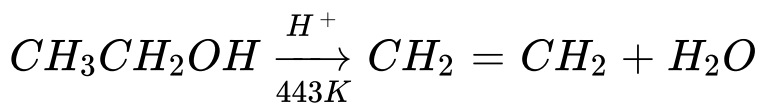
Phenol to Anisole

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75. How will you convert ethanol to propan-2-ol ?

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76. Explain the mechanism of the following reaction:



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77. Why phenol undergoes electrophilic substitution more easily than benzene?

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78. o-nitrophenol is more volatile than p-nitrophenol
it is due to

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79. Account for the following:

t-butyl chloride on heating with sodium methoxide gives 2-methylpropene instead of t-butylmethylether



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80. Write the reaction involved in the following :

Reimer-Tiemann reaction



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81. Write the reaction involved in the following :

Friedal-Crafts Alkylation of Phenol



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82. Give simple chemical test to distinguish between

Ethanol and Phenol.



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