



CHEMISTRY

BOOKS - SHARAM PUBLICATION

2020 QUESTION PAPER

Exercise

1. Natural rubber is the polymer of—

A. Acrylonitrile

B. Isoprene

C. Vinyl chloride

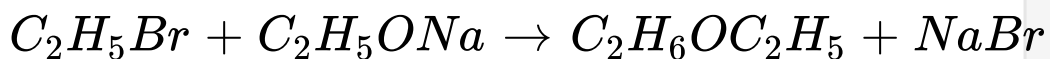
D. Chloroprene

Answer:



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2.



The name of the above reaction is

A. Riemer -Tiemann reaction

B. Aldol conensation

C. Williamson synthesis

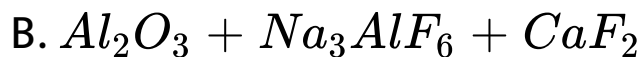
D. Kolbe 's reaction

Answer:



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3. Aluminium is extracted from alumina by electrolysis of amolten mixture of



Answer:



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4. Which class of chemical compounds is used to relieve pain ?

A. Analgesic

B. Antipyretic

C. Antiseptic

D. Tranquilizer

Answer:



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5. The formula of sulphur molecule is

A. S_2

B. S_4

C. S_8

D. S_6

Answer:



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6. The dispersed phase and dispersion medium in smoke are respectively

A. Gas and liquid

B. Liquid and gas

C. Solid and gas

D. Solid and liquid

Answer:



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7. Which of the following 0.1M aqueous solutions is likely to have the highest depression in freezing point ?

A. Na_2SO_4

B. $NaCl$

C. glucose

D. Na_3PO_4

Answer:



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8. Write the names of the vitamins, the deficiency of which causes anaemia



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9. Write the names of the vitamins, the deficiency of which damages the reproductive system both in men and women.



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10. Which noble gas mixed with oxygen is used by sea - divers for their respiration under

water ?



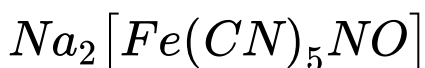
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11. Which disaccharide on hydrolysis in presence of the catalyst invertase produces glucose and fructose ?



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12. Write IUPAC name of the compound





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13. The smallest repeating unit in crystal lattice which when repeated over and over again produces the complete crystal is



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14. What is the relation between standard Gibb 's free energy and standard emf of the cell ?



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15. Write the name of the reagent that reacts with formaldehyde to give sodium formate and methyl alcohol.



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16. Match the compounds in column I with their functions in Column II correctly :

Column I**Column II**

- | | |
|-------------------------------|---------------------------|
| (a) 1% solution of phenol | (i) Preservative |
| (b) Sodium hydrogen carbonate | (ii) Artificial sweetener |
| (c) Aspartame | (iii) Antacid |
| (d) Sodium metabisulphite | (iv) Disinfectant |

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17. What happens when a mixture of calcium acetate and calcium formate is dry distilled?

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18. What is the role of limestone in the extraction of iron from red haematite?



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19. 2.75g of Na_2CO_3 is present in 200 ml of Na_2CO_3 solution. Calculate the molarity of the solution.



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20. What is Rosenmund 's reduction ? Give equation and also write the name of product.



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21. Why is electron affinity of chlorine greater than that of fluorine ?



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22. What is Tyndall effect? What is it due to?



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23. What happens when ethyl alcohol is heated with excess conc. H_2SO_4 at $160^\circ C$?



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24. What happens when SO_2 gas is passed through lime water first slowly and then in excess ?



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25. If at $25^\circ C$, the standard emf of the cell $Zn(s) | Zn^{2+} (1M) || Cu^{2+} (0.1M) | Cu(s)$ is 1.3 volt, calculate the emf of the cell.



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26. What are ionization and linkage isomerism? Give one example of each.



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27. Benzoic acid on treatment with Br_2 and $FeBr_3$ gives the compound (A), which on treatment with NH_3 gives the compound (B). The compound (B) on heating gives the compound (C). Write the structures of compounds (A), (B) and (C) in the above sequence of reactions.



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28. The boiling point of benzene is $353.2K$. When 1.8 g of a non - volatile solute was

dissolved in 90 g benzene the boiling point was raised to $354.1K$. Calculate the molecular mass of the solute. (K_b of benzene = $2.53 K kg mol^{-1}$)



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29. Discuss the mechanism of S_N2 reaction.



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30. What are addition and condensation polymerisation? Give one example of each.



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31. Write three differences between physical and chemical adsorption.



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32. What is lanthanide contraction? Write any two of its consequences.



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33. Write a note on denaturation of protein.



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34. Give three differences between crystalline and Amorphous solids.



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35. What are interhalogen compounds ? Why are these more reactive than halogens ?



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36. How can you prepare methyl amine by Hofmann bromamide reaction ? Write the action of methyl amine with $CHCl_3$ and alcoholic KOH solution .





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37. How can you prepare methyl amine by Hofmann bromamide reaction ? Write the action of methyl amine with methyl iodide ?



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38. Define molecularity and order of reaction .Drive an expression for the rate constant of a zero order reaction.



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39. The half - life period of a first order reaction is 30 minutes. How much time is required for 75% completion of the reaction ($\log 2 = 0.301$)



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40. Define specific, equivalent and molar conductance. Write their units. Derive the relation between specific conductance and

molar conductance. What is the effect of dilution on specific and equivalent conductance?



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41. The value of Λ_{eq}^{∞} for NH_4Cl , $NaOH$ and $NaCl$ are respectively, 149.74, 248.1 and 126.4 $\Omega^{-1}cm^2equiv^{-1}$. The value of Λ_{eq}^{∞} of NH_4OH is



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42. Discuss the principles involved in the preparation of ammonia by Haber's process. What happens when ammonia is heated with oxygen in presence of platinum gauze at $500^{\circ}C$.



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43. Discuss the principles involved in the preparation of ammonia by Haber's process. What happens when

ammonia is passed through copper sulphate solution ?



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44. Write the method of preparation of phenol from chlorobenzene by Dow 's process. What happens when phenol reacts with conc. H_2SO_4 .



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45. Write the method of preparation of phenol from chlorobenzene by Dow 's process. What happens when phenol reacts with acetyl chloride in presence of aqueous $NaOH$ solution ?



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