



CHEMISTRY

BOOKS - SHARAM PUBLICATION

2017 QUESTION PAPER

Exercise

1. Which kinds of isomerism are exhibited octahedral $Co(NH_3)_4Br_2Cl$?

A. Geometrical and ionization

B. Geometrical and optical

C. Optical and ionization

D. Geometrical only

Answer:



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2. Benzylchloride can be prepared from toluene by reacting with :

A. Cl_2

B. SO_2Cl_2

C. $SOCl_2$

D. $NaOCl$

Answer:



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3. Aspirin is

A. Sedative

B. Antipyretic

C. Anti - biotic

D. Antiseptic

Answer:



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4. Which amino acid has phenolic - OH group as its backbone ?

A. Glycine

B. Leucine

C. Serine

D. Tyrosine

Answer:



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5. which One of the following is a cross-linked polymer

A. Bakelite

B. Glycogen

C. Nylon

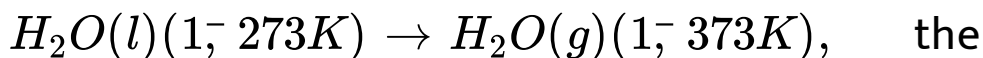
D. Polythene

Answer:



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6. For the process,



correct set of thermodynamic parameters is :

A. $\Delta G = 0, \Delta S = +ve$

B. $\Delta G = 0, \Delta S = -ve$

C. $\Delta G = +ve, \Delta S = 0$

D. $\Delta G = -ve, \Delta S = +ve$

Answer:



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7. When two reactants, A and B are mixed to give products C and D, the reaction quotient, Q at the initial stages of the reaction :

- A. is zero
- B. decreases with time
- C. is independent of time
- D. increases with time

Answer:



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8. The solubility of $Ca(OH)_2$ is $s \text{ molL}^{-1}$. The K_{sp} under the same conditions is :

A. $4s^3$

B. $3s^4$

C. $4s^2$

D. s^3

Answer:



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9. Uranium (mass number 238 and atomic number 92) emits an alpha particle. The product has mass number and atomic number respectively as :

A. 238 and 92

B. 234 and 90

C. 238 and 90

D. 236 and 90

Answer:



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10. XeF_4 and XeF_6 are expected to be

A. oxidising

B. reducing

C. unreactive

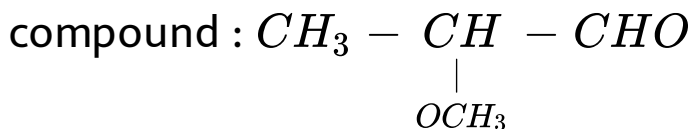
D. strongly basic

Answer:



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11. Write the IUPAC name of the following



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12. Write the unit of cell constant.



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13. What happens when nitrobenzene reacts with conc. HNO_3 in the presence of conc. H_2SO_4 ?



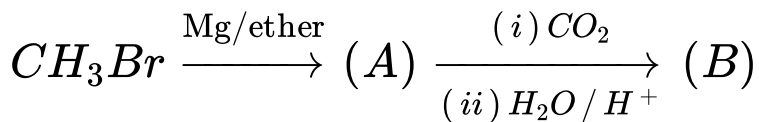
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14. Esterification does not take place between ethyl alcohol and excess H_2SO_4 at $170^\circ C$. Explain.



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15. Identify A and B in the following reaction :



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16. What is molecular formula of Concentrated hydrogen fluoride exists?



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17. Which product when Phenol undergoes oxidation with air ?



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18. If the activation energy of a reaction is low, the reaction is relatively.



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19. Fill in the blanks : For the gaseous reaction ,
 $aA + bB \leftrightarrow cC + dD$, Δn is equal to



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20. The thermal stability of the hydrides of group 16 down the group.



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21. Use EAN rule and predict the molecular formula of nickel carbonyl?



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22. How does copper metal react with $\text{HNO}_3(\text{conc})$ and the product formed is?



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23. State Le - Chatelier 's principle and explain the effect of temperature on the synthesis of NH_3 .



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24. What are pesticides ? What are different types of pesticides ? Name one of each type.



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25. What is Stephen reduction reaction? Give an example.



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26. Calculate the entropy change involved in the conversion of one mole of water at $373K$ to vapour at the same temperature. (Latent heat of vaporisation of water at this temperature , $\Delta H_{vap} = 2.257kJg^{-1}$)



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27. What is the equilibrium expression for the reaction: $P_4(s) + 5O_2(g) \rightleftharpoons P_4O_{10}(s)$



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28. The concentration of hydrogen ion in sample of soft drinks is $3.8 \times 10^{-3} M$. What is its PH?



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29. How is benzoic acid converted to Aniline ?

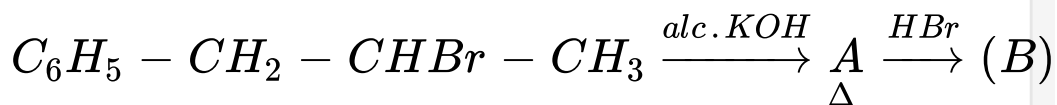


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30. What is Benzoin condensation ? Give name of the product and also give equation.

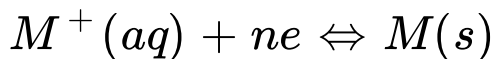
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31. Identify A and B in the following reaction :



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32. Derive the Nernst equation of electrode potential at 25°C for the electrode reaction.



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33. A compound 'A' having molecular formula $C_2H_5O_2N$, on reaction with Sn and conc. HCl gives a compound B which when treated with $NaNO_2$ and dil. HCl gave compound C having molecular formula C_2H_6O . The compound C when treated with Na metal give effervescences

and when reacts with CrO_3 give a saturated aldehyde having 2 carbon atoms. Determine the structures and names of A, B and C along with the sequence of reactions.



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34. Give one method of preparation of XeF_4 .
Mention one reaction in which it acts as an oxidising agent Give its structure



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35. How are the solvents classified on the basis of proton transfer ?



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36. If one mole of water and one mole of CO are taken in a 10 litre vessel and heated to $986^{\circ}C$, 40% of water reacts with CO as in



Calculate the equilibrium constant for the reaction at the temperature mentioned.



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37. Write note on Faraday's second law of electrolysis



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38. Write notes on :

Nuclear fission



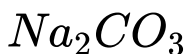
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39. Predict the nature of the aqueous solutions of the following substances



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40. Predict the nature of the aqueous solutions of the following substances



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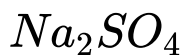
41. Predict the nature of the aqueous solutions of the following substances





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42. Predict the nature of the aqueous solutions of the following substances



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43. Predict the nature of the aqueous solutions of the following substances



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44. Predict the nature of the aqueous solutions of the following substances



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45. How do you prepare benzoic acid from n-propyl benzene



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46. How do you prepare benzoic acid from phenylcyanide



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47. How can you get benzoic acid from benzene?



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48. What is Schmidt reaction ? Write the structure of the product of this reaction .



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49. Explain Carbylamine reaction.



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50. What are soap and detergents ? How do they differ ?



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51. Do the conversion: Benzene to m-dichlorobenzene

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52. Do the conversion: Nitrobenzene to Benzamide

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53. Bring out the following conversions : Benzene to 4-Bromonitrobenzene

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