



CHEMISTRY

BOOKS - USHA CHEMISTRY (ODIA ENGLISH)

PREVIOUS YEAR QUESTION 2020

Previous Year Question

1. The general electronic configuration of lanthanoids is _____



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2. When the value of van't Hoff factor is less than one, this shows that the solute undergoes _____ in the solution.



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3. Which product is obtained when methyl cyanide is reduced by sodium and ethyl alcohol?



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4. What are the monomers of Nylon 6,6?



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5. Write the names of two oligosaccharides.



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6. how many atoms are present per unit cell of a body centred cubic crystal ?



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7. Name the catalyst used in the contact process of manufacture of H_2SO_4



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8. The osmotic pressure of a solution containing 50 g of a solute in one litre of solution at 300K is 20.5 atmosphere. Calculate the molecular mass of the solute.



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9. What are bidentate ligands? Give an example.



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10. What are freons ? What are their harmful effects on the environment ?



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11. Answer any seven questions of the following:

$CuSO_4$ solution is electrolysed for 20 minutes with a current of 3 amperes. What mass of copper will be deposited at the cathode?



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12. What happens when KI solution is added to acidified $K_2Cr_2O_7$ solution?



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13. What are antioxidants ? Give two examples.



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14. Under which condition the rate of reaction becomes equal to the specific reaction rate ?



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15. Write the expressions for the rate of reaction of $PCl_5 \rightarrow PCl_3 + Cl_2$



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16. How does Schottky defect arise ? In which type of ionic compounds does this defect arise ?



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17. What happens when yellow phosphorus is heated with dilute NaOH solution?



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18. Explain what are ionic and covalent solids. Give one example of each.



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19. What is the action of chlorine with (i) cold and dilute NaOH and (ii) hot and concentrated NaOH ?



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20. Discuss Reimer-Tiemann reaction.



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21. Discuss the structure of $[Co(NH_3)_6]^{3+}$ ion on the basis of valence bond theory. Whether it is an inner orbital or outer orbital complex ion ?



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22. Elucidate the differences between soaps and detergents.



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23. Answer any seven questions of the following

Discuss van Arkel Boer method for ultrapurification of zirconium.



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24. The rate constants of a reaction at 500 K and 700 K are 0.025 sec^{-1} and 0.075 sec^{-1} respectively. Calculate the energy of activation of the reaction. ($R = 8.314 \text{ JK}^{-1}$ and $\log 3 = 0.447$)



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25. Write a note on hydrogen-oxygen fuel cell.



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26. What do you mean by biodegradable and non biodegradable polymers ? Give an example of a synthetic biodegradable polymer.



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27. An organic compound having molecular formula C_3H_7Br on treatment with aqueous KOH solution gave the compound (A). When the vapour of the compound (A) was passed over red hot copper at $300^\circ C$ compound (B) was formed. The compound (B) on treatment with I_2 and dil. NaOH, formed a yellow solid (C). Identify the compounds A,B and C.



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28. State Raoult's law. How is the molecular mass of a solute determined from lowering of vapour pressure measurement ?



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29. A solution contains 72% water and 28% methyl alcohol. Calculate the mole fraction of each component in the solution.



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30. How is acetic acid prepared from methyl magnesium bromide ?



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31. An acid is (i) reduced by lithium aluminium hydride (ii) treated with ammonia and the resulting product is heated at high temperature ?



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32. Name four factors affecting adsorption of gases by solids.



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33. What are enzyme catalysts? Give a reaction involving an enzyme catalyst.



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34. What are oil in water and water in oil type of emulsions? Give one example of each type.



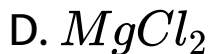
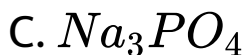
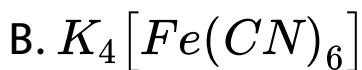
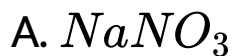
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35. Starting from nitrobenzene how will you prepare benzene diazonium chloride ? Give the method of synthesis of (i) p-hydroxy azobenzene and (ii) fluorobenzene from benzene diazonium chloride.



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36. Which of the following electrolytes is most effective in the coagulation of gold sol ?



Answer:



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37. Sulphur dioxide gas does not act as

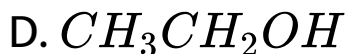
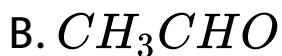
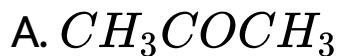
- A. oxidising agent
- B. reducing agent
- C. Dehydrating agent
- D. Bleaching agent

Answer:



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38. The compound that reduces Tollens' reagent is



Answer:



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39. Which of the following solutions of KCl will have highest specific conductance ?

A. 0.0001N

B. 0.001N

C. 0.01N

D. 1N

Answer:



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40. Which of the following noble gases is abundant in air ?

A. He

B. Ne

C. Ar

D. Kr

Answer:



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41. Which base is present in RNA but not in DNA?

A. Uracil

B. Cytosine

C. Guanine

D. Thymine

Answer:



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42. Which one is the ore of copper ?

A. Haematite

B. Chalcopyrite

C. Dolomite

D. Bauxite

Answer:



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