

CHEMISTRY

BOOKS - MODERN PUBLICATION

SAMPLE PAPER 2019

Exercise

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



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



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3. Write the name of two oligosaccharides.



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



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



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6. 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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7. The general electronic configuration of lanthanoids is _____



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8. Which one is the ore of copper ?

A. Haematite

B. Chalcopyrite

C. Dolomite

D. Bauxite

Answer:



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

A. Uracil

B. Cytosine

C. Guanine

D. Thymine

Answer:



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

A. He

B. Ne

C. Ar

D. Kr

Answer:



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

A. 0.0001 N

B. 0.001 N

C. 0.01 N

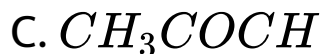
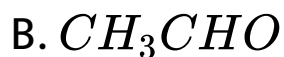
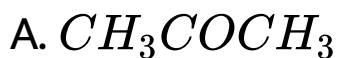
D. 1.0 N

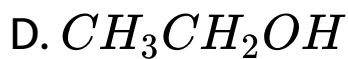
Answer:



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12. The compound that reduces Tollens' reagent is





Answer:



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13. Sulphur dioxide gas does not act as

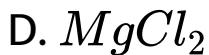
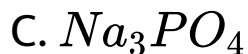
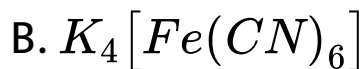
- A. Oxidising agent
- B. Reducing agent
- C. Dehydrating agent
- D. Bleaching agent

Answer:



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



Answer:



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



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16. 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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17. Answer any seven questions of the following

Discuss van Arkel Boer method for ultrapurification of zirconium.



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



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



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21. Discuss Reimer-Tiemann reaction.



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22. Elucidate the differences between soaps and detergents.



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23. 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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24. Answer the following

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



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25. Answer any seven questions of the following:

What are bidentate ligands? Give an example.



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26. 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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27. What are antioxidants ? Give two examples.



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



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29. Answer the following:

Match the diseases of Group (A) with the

vitamins of Group (B) correctly:

	Group (A)		Group (B)
(a)	Xerophthalmia	(i)	Vitamin-D
(b)	Scurvy	(ii)	Vitamin-K
(c)	Coagulation of blood	(iii)	Vitamin-A
(d)	Rickets	(iv)	Vitamin-C



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30. 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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31. What are freons ? What are their harmful effects on the environment ?



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



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33. Answer any seven questions of the following:

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

Write the expressions for the rate of reaction of



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



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



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



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



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39. Describe the Siemen's method of preparation of Ozone. How does it react with PbS.



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



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



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



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