



CHEMISTRY

BOOKS - SHARAM PUBLICATION

SOLVED PAPER 5

Exercise

1. The number of tetrahedral voids in the unit cell of a face centred cubic lattice of similar atoms is

A. 4

B. 6

C. 8

D. 12

Answer:



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2. Which of the following is an ore of iron ?

A. Dolomite

B. Malachite

C. Haematite

D. Bauxite

Answer:



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3. Aspirin is used as/to

A. Hypnotic

B. Antiseptic

C. Prevent heart attack

D. Traquilizer

Answer:



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4. In the halogen family, the oxidising action increases in the order.

A. $F < Cl < Br < I$

B. $Cl < Br < I < F$

C. ItFltClItBr

D. ItBr ItClItF

Answer:



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5. The number of Faradays of electricity required for the conversion of one mole of $M_nO_4^-$ to one mole of M_n^{2+} is

A. 1F

B. 3F

C. 7F

D. 5F

Answer:



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6. Benzyl amine reacts with nitrous acid to form

A. azobenzene

B. benzyl alcohol

C. benzene

D. phenol

Answer:



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7. Which of the following process is responsible for the formation of delta at the place where rivers meet the sea?

A. Emulsification

B. Colloid formation

C. Coagulation

D. peptisation

Answer:



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8. What is the electronic configuration of first row transition elements?



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9. Name the flux used to remove the impurity

FeO .



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10. What is the relation between electrochemical equivalent and chemical equivalent of Zinc?



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11. Why hydrogen sulphide cannot be dried by conc. H_2SO_4 ?



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12. Under which condition a 5% solution of glucose will be isotonic with a 4% solution of an organic substance at same temperature ?



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13. When an aldehyde is treated with Zinc amalgam and HCl a hydrocarbon is formed .What is the name of this reaction ?



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14. What is Sandmeyer's reaction ?



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15. What is Cannizzaro's reaction? Give equation.



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16. The half - life of a radioactive element is 69.3 days. Find out the time taken for a given sample to the element to be reduced to $\frac{1}{10^{th}}$ of its initial activity.



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17. Why aryl halides are less reactive than alkyl halides?



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18. What is Schottky defect?



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19. Two electrolytic cells containing silver nitrate solution and dilute sulphuric acid were

connected in a series. A steady current of 2.5 A was passed through them till 1.078 g of silver was deposited ($\text{Ag} = 107.8 \text{ g / mol}$)

(a) How much electricity was consumed?

(b) What is the weight of oxygen gas liberated during the reaction?



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20. Arrange the following in order of their increasing reactivity with HCN.

CH_3CHO , CH_3COCH_3 , HCHO , $\text{C}_2\text{H}_5\text{COCH}_3$



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21. How will you convert nitrobenzene to acetanilide



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22. What is coagulation?



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23. Discuss contact process for manufacture of



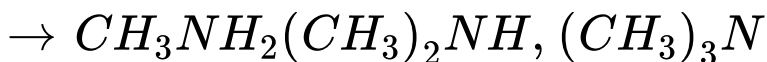
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24. What are soaps and detergents? What are the disadvantage of detergent?



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25. Arrange the following in increasing order of their base strength in aqueous solution with _____ reason _____.



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26. How is the molecular mass of a solute determined by osmotic pressure measurement?



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27. Discuss the splitting of d-orbitals of the metal ion in an octahedral field. What do you mean by Crystal field stabilization energy?



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28. What are interstitial compounds? Write their characteristics.



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29. Phosphorus shows greater tendency for catenation than nitrogen. Give examples.



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30. Write notes on Antacids



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31. Write four differences between lyophilic and lyophobic colloids.

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32. How will you differentiate between 1° , 2° and 3° alcohols by Victor Meyer's test.

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33. Starting from acetic acid how will you prepare acetone? What happens when acetone reacts with CH_3MgBr and the resulting addition product is hydrolysed by dil acid?



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34. Give one test to distinguish between acetaldehyde and acetone.



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35. How will you prepare methyl amine starting from nitromethane?



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36. How will you prepare methyl amine starting from acetamide?



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37. What happens when methyl amine is treated with methyl bromide.



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38. What happens when methyl amine is treated with

$CHCl_3$ and KOH



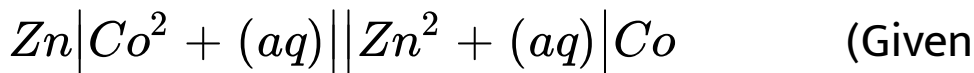
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39. Describe the construction and working of Daniell cell.



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40. Write the cell reaction and calculate the emf of the Cell



$$E_{\text{Zn} | \text{Zn}^{2+}}^{\circ} = + 0.76\text{V} \quad \text{and}$$

$$E_{\text{Co} | \text{Co}^{2+}}^{\circ} = + 0.28\text{V}.$$



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41. What is the difference between a galvanic cell and electrolytic cell?



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42. How will you prepare ethylamine from Propanamide



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43. Write notes on

Hinsberg's method for distinction

1° , 2° and 3° amines?



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44. Arrange the following amines in the decreasing order of their base strength with reason CH_3NH_2 , $C_6H_5NH_2$, $(CH_3)_2NH$



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45. From Arrhenius equation derive the relation $\log\left(\frac{k_2}{k_1}\right) = \frac{Ea}{2.303R} \left(\frac{T_2 - T_1}{T_1T_2}\right)$ where the symbols have their usual meanings.



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46. Define activation energy. If the activation energy for the forward reaction is 360kJmol^{-1} and that for the backward reaction is 500kJmol^{-1} , what is the enthalpy change for the reaction?



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