



CHEMISTRY

BOOKS - SHARAM PUBLICATION

2015 QUESTION PAPER

Exercise

1. Amino acids are :

- A. Acidic
- B. Alkaline
- C. Amphoteric
- D. Neutral

Answer:



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2. Which one of the following compound is a vitamin ?

A. Sucrose

B. Ascorbic acid

C. Savlon

D. Alanine

Answer:



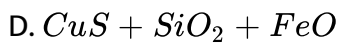
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3. The composition of 'Copper Matte' is :

A. $FeSiO_3$

B. $FeS + SiO_2$

C. $FeS + Cu_2S$



Answer:

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4. Acid hydrolysis of ethyl acetate is

- A. Zero order
- B. First order
- C. Second order
- D. Third order

Answer:

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5. Which one of the following will not react with ammonical silver nitrate solution ?

- A. Acetylene
- B. Acetone
- C. Acetaldehyde
- D. Formic acid

Answer:



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6. Which one of the following is a natural polymer?

- A. Protein
- B. Teflon
- C. Nylon
- D. Terylene

Answer:



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7. Methyl - Ketone is identified by the reagent :

A. Tollens' reagent

B. I_2 / KOH

C. Fehling 's solution

D. Schiff's reagent

Answer:



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8. pH of $0.0001(M) NaOH$ solution is :

A. 3

B. 7

C. 10

D. 14

Answer:



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9. Reaction between primary amine, $CHCl_3$ and alc. KOH is called

A. Aldol condensation

B. Friedel - Craft reaction

C. Cannizzaro 's reaction

D. Carbylamine reaction

Answer:



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10. Treatment of phenol with Br_2 / H_2O yields :

- A. o- bromo phenol
- B. m- bromo phenol
- C. 2,4,6 - tribromo phenol
- D. 1,3,5- tribromo- phenol

Answer:

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11. Fill in the blanks : An electron donating substituent in benzene fixes the incoming electrophile to Position.

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12. Mercurochrome is used as an—.

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13. Sodium or potassium salts of higher fatty acids are called

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14. Oxidation of ethyl benzene with alkaline $KMnO_4$ gives

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15. For a spontaneous reaction Gibb's free energy change is always.....

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

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17. Write the IUPAC name of $K_2[CrCO(CN)_4]$

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18. What is the conjugate acid of NH_2^- ?

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19. Write the structural formula of acetone sodium bisulphite.

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20. Name the linkage present in protein .

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21. Write the chemical test to distinguish between formic acid and acetic acid.

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22. Why hydrogen bromide cannot be prepared by reacting sodium bromide with concentrated H_2SO_4 ?

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23. How is acetone converted to mesityl oxide ?

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24. Correctly match List -I with List -II:

List - I

A. Tetracycline

B. Buna-S

C. Maltose

D. Paracetamol

List - II

1. Carbohydrate

2. Antipyretic

3. Polymer

4. Antibiotic

5. Antiseptic



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25. What is Sandmeyer's reaction ?



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26. C-11 is a radioisotope of carbon. Its half life is 20 minutes. What fraction of the initial number of C-11 atoms in a sample will have decayed away after 80 minutes ?



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27. Calculate the molar solubility 'S' of Barium phosphate in terms of its solubility product K_{sp} .

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28. Why do transitional elements form complex compounds ?

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29. What happens when SO_2 is passed through sulphuretted hydrogen dissolved in water? Give equation.

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30. What type of hybridisation takes place in xenon during the formation of XeF_4 ? What is its shape ?



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31. Write the structure formulae of all the isomeric amines with molecular formula C_3H_9N and classify them. Why dimethyl amine is more basic than methyl amine?

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32. What is coupling reaction ? Give an example.

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33. For a 0.01(N) solution of sodium acetate, calculate hydrolysis constant

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34. For a 0.01(N) solution of sodium acetate, calculate degree of hydrolysis

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35. For a 0.01(N) solution of sodium acetate, calculate pH. Given for acetic acid $K_a = 1.9 \times 10^{-5}$.

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36. What are the different types of carbohydrates? Give one example of each.

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37. What are the interhalogen compounds? Give examples.

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38. How is fluorine prepared by Dennis method?

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39. Write short notes on : Werner's theory of co-ordination compounds.

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40. The co ordination complex $[Cu(OH_2)_6]^{2+}$ has one unpaired electron . According to valence bond theory which of the following statements are true ?

(i) The complex is octahedral , (ii) The complex is an outer orbital complex , (iii) The complex is d^2sp^3 hybridised, (iv) The complex is diamagnetic , (v)

The co- ordination number is 6

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41. Which type of ligand is EDTA.

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42. How is phenol prepared from diazonium salt?

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43. What is Reimer-Tiemann reaction?

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44. How is mono- carboxylic acid prepared from ester ? How does it react with sodium bicarbonate ?

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45. Arrange the following acids in their increasing order of acidity with reasons.

HCOOH

CH_3COOH

C_6H_5COOH

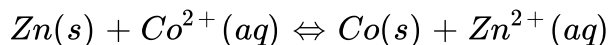
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46. State Le- Chatelier's principle. Explain the principle with reference to its application to the synthesis of ammonia by Haber's process.

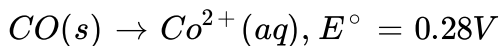
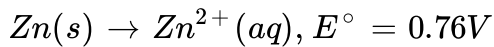
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47. Describe the construction and working of Daniell cell.

The following reaction occurs in a cell

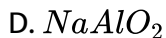


Write the electrode reaction and find out the emf of the cell. Given



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48. Which of the following is a constituent of slag ?



Answer:

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49. The oils from which soaps are prepared belong to a class of compounds known as

A. Amine

B. Hydrocarbon

C. Alcohol

D. Ester

Answer:

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50. Which of the following is basic?

A. $C_6H_5NH_2$

B. C_6H_5OH

C. CH_3COCH_2

D. C_6H_6

Answer:

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51. Which of the following type of reactions occur at cathode during electrolysis ?

- A. oxidation
- B. reduction
- C. dissociation
- D. association

Answer:



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52. Which of the following radioactive radiation deviate more from its normal direction by the application of magnetic field ?

- A. α ray
- B. β ray

C. γ - ray

D. x - ray

Answer:



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53. Acid hydrolysis of ethyl acetate is

A. Zero order

B. First order

C. Second order

D. Third order

Answer:



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54. Which of the following is a transition element ?

A. *Al*

B. *Mg*

C. *K*

D. *Mo*

Answer:



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55. Which of the following is the IUPAC name of $K_3[Fe(CN)_6]$?

A. Potassium hexacyano ferrate (II)

B. Potassium hexacyano ferrate (III)

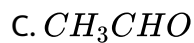
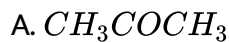
C. Potassium ferri cyanide

D. Potassium ferro cyanide

Answer:

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56. The compound that gives aldol condensation with dil $NaOH$ is :



Answer:

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57. Acetyl chloride cannot be obtained by the reaction of acetic acid with



B. $SOCl_2$

C. Cl_2

D. PCl_3

Answer:

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58. What is the relation between half- life period and disintegration constant ?

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59. What metals are present in bronze ?

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60. What is the PH of 0.001(N) HCl ?



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61. What is the oxidation number of chromium in $K_2Cr_2O_7$ and nitrogen in N_2H_4 ?



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62. Write the electronic configuration of krypton. Why is it inert ?



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63. Fill in the blanks : And are the two analgesic drugs.



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64. Phenol is acidic because ___ is more stable than ___



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65. Fill in the blanks : For an exothermic reaction ΔH is

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66. Fill in the blanks : The graphic formula of m - xylene is

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67. The precipitate formed when an aldehyde react with Fehling solution is _____.

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68. Trichloro acetic acid is a stronger acid than acetic acid. Give reason.

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69. Electron affinity of fluorine is less than that of chlorine Why ?

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70. Sodium acetate solution is alkaline. Give reason.

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71. Acetamide is treated with sodium nitrite and dil HCl at low temperature. Write the reaction.

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72. What are organometallic compounds? Give two examples.

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73. Name two Rhodenticides and two antiseptics.

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74. The half- life period of ${}_{53}^{125}I$ is 60 days. What percentage of the original radioactivity would be present after 180 days ?

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

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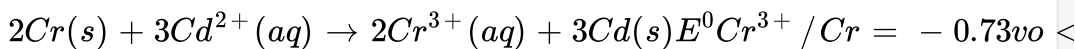
76. The specific conductance of a 0.12N solution of an electrolyte is $2.4 \times 10^{-2} \text{ ohm}^{-1} \text{ cm}^{-1}$ Calculate its equivalent conductance.

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77. Define Bond energy.

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78. Represent the cell and calculate the Standard e.m.f. of the cell having following cell reaction:



and $E^0 Cd^{2+} / Cd = -0.40 \text{ volt}$

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79. Write the conjugate base - of $NH^+ _4$ and $HCO^- _3$.

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80. Write the structure formulae of all the isomeric amines with molecular formula C_3H_9N and classify them. Why dimethyl amine is more basic than methyl amine?

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81. Write the equation for the reaction between Cl_2 and dil. NaOH solution.

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82. Discuss with equation the reaction of Cl_2 with hot conc. $NaOH$ solution.

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83. What is radio artificial radioactivity / Give some examples of artificial radioactivity involving :
alpha particles.

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84. What is radio artificial radioactivity / Give some examples of artificial radioactivity involving :
neutrons

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85. Explain green house effect.

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86. Write a note on Common ion effect.



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87. Describe any three applications of electrolysis.

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88. Define a Galvanic cell. Give the diagrammatic representation of a typical galvanic cell with cell reaction.

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89. Write short notes on :

Le - Chatellier 's principle.

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90. Write short notes on :

activation energy

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91. Write short notes on :

Carbon dating

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92. How is benzene diazonium chloride prepared from aniline ? How are the following compounds prepared from it ?

Phenol.

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93. How is benzene diazonium chloride prepared from aniline ? How are the following compounds prepared from it ?

Iodobenzene

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94. How is acetaldehyde converted to acetone ?

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95. What are polymers ? Give one example of each of addition and condensation polymer ?

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96. What are antibiotics ? Give two example of this drug.

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97. Give the principle of manufacture of H_2SO_4 by contact process.

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98. Write short notes on : Werner's theory of co-ordination compounds.

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99. Name the elements of Group - 16 of the periodic table with their electronic configuration and discuss about their oxidation states and oxides.

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