



CHEMISTRY

BOOKS - MODERN PUBLICATION

SAMPLE PAPER 2014

Exercise

1. The coordination number of cobalt in $[Co(NH_3)_3Cl_3]$ is

A. 3

B. 2

C. 4

D. 6

Answer: D

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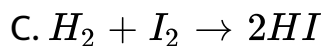
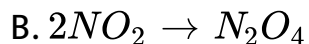
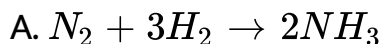
2. Considering entropy as parameter in the following chemical reaction at $298K$: $x(g) + y(g) = xy(l)$

- A. ΔS is negative
- B. ΔS is positive
- C. ΔS is zero
- D. ΔS cannot be predicted

Answer:

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3. In which of the following gaseous reactions $K_P = K_C$?



Answer:

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4. Which of the following is an ore of copper?

A. Bauxite

B. Dolomite

C. Chalcopyrite

D. Haematite

Answer: C



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

A. $F < Cl < Br < I$

B. $Cl < I < Br < F$

C. $I < F < Cl < Br$

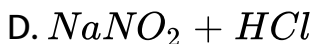
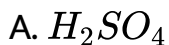
D. $I < Br < Cl < F$

Answer: D



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6. Acetamide is converted to methylamine when it is heated with—



Answer: B



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7. Which of the following is not addition polymer ?

A. polythelene

B. Teflon

C. Bakelite

D. PVC

Answer: C



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8. The electrophile in the nitration of benzene is

A. NO_2^-

B. NO^+

C. NO_2^+

D. NO^-

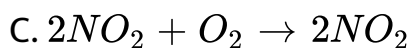
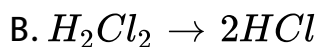
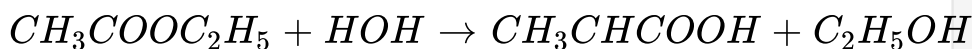
Answer:



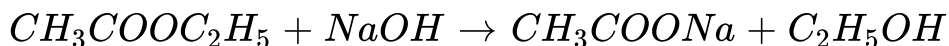
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9. Which of the following reaction is a zero order reaction?

A.



D.

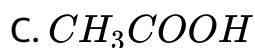
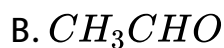
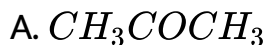


Answer: B



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10. Calcium acetate on heating gives -



Answer: A



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11. Which halogen shows only one oxidation number in its compounds ?



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12. Give the relationship between chemical equivalent and electrochemical equivalent of an element?

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13. Write the IUPAC name of $K_4[Fe(CN)_6]$.

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14. What is the pOH of $0.001(M)NaOH$ solution ?

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15. What is the unit of rate constant of the first order reaction?

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16. Fill in the blanks : ${}^6_{12}\text{C} + {}^2_4\text{He} \rightarrow {}^8_{14}\text{O} + \dots$

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

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18. Complete the following reaction and name the products formed $C_6H_5NH_2 + HNO_2 + HCl \xrightarrow{273-278K} \dots + \dots$

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19. Natural rubber is the polymer of—

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20. Electrophilic substitution in phenol takes place at _____ position.

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21. How many α and β particles are emitted during the transformation of ${}_{90}^{228}\text{Th}$ to ${}_{86}^{216}\text{Rn}$?

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22. Why hydrofluoric acid is the weakest of all the halogen acids?

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23. What is galvanic cell? Give an example.

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24. Why $FeCl_3$ solution is acidic ?



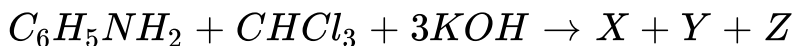
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25. Define Bond energy.



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26. Identify X, Y and Z and name the reaction.



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27. Define antiseptics. Give two name of antiseptic.



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28. Match the following columns

List – I

A. Crocin

B. Surf

C. Bakelite

*D. Zinc phosphide

List – II

1. Polymer

2. Rhodenticide

3. Antipyretic

4. Detergent

5. Insecticide

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29. How Benzene can be converted to Benzoic acid ?

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30. Explain - why methylamine is a stronger base than aniline ?

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31. What is the action of ozone on acidified ferrous sulphate?
Give equation.

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32. Difference between double salt and complex salt.

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33. Explain Friedel - Craft reaction with two examples.

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34. What is packing fraction ? How it is related to stability of nuclei ?

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35. Which type of hybridisation takes place in xenon during formation of XeF_2 ? What is its shape ?

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36. What are essential and nonessential amino acids ? Give two examples of essential amino acids.

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37. Why are most of the transition metal compounds are paramagnetic ?

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38. Explain Group displacement law with suitable example.

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39. Give the principle of extraction of iron from one of its ore.

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40. Describe a method of preparation of ozone.

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41. Explain with equation how does ozone react with
Hydrogen peroxide

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42. How benzenediazonium chloride is prepared from aniline ?

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43. Starting from benzenediazonium chloride how the following can be prepared ?

Chlorobenzene

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44. Write with equation what happens when : a mixture of calcium acetate and calcium formate is heated.

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45. Write with equation what happens when : Phenyl magnesium bromide in ether is treated with carbon dioxide and the product is hydrolysed with dilute acid.

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46. Write with equation what happens when : Toluene is treated with chromylchloride in carbon tetrachloride and on subsequent treatment with water.

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47. State and explain Hess's law.

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48. Define conductance, specific conductance and equivalent conductance.

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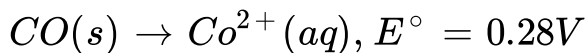
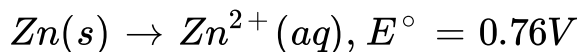
49. Describe the construction and working of Daniell cell.

The following reaction occurs in a cell



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

Given



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Problem

1. Calculate the heat of formation of benzene given that the standard heat of combustion of benzene is - 3266 kJ and standard heat of formation of $CO_2(g)$ and $H_2O(l)$ are - 393.1 kJ and - 286 kJ respectively.



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