



CHEMISTRY

BOOKS - KALYANI CHEMISTRY (ENGLISH)

SAMPLE QUESTIONS PAPER 2

Questions

1. And Are functional isomers.



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2. Sulphur is used as and



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3. Fill in the blanks by choosing the appropriate word/words from those given in the brackets:

(aromatic oxide, sp^3d^2 , octahedral, minimum, Ferromagnetism, alkyl halide, ferrimagnetism decreases, sp^3d , pyramidal, maximum,

increasing, aromatic hydride)

Q. Degree of dissociation of a weak electrolyte is _____proportional to the _____of its molar concentration.



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4. Fill in the blanks choosing appropriate words given in brackets :(Sodium chloride, Caesium chloride, copper, diamond, graphite, ions, atoms, close, 74%, 68%.

Both cop and hcp are packings and

occupy about % of the available space.



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5. In the extraction of copper from its sulphide ore, the metal is formed by the reduction of Cu_2O with _____

A. FeS

B. CO

C. Cu_2S

D. SO_2

Answer:



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6. Phenol can be distinguished from ethanol by the reactions with..... .

A. Sodium

B. $NaOH / I_2$

C. Neutral $FeCl_3$

D. Br_2 / H_2O

Answer:



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7. Reaction of $C_6H_5CH_2Br$ with aqueous sodium hydroxide follows_____.

A. S_N^1 reaction

B. S_N^2 reaction

C. Any of the above two depending upon the temperature of the reaction.

D. Saytzeff rule

Answer:



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8. Of the following terms used for denoting concentration of a solution the one which does not get affected by temperature is :

A. Molarity

B. Molality

C. Normality

D. Formality

Answer:



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9. Match the following



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10. How does $K_2[PtCl_4]$ gets ionized when dissolved in water? Will it form precipitate when $AgNO_3$ solution is added to it? Give a reason for your answer.



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11. Arrange the following compounds in the ascending order of their basic strength and

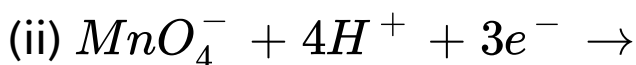
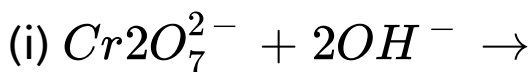
give reasons for your answer :

Methylamine, Aniline, Ethylamine, Diethyl ether



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12. Complete the following equation :



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13. Albumins are the most abundant proteins in blood. At $25^{\circ}C$, 3.5 g of albumin in 100 ml of water produces an osmotic pressure of 0.014 atm. What is the molecular weight of albumin?



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14. List any two factors that influence the rate of chemical reaction. Indicate whether the rate

constant of the reaction is dependent or independent on these factors.



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15. What are antiseptics ? Give an example.



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16. Why is use of aspartame limited to cold foods and drinks ?



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17. In a first order reaction, 10% of the reactant is consumed in 25 minutes. Calculate:

The half life of the reaction.



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18. In a first order reaction, 10% of the reactant is consumed in 25 minutes. Calculate :

(1) The half-life period of the reaction.

(2) The time required for completing 87.5% of the reaction.



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19. Give chemical test to distinguish between the following pair of compounds: Benzyl chloride and chlorobenzene.



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20. How can the following conversions be brought about :

Methyl chloride to acetone.



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21. What do you observe when glucose solution is heated with Tollen's reagent?



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22. Account for the following:

The boiling points of alcohols decrease with increase in branching of the alkyl chain. It will start from new line.



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23. Why do phenols not give protonation reactions readily?



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24. Write the structures of three ethers with molecular formula $C_4H_{10}O$.



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25. 40% of a first order reaction is completed in 50 minutes. How much time will it take for the completion of 80% of this reaction?



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26. The molecular weights of sodium chloride and glucose are determined by the depression of freezing point method. As compared to their theoretical molecular weights, what will be their observed molecular weights when determined by the above method ? Justify your answer.



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27. What are semiconductors ? What is the effect of increasing temperature on the conductivity of a semiconductor ?



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28. What are F-centres in an ionic crystal ?



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29. Explain the following :

(a) Same substance can act both as colloids and crystalloids.

(b) Artificial rain is caused by spraying salt over clouds.



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30. Explain the following:

Out of $BaCl_2$ and KCl which one is more

effective in causing coagulation of a negatively charged colloidal sol? Give reason.



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31. The cryoscopic constant of water is $1.86 \text{ K mol}^{-1} \text{ kg}$. An aqueous solution of cane sugar freezes at -0.372°C . Calculate the molality of the solution.



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32. Name the coordination compound used for the following:

Treatment of cancer.

(ii) Treatment of lead poisoning.



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33. State the hybridization and magnetic property of $[Fe(CN)_6]^{3-}$ ion according to the valence bond theory.



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34. How will you obtain pure potassium permanganate ($KMnO_4$) crystals from its ore, pyrosulfite? Give the steps involved and the reactions.



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35. Conversion of Aniline into chlorobenzene



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36. How would you account for the following :

(i) Among lanthanoids , Ln(III) compounds are predominant , However, occasionally in solutions or in solid compounds , +2 and +4 ions are also obtained .

(ii) The $E_{M^{2+} / M}^{\circ}$ for copper is positive (0.34V) . Copper is the only metal in the first series of transition elements showing this behaviour .

(iii) The metallic radii of the third (5d) series of transition metals are nearly the same as those of the corresponding members of the second series .



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37. Write chemical reactions taking place in the extraction of zinc from zinc blende.



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38. Mention the reaction occurring at (i) anode, (ii) cathode, during working of a mercury cell. Why does the voltage of a mercury cell remain constant during the operation?



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39. 0.3605 g of a metal is deposited on the electrode by passing 1.2 amperes of current for 15 minutes through its salt solution. The atomic weight of the metal is 96. What is the valency of the metal ?



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40. State the hybridization and magnetic property of $[Fe(CN)_6]^{3-}$ ion according to the valence bond theory.



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41. How is pure ozone obtained from ozonised oxygen?



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42. For the molecule XeF_2 :

Draw the structure of the molecule indicating the lone pairs.



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43. (i) Why could fluorine not be prepared for a long time from HF and metal fluorides either by electrolysis or by any chemical reaction ?

(ii) Describe the modern method for the preparation of fluorine by giving:

(a) Materials used in the construction of the cell.

(b) Electrolyte used.

(c) Electrode reactions.



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44. Write balanced chemical equations for the following reactions with acidified potassiumpermanganate solution.

(A) Oxalic acid is treated with acidified potassium permanganate solution.

(B) Benzoic acid is treated with a mixture of concentrated nitric acid and concentrated sulphuric acid.

(C) Methyl magnesium iodide is treated with carbon dioxide and the product is hydrolysed in acidic medium.



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45. Write the relevant equation to convert acetic acid to acetone.



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46. How can the following conversion be brought about:

(A) acetic acid to methyl cyanide.

(B) acetic acid to methane?



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47. Give one chemical test to distinguish between the following pairs of compound:

Formic acid and acetic acid.



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