



CHEMISTRY

BOOKS - FULL MARKS CHEMISTRY

(TAMIL ENGLISH)

SAMPLE PAPER-8

Part I

1. Wolframite ore is separated from tinstone
by the process of

A. Smelting

B. Calcination

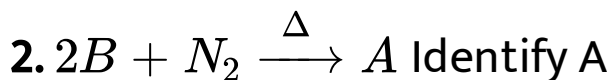
C. Roasting

D. Electromagnetic separation

Answer:



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A. BN_3

B. B_3N

C. (BN_3)

D. BN

Answer:

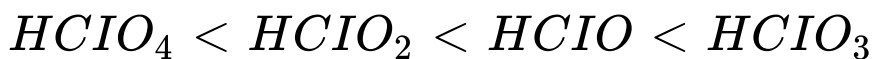


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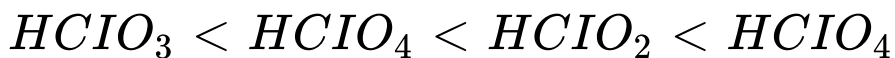
3. Among the following the correct order of acidity is

A. $HClO_2 < HClO < HIO_3 < HClO_4$

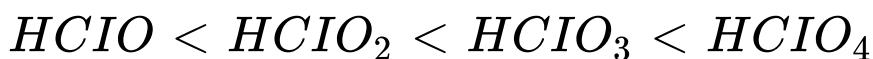
B.



C.



D.



Answer:



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4. Which of the following transition metal is present in Vitamin B_{12} ?

A. Cobalt

B. Platinum

C. Copper

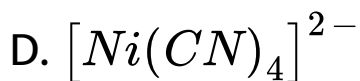
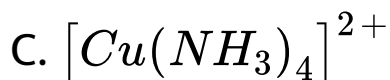
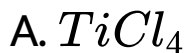
D. Iron

Answer:



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5. A magnetic moment of 1.73BM will be shown by one among the following



Answer:



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6. For a first order reaction, the rate constant is 6.909min^{-1} , the time taken for 75% conversion in minutes is

A. $\left(\frac{3}{2}\right)\log 2$

B. $\left(\frac{2}{3}\right)\log 2$

C. $\left(\frac{3}{2}\right)\log\left(\frac{3}{4}\right)$

D. $\left(\frac{2}{3}\right)\log\left(\frac{4}{3}\right)$

Answer:



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7. The pH of 10^{-5} M KOH solution will be

A. 9

B. 5

C. 19

D. none of these

Answer:



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8. The Lead storage battery is used in

A. Pacemakers

B. automobiles

C. electronic watches

D. flash light

Answer:



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9. The coagulation values in millimoles per litre of the electrolytes used for the coagulation of As_2S_3 are given below

(I) $(NaCl) = 52$

(II) $(BaCl_2) = 0.69$

(III) $(MgSO_4) = 0.22$

The correct order of their coagulating power is

A. $III > II > I$

B. $I > II > III$

C. $I > III > II$

D. $II > III > I$

Answer:



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Part ii

1. Carbon monoxide is more effective reducing agent than carbon below 983 k but, above this temperature, the reverse is true -Explain.



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2. Mention the uses of the potash alum.



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3. Why Gd^{3+} is colourless ?



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4. Ionic solids conduct electricity in molten state but not in solid state. Explain.



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5. What are Lewis acids and bases? Give two example for each.



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6. NH_3 , CO_2 are readily adsorbed where as, H_2 , N_2 are slowly adsorbed. Give reason.



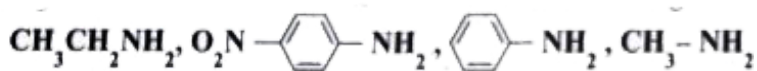
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7. Alcohol can act as Bronsted base. Prove this statement.



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8. Arrange the following in decreasing order of basic strength



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9. How are biopolymers more beneficial than synthetic polymers?



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Part Iii

1. Explain Aluminothermic process.



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2. Give a reason to support that sulphuric acid is a dehydrating agent.

A double salt which contains fourth period alkali metal (A) on heating at 500K gives (B).

Aqueous solution of (B) gives white precipitate with $BaCl_2$ and gives a red colour compound with alizarin. Identify A and B.



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3. $[Ti(H_2O)_6]^{2+}$ is purple in colour. Prove this statement.



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4. Define half life of a reaction, Show that for a first order reaction half life is independent of initial concentration.



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5. State Kohlrausch Law. How is it useful to determine the molar conductivity of weak electrolyte at infinite dilution.



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6. Explain the following observations.

(a) Lyophilic colloid is more stable than lyophobic colloid.

(b) Coagulation takes place when sodium chloride solution added to a colloidal solution

of ferric hydroxide.

(c) Sky appears blue in colour.



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7. Mention the uses of formic acid ?



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8. Write the structure of all possible dipeptides which can be obtained from glycine and alanine



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9. How the tranquilizers work in body?



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Part Iv

1. (i) How will you purify metals by using iodine ?

(ii) Boron does not react directly with

hydrogen. Suggest one method to prepare diborane from BF_3 .



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2. (i) Write the reason for the anomalous behaviour of Nitrogen.

(ii) Mn^{2+} is more stable than Mn^{4+} . Why?



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3. (i) Draw all possible stereo isomers of a complex $Ca[Co(NH_3)Cl(Ox)_2]$

(ii) What is Bragg's equation ?



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4. (i) What is an elementary reaction ? Give the differences between order and molecularity of a reaction.

(ii) In a first order reaction $A \rightarrow$ products,

60% of the given sample of A decomposes in 40 min. what is the half life of the reaction ?



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5. (i) Derive the relation between pH and pOH
(ii) Give three uses of emulsions.



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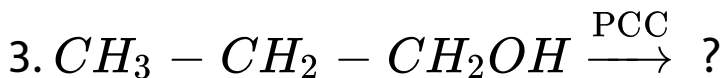
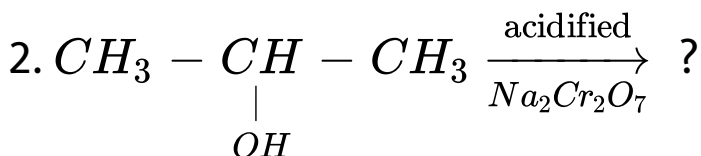
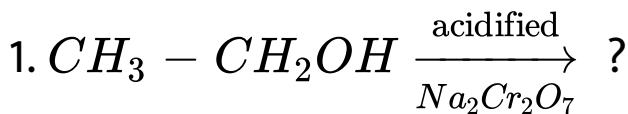
6. How would you measure the conductivity of ionic solutions ?



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7. (i) What is metamerism ? Give the structure and IUPAC name of metamers of 2-methoxy propane

(ii) Explain the following reactions.



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8. An organic compound (A) of molecular formula C_7H_8O on oxidation with alkaline $KMnO_4$ gives (B) of formula C_7H_6O . (B) on reaction with Cl_2 in the presence of catalyst $FeCl_3$ gives (C) of formula C_7H_5OCl .

.(B) on reaction with Cl_2

in the presence of catalyst gives C_7H_5OCl .

Identify A, B, C, D and explain the reaction involved.



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9. (i) Account for the following :

1. Primary amines ($R - NH_2$) have higher boiling point than tertiary amines (R_3N).

2. Aniline does not undergo Friedel-Crafts reaction.

3. $(CH_3)_2NH$ is more basic than $(CH_3)_3N$ in an aqueous solution.

(ii) Name two fat soluble vitamins, their sources and the diseases caused due to their deficiency in diet.



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10. (i) Why ranitidine is a better antacid than magnesium hydroxide ?

(ii) What is bakelite? How is it prepared? Give its uses.



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