



CHEMISTRY

BOOKS - ACCURATE PUBLICATION

MODEL TEST PAPER-5

Section A Mcq

1. The amount of solute required to prepare 10 litres of decimolar solution is:

A. 0.01 mole

B. 0.2 mole

C. 0.05 mole

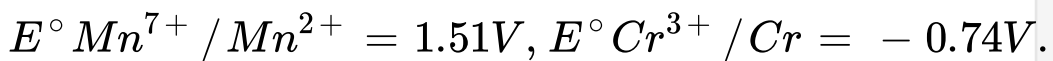
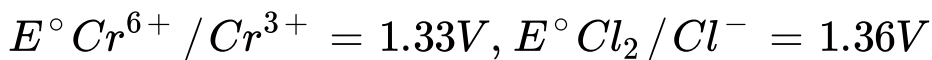
D. 1.0 mole

Answer:



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2. Using the given data ,find the strongest reducing agent



A. Cl^{-1}

B. Cr

C. Cr^{3+}

D. Mn^{+2}

Answer:



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3. Maximum amount of a solid solute that can be dissolved in a specificd amount of a given liquid solvent does not depend upon

A. Temperature

B. Nature of solute

C. Pressure

D. Nature of solvent.

Answer:



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4. Which of the following is a colligative property?

A. Melting point

B. Osmotic pressure

C. Freezing point

D. Sublimation temperature

Answer:



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5. At the given temperature, osmotic pressure of a concentrated solution of substances

A. is higher than that of a dilute solution

B. is lower than that of a dilute solution

C. is same as that of a dilute solution

D. cannot be compared with that of a dilute solution

Answer:



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6. Which of the following element of group 16 is radioactive?

- A. Oxygen
- B. Selenium
- C. Polonium
- D. Tellurium

Answer:



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7. Percentage of gold in 18 carat gold is:

A. 60%

B. 75%

C. 18%

D. 24%

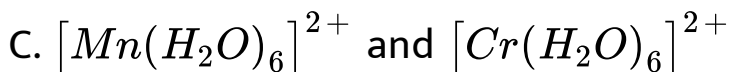
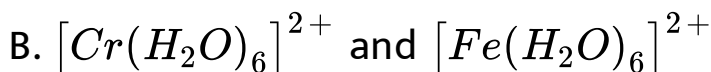
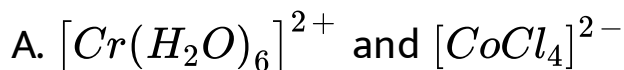
Answer:



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8. The pair having the same magnetic moment is (At

No. Cr = 24, Mn = 25, Fe = 26, Co=27)

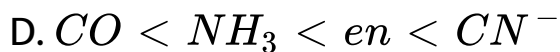
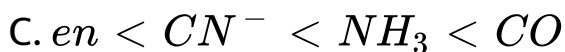
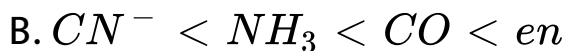
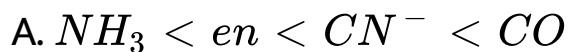


Answer:



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9. Among the ligands NH_3 , en , CN^- and CO , the correct order of field strength is



Answer:



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10. Which alcohol is called wood alcohol?

A. Pentanol

B. Ethanol

C. Methanol

D. Propanol

Answer:



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11. What type of reactions are represented by following equation : $\text{NH}_4\text{Cl} \rightarrow \text{NH}_3 + \text{HCl}$



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12. The carbon atom of the carbonyl group is :

A. sp hybridized

B. sp^2 hybridized

C. sp^3 hybridized

D. dsp^2 hybridized

Answer:



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13. Formalin is % solution of formaldehyde in Water

A. 0.1

B. 0.2

C. 0.4

D. 0.6

Answer:



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14. Which of the following substances does not give iodoform test?

A. Acetaldehyde

B. Ethyl alcohol

C. Methyl alcohol

D. Acetone

Answer:

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15. Phenyl isocyanide is prepared by which of the following reaction?

A. Rosenmund's reduction

B. Carbylamine reaction

C. Reimer-Tiemann reaction

D. Wurtz reaction

Answer:



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16. Unpleasant smelling carbylamines are formed by heating alkali and chloroform with

- A. any aliphatic amine
- B. any aromatic amine
- C. any amine
- D. any primary amine

Answer:



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17. Which compounds can be detected by Molisch's Test?



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18. Which one of the following statements is correct?

A. All amino acids except lysine are optically active

B. All amino acids are optically active

C. All amino acids except glycine are optically active

D. All amino acids except glutamic acids are optically active

Answer:

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Section A Passage

1. Colloidal sol of sulphur is an example of multimolecular colloid while colloidal sol of starch

represents macromolecular colloid. Difference between associated colloids, multimolecular and macromolecular colloids. Multimolecular colloids are formed by the aggregation of a large number of simple molecules, macromolecular colloids consists of macromolecules having size in the colloidal range. On the other hand, associated colloids also called micelles, are generally electrolytes. They exist as ions at low concentration. However, above a particular concentration called critical micelle concentration (CMC) and above a particular temperature called Kraft temperature, these get associated and exhibit colloidal behaviour. Soap is a common example of

associated colloids.

Define multimolecular colloid?



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2. Associated colloids :



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3. Give three differences between multimolecular colloids and macromolecular colloids.



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4. Read the following passage and answer the questions.

There are certain substances which behave as normal strong electrolytes at low concentration but at higher concentration they behave as colloidal solutions due to the formation of aggregated particles. Such colloids are called associated colloids and the aggregated particles are called micelles. Soaps and detergents are the examples of associated colloids. The formation of micelles takes place above certain concentration called critical micellisation concentration (CMC) and a characteristic temperature called Kraft temperature.

In case of colloids, what does CMC stand for ?



5. Read the following passage and answer the questions.

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The formation of micelles takes place above certain concentration called critical micellisation concentration (CMC) and a characteristic temperature

called Kraft temperature.

What is the role of Kraft temperature in micelle formation ?

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Section A True False

1. Account for the following: Why the acid strengths of halogen acids increase in the order:



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2. Gabriel phthalimide synthesis is used for the preparation of aromatic primary amines.



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3. Chlorobenzene gives a white precipitate with alcoholic silver nitrate solution.



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4. Benzaldehyde reduces Fehling Solution.



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5. The small projections present in the small intestine is called-



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Section B Short Answer

1. Why glucose is considered as an instant source of energy?



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2. What do mean by the term- Rearing?

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3. Transition metals have high melting and boiling points. Why?

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4. Write the factors affecting the stability of Complex Ion.

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5. Explain the difference between a weak field ligand and a strong field ligand.

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6. Distinguish between

Essential and non-essential amino acids

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7. What is difference between order of reaction and molecularity of reaction ?

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8. How many grams of ethylene glycol (molar mass = 62) should be added to 10 kg of water, so that the resulting solution freezes at $-10^{\circ}C$ (K_f for water = 1.86 K mol^{-1}).



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9. Benzene and toluene form nearly ideal solution . At 313 K the vapour pressure of benzene and toluene are 160 mm and 60 mm of Hg respectively. Calculate the total pressure of the solution made by mixing their equal masses at 313 K.



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10. A first order reaction takes 69.3 minutes for 50 % completion. Calculate time required for half change of reaction.



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11. The half life period for the conversion of ammonium cyanate into urea at 303 K. at initial concentration of 0.1 mol/l and 0.2 mol/l are 1152 and 568 min respectively. What is the order of reaction.



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12. What do you mean by the term- Shearing?



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13. What is the function of stomata?



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14. Amoeba captures its food through_____



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Section C Long Answer Questions

1. Describe the working of standard hydrogen electrode.

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2. How much amount of substance is deposited by passing one Faraday of electricity.

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3. Write the chemical equation of Bakelite and also write its two uses.

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4. Write Monomers and chemical Reaction of Malamine Formaldehyde resin.

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5. Why phenols are acidic in nature ?

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6. Discuss the reaction and mechanism of acidic dehydration of ethyl alcohol to prepare ether.

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7. Write the reactions of alcohols with :

Sodium

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8. Write the reactions of alcohols with :

HI

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9. Write the reactions of alcohols with:

HCl



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10. Write the reactions of alcohols with:

Sodium hydroxide



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11. Calculate two third life of a first order reaction

having $k = 5.48 \times 10^{-14} \text{ s}^{-1}$.



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12. The rate of a reaction $2A + B \rightarrow A_2B$.

has rate law : rate = $k [A]^2$ with the rate constant equal to $0.50 \text{ mol}^{-1} \text{ L sec}^{-1}$. Calculate the rate of reaction when

(i) $[A] = 0.60 \text{ mol L}^{-1}$, $[B] = 0.05 \text{ mol L}^{-1}$ and

(ii) When concentration of A and B have been reduced to 1/4 th



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Section D Long Answer Questions Type II

1. Why Zr and Hf exhibit similar properties ?

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2. A transition metal easily form alloys with other transition metals. Explain why ?

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3. Silver atom has completely filled d-orbitals ($4d^{10}$) in its ground State. How can you say that it is a transition element ?

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4. $[Ti(H_2O)_6]^{3+}$ is coloured while $[Sc(H_2O)_6]^{3+}$ is colourless. Explain.

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5. Transition elements form complexes easily ? Justify.

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6. Explain why $TiCl_3$ is coloured but $TiCl_4$ is colourless ?

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7. Why is Wurtz reaction not suitable for the preparation of odd number alkanes ?

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8. The dipole moment of chlorobenzene is lower than that of cyclohexyl chloride. Explain.

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9. How will you convert the following :

Ethyl bromide to Ethylisocyanide

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10. How will you convert the following :

Isopropylbromide to Propene

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11. How will you convert the following:

Aniline to Fluorobenzene

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12. How will you convert the following

Chlorobenzene to benzene



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13. How will you convert the following

Methanol to 1-propanol



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14. How will you convert the following:

Chlorobenzene to Aniline



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