



CHEMISTRY

BOOKS - OMEGA PUBLICATION

H.P BOARD MARCH,2016

Series A

1. The number of tetrahedral sites per sphere in fcc structure is

A. 4

B. 2

C. 6

D. 8

Answer:



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2. The unit of specific conductance is: ohm ,

$ohm^{-1}cm^{-1}$ $ohm^{-1}cm$ ohm^2

A. Ohm

B. $\text{Ohm}^{-1} \text{cm}^{-1}$

C. $\text{Ohm}^{-1} \text{cm}$

D. Ohm^{-1}

Answer:



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3. Vulcanisation makes rubber

A. more elastic

B. soluble in inorganic solvent

C. Crystalline

D. None of these

Answer:



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4. Which of the following element has maximum electron gain enthalpy(negative)? *F, Cl, Br, I.*

A. F

B. Cl

C. Br

D. I

Answer:



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5. Which compound undergoes Hoffmann 's Bromamide Reaction ?

A. HCHO

B. CH_3CHO

C. CH_3OH

D. $CH_3 - \overset{O}{\parallel} C - NH_2$

Answer:



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6. The correct IUPAC name of $[Pt(NH_3)_2Cl_2]$

is:

- A. Diammine dichlorido platinum (II)
- B. Diammine dichlorido platinum (IV)
- C. Diammine dichlorido platinum (0)
- D. Chlorido diammine platinum (IV)

Answer:



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7. Which graph shows zero activation energy?



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8. What is peptide bond ? Give one example.



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9. Under what conditions Van't Hoff factor , i
less than one



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10. Complete the following reaction :





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11. What are emulsions ? What are their different types ? Give one example of each type.



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12. Show that relative lowering in vapour pressure is a colligative property



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13. On the basis of valence bond theory explain the structure and magnetic nature of $[Ni(CN)_4]^{2-}$ complex ion.



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14. Silver metal crystallises with a face centred cubic lattice. The length of unit cell is found to be $4.077 \times 10^{-8} \text{ cm}$. Calculate the atomic radius and density of silver (Atomic mass of Ag = 108 u, $N_A = 6.02 \times 10^{23} \text{ mol}^{-1}$).



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15. Why alcohols are higher boiling point compounds than hydrocarbons ethers and aldehydes of corresponding molecular masses but have low boiling point than corresponding acids ?



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16. Give the general electronic configuration of d-block elements.



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17. Write short notes on :

(i) Hell Volhard-Zelinsky reaction

(ii) Clemmensen-Reduction



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18. (i) Define azeotropic mixture.

(ii) How are antiseptic distinguished from disinfectants ? Give one example of each of the substances.



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19. Define

Parts per million



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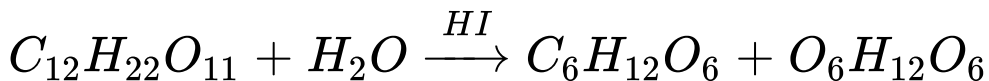
20. Explain the following reaction :

Gattermann reaction.



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21. For the reaction :



Write : (a) Rate of reaction expression.

(b) Molecularity of reaction

(c) Order of reaction



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22. Why noble gases have very high values of ionisation enthalpies?



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23. (i) why are halogens strong oxidising agents ?

(ii) Why oxygen shows anomalous behaviour from rest of members of its family ?

(iii) Ammonia acts as a good complexing agent. Explain.





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24. What is salt bridge? give its functions.



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25. Formalin is



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26. What are coinage metals ?





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27. Write six differences between DNA and RNA.



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28. Account for the correct order of decreasing basicity of ethylamine, 2-aminoethanol, and 3-amino-1-propanol.



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29. Give a chemical test to distinguish between aniline and N-methyl aniline.



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30. (i) Give two differences between emf and potential difference.

(ii) What is vulcanization of rubber ? Explain.

(iii) Write the names and structures of monomers of Buna-S

(iv) What is Blister copper ?





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31. (i) Discuss the anomalous behaviour of nitrogen.

(ii) Give the preparation and structure of XeF_4 .

(iii) Write short note on 'Liquation'.

(iv) Why is Helium used in diving apparatus ?



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Series B

1. The number of atoms in bcc arrangement is

A. 2

B. 1

C. 6

D. 4

Answer:



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2. The units of cell constant are: $\text{ohm}^{-1}\text{cm}^{-1}$,
 cm , ohm^{-1}cm , cm^{-1}

A. $\text{Ohm}^{-1}\text{cm}^{-1}$

B. cm

C. Ohm^{-1}cm

D. cm^{-1}

Answer:



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3. Which is not true about polymers ?



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4. Give the structure and basicity of H_3PO_2 .

A. + 1

B. + 2

C. + 3

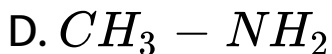
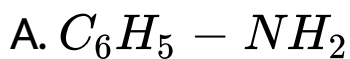
D. + 4

Answer:



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5. Which one of the following is more basic?

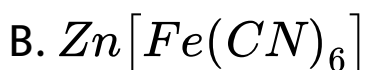
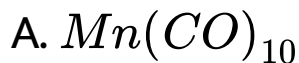


Answer:



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6. In which of the following complexes, the metal ion is in zero oxidation state ?



Answer:



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7. Write two three difference between average rate of reaction and instantaneous rate of reaction



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8. What do you understand by the glycosidic linkage ?



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9. Under what conditions Van't Hoff factor , i more than one



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10. Do aldehydes exhibit position isomerism ?



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11. Differentiate between homogeneous and heterogeneous catalyst ?



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12. Very dilute solutions which show deviations (positive or negative) from Raoult's law are called



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13. Discuss structure of $[Co(NH_3)_6]^{3+}$ complex ion.



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14. The number of atoms present in a fcc unit cell is



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15. Why are alcohols comparatively more soluble in water than the corresponding hydrocarbons ?



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16. Transition elements



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17. Write Aldol condensation reaction.



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18. Define

Mass percentage



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19. Write DDT structure.



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20. Derive an expression for half life period of a zero order reaction.



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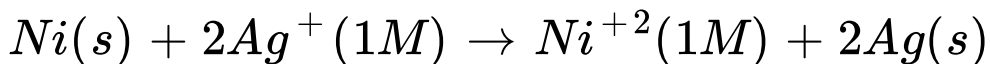
21. Why conc. sulphuric acid is always diluted by adding sulphuric acid to water with

constant stirring and not water to the acid ?



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22. For the reaction :



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Which species get reduced?



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23. What is Misch metal ?



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24. What are Carbohydrates ? Why are these main sources of energy?



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25. How the colloidal sols can be made by condensation or aggregation method?



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26. Discuss the mechanical Properties of colloidal solution?



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Series C

1. The appearance of colour in solid alkali metal halide is generally due to

A. Schottky defect

B. Frenkel defect

C. F-centre

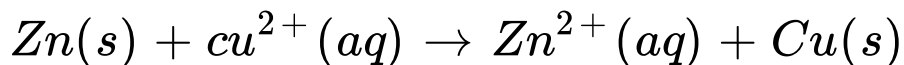
D. Interstitial position

Answer:



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2. Consider the following reactions:



With reference to the above reaction which one of the following is correct statement:

A. Zn is reduced to Zn^{+2}

B. Zn is oxidised to Zn^{+2} ions

C. Zn^{+2} ions are oxidised to Zn

D. Cu^{+2} ions are oxidised to Cu.

Answer:



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3. Which is not a polymer

A. Nylon -6

B. Rubber

C. Teflon

D. Chlorophyll

Answer:



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4. The basicity of phosphorus acid is :

A. Two

B. Three

C. One

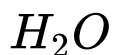
D. zero

Answer:



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5. Write the reaction of benzene diazonium chloride with :



A. Diphenyl ether

B. p-Hydroxy azobenzene

C. Chlorobenzene

D. zero

Answer:



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6. The oxidation number of iron in

$K_4[Fe(CN)_6]$ is :

A. +1

B. + 2

C. + 3

D. zero

Answer:



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7. Define collision frequency. Write short note on collision theory of chemical reactions.



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8. Name the vitamin whose deficiency causes Beri-Beri.



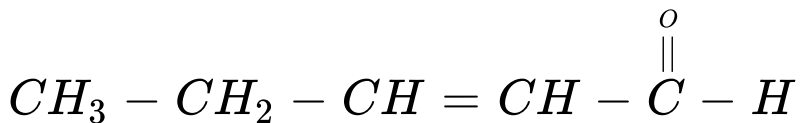
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9. Under what conditions Van't Hoff factor , i is equal to unity



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10. Write the IUPAC name of following compound



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11. Explain Brownian movement.



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12. Define boiling point. What is elevation in boiling point ?



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13. Based on VBT, explain geometry and magnetic behavior of $[Fe(CN)_6]^{-4}$ ion.



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14. Sodium crystallizes in a bcc unit cell. Calculate the approximate no. of unit cells in 9.2 grams of sodium. (Atomic mass of Na = 23 u).



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15. Draw the structure of isobutyl alcohol and give its IUPAC name.



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16. Write the general electronic configuration of f-block elements.



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17. Write short note on Rosenmund's reaction.



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18. What are broad spectrum antibiotics.





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19. Distinguish between soaps and detergents



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20. What are ambident nucleophiles ? Explain with an example.



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21. Derive the integrated rate equation for the rate constant for a first order reaction. What would be units of the first order rate constant, if the concentration is expressed in moles per litre and time to seconds ? Also give graphical representation of integrated rate law equation.



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22. Fluorine exhibits only - 1 oxidation state whereas other halogens exhibit positive oxidation states such as +1, +3, +5, +7.



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23. Discuss the Optical properties of colloidal solution?



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24. Write short note on lead storage battery.



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25. How will you distinguish between ethanol and acetic acid ?



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