



CHEMISTRY

BOOKS - UNITED BOOK HOUSE

SET-13

Exercise

1. The unoccupied space in a body centred cubic unit cell is.

A. 0.68

B. 0.32

C. 0.4

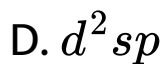
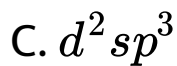
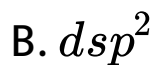
D. 0.5

Answer:



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2. The state of hybridisation of the central atom in a square planar complex is.



Answer:



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3. Which of the following compounds can be used as antifreeze in automobile radiators.

A. Glycol

B. Nitrophenol

C. Ethyl alcohol

D. Methyl alcohol

Answer:



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4. A first order reactions 50% completed in 1.26×10^4 sec. How much time would take for 100% completion.

A. 1.26×10^{14} sec

B. 2.52×10^{14} sec

C. 2.52×10^{28} sec

D. infinite

Answer:



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5. Which one of the following is an oxide.

A. Zincite

B. Calamine

C. Malachite

D. Cryolite

Answer:



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6. Which oxidation state is common for all lanthanoid.

A. (+)2

B. (+)3

C. (+)4

D. (+)5

Answer:



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7. The unit of ebullioscopic constant is.

A. $Kkgmol^{-1}$

B. $MolKgk^{-1}$

C. $K\text{gmol}^{-1}\text{K}^{-1}$

D. $K\text{mol}^{-1}$

Answer:



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8. In the cell $\text{Zn} / \text{Zn}^{2+} / \text{Cu}^{2+} / \text{Cu}$ the negative terminal is.

A. Cu

B. Cu^{2+}

C. Zn

D. Zn^{2+}

Answer:



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9. For the single step reaction of type

$A + 2B \rightarrow E + 2F$ the rate law is.

A. Rate = $K[A^2][B]$

B. Rate = $K\left([E][F]^2\right)\left([A][B]^2\right)$

$$\text{C. Rate} = K[A][2B]$$

$$\text{D. Rate} = K[A][B]^2$$

Answer:



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10. Which of the following ores is concentrated by chemical leaching method.

A. Galena

B. Copper pyrite

C. Cinnabar

D. Argentite

Answer:



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11. Chlorobenzene can be obtained from benzene diazonium chloride by.

A. Gattermann's reaction

B. Friedel craft reaction

C. Wurtz reaction

D. Fitting reaction

Answer:



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12. The analgesic used to present heart attack.

A. Morphine

B. Aspirin

C. Codeine

D. none

Answer:



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13. XeF_4 molecule has the shape.

A. Tetrahedral

B. Coplannar

C. Square pyramidal

D. Trigonal bipyramidal

Answer:



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14. Acid anhydrides on reaction with primary amine gives.

A. Amide

B. Imide

C. 2° amine

D. Imine

Answer:



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15. The reductive ozonolysis of benzene gives.

- A. Acetone
- B. Maleic anhydride
- C. Phthalic acid
- D. Glyoxal

Answer:



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16. Define Peptization and Emulsion.



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17. SF_6 exists but SH_6 has no existence. Why?



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18. Arrange the following oxides in the order of their increasing acidity.

CrO_3 , CrO , Cr_2O_3 .



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19. 6gm of urea and 9gm of glucose are dissolved in 1 Litre aqueous solution. Calculate the osmotic pressure of the solution at 300K.



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20. For the cell $Cu / Cu^{2+} / Hg^{2+} / Hg$, $E_{cell}^{\circ} = 0.45V$. Find the standard reduction potential of Hg^{2+} / Hg electrode. Given $E^{\circ} Cu^{2+} / Cu = 0.34$.



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21. Alcohol acts as both acids and bases. Why?



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22. Give two examples of Co-polymers.



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23. Differentiate between Schottky and Frenkel defect.



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24. What is point defect? A metal has cubic close packed crystal structure. Its density is

2.7 g cm^{-3} . The radius of the metal atom is 1.43

A. Determine the atomic weight of the metal.



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25. What do you mean by colligative properties? Boiling point of water at 750mm is 99.63° C . How much sucrose is to be added to 500gm of water so that it boils at 100° C (given $k_b = 0.52$)



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26. State Faradays laws of electrolysis. What is meant by 1 Faraday?



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27. How many faradays of electricity will be required to electrilyse completely 1 mol molten Al_2O_3 to produce Al metal and O_2 gas?



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28. What do you mean by Zero order reaction?

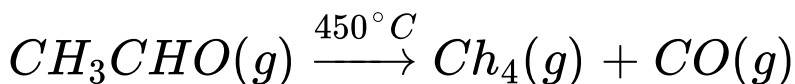
Determine the order of the following reactions.



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29. What do you mean by Zero order reaction?

Determine the order of the following reactions.



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30. What is gold number? Why are lyophilic sols more stable than lyophobic sols?



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31. H_3PO_3 acts as a reducing agent but H_3PO_4 does not. Why?



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32. Describe Cannizzaro's reaction and cross-aldol condensation.



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33. What is Tollens reagent? How can acetaldehyde and acetone be distinguished with the help of reactions?



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34. How will you convert:

Formic acid to oxallic acid.



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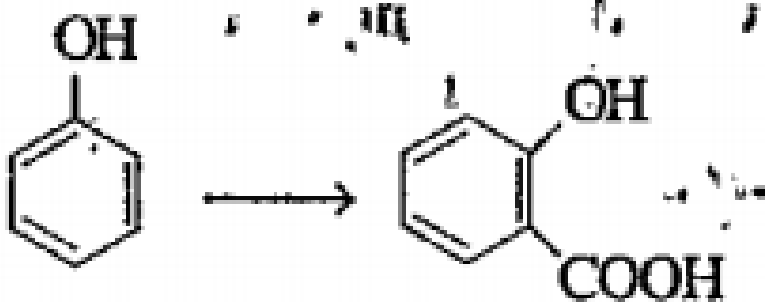
35. How will you convert:

Benzene to benzoic acid.



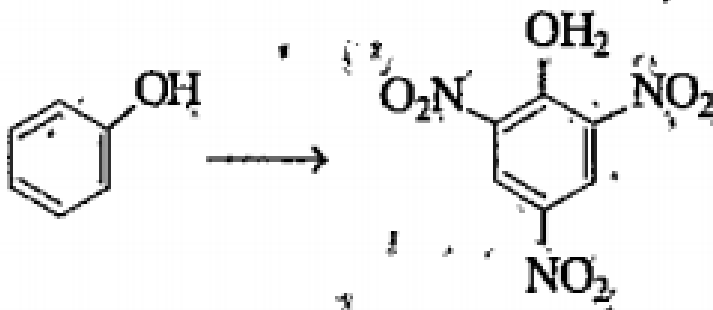
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36. How will you convert:



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37. How will you convert:





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38. What is reverse osmosis? Write one application.



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39. A urea solutions isotonic with 3% (w//v) glucose ($C_6H_{12}O_6$) solution. Calculate the concentration of the urea solution.



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40. What are interhalogen compounds? Give an example.



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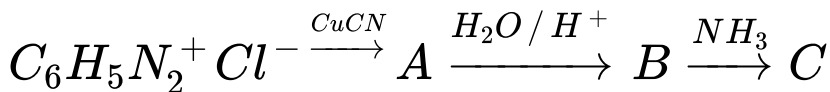
41. Answer the following

ClF_3 exists but FCl_3 does not exist why?



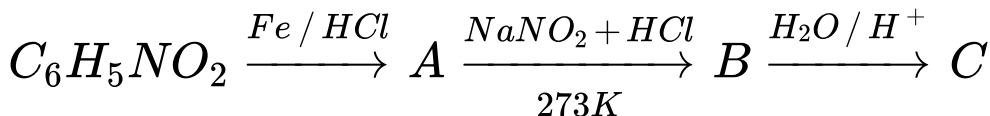
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42. Identify A, B and C in the following.



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43. Identify A, B and C in the following.



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44. How will you convert:

Acetone to propene



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45. How will you convert:

Benzoic acid to benzaldehyde



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46. How will you convert:

Aniline to Benzoic acid



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