CHEMISTRY

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SET-8

Exercise

1. The coordination number of an atom in a fcc crystal is.

A. 12

B. 8

C. 6

D. 4

Answer:

2. The unit of specific conductance is.

A. S

B. Sm^{-1}

C. Sm^{-2}

D. m^{-1}

Answer:

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3. Which one of the following forms a colloidal

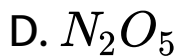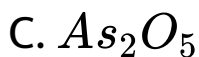solution in water?

A. NaCl

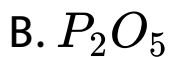B. Glucose

C. Starch

D. $BaCl_2$

Answer:

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4. Which among the following has maximum acidic character?

A. Bi_2O_5

B. P_2O_5

C. As_2O_5

D. N_2O_5

Answer:

5. The actual configuration of Cr[At. No. 24] is.

A. $[Ar]3d^{54}s^{-1}$

B. $[Ar]3d^{44}s^2$

C. $[Kr]3d^{54}S^1$

D. $[Ar]3d^4s^1$
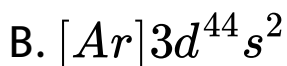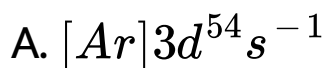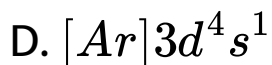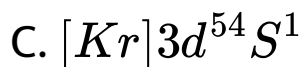
Answer:

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6. Among the following an ambidentate ligands is:

A. CN^-

B. NH_3

C. OH^-

D. H_2O

Answer:

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7. In iodination of alkanes, iodic acid is used to:

A. Catalyse the reaction

B. remove HI by its reduction to prevent

reverse reaction

C. Oxidise HI to prevent reverse reaction

D. Liberate free I_2 necessary for iodination.

Answer:

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8. Ethanol can be converted to ethyl ethanoate

by the action of.

A. acetaldehyde

B. acetone

C. formic acid

D. acetic acid

Answer:

9. In the reaction

$$HCOOC_2H_5 \xrightarrow{CH_3MgI} A \xrightarrow{H_2O} B$$ B is.

A. acetaldehyde

B. racetone

C. propanal

D. propanone

Answer:

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10. Primary amines can be obtained by the reduction of:

A. an amide

B. a nitrile

C. an aldoxime

D. all of these

Answer:

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11. A mixture of glucose & water can be separated by using.

A. (A)$distillation$

B. (B)$Crystallisation$

C. (C)$alcohol$

D. (D)$steam distillation$

Answer:

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12. Among the following the cross-linked polymer is.

A. Polythene

B. Glycogen

C. Nylon

D. bakelite

Answer:

13. Aspirin is an acetyl derivative of:

A. phenol
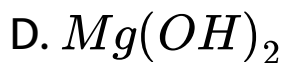
B. benzoic acid

C. ohydroxy benzoic acid

D. none of these

Answer:

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14. Which one of the following is an antacid?

A. Na_2CO_3

B. K_2CO_3

C. $Ca(OH)_2$

D. $Mg(OH)_2$
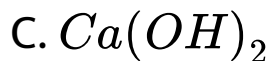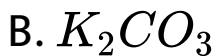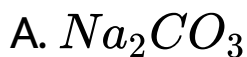
Answer:

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15. What quantity of electricity infaraday is required to produce 36 gm of Al from molten alumina?

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16. What is the difference between sol and gel?

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17. Mention a practical application of Tyndall effect.

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18. Which one between $Lu(OH)_3$ & $La(OH)_3$ is more basic?

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19. Zn^{2+} ion is colourless why?

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20. What is antibiotic? Give example?

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21. What is osmotic pressure? State one application of reverse osmosis.

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22. What is colligative property? Give example?

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23. Write two differeneces between physisorption and chemisorption.

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24. Mention the factors affecting Tyndall effect.

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25. Why does the PCl_5 exist but NC_5 does not?

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26. NH_3 is stronger base than PH_3 why?

27. Why do transition elements have a greater tendency to form co-ordinate compounds?

28. Explain free radial mechanism of polymerisation with example.

29. What is sehottky defect?

30. Copper crystallises in face centred cubic lattice. Calculate the number of unit cells in 1.20 gm of copper. [Atomic mass of Copper = 63.5]

31. What is Frenkel Defect?

32. The density of a metal (atomic mass = 60.2) with face centred cubic lattice is $6.25 gm cm^{-3}$. Calculate the edge length of the unit cell.

33. Define molal depression constant.

34. Ethylene glycol is used as antifreezing agent to prevent the freezing of water in car radiator in cold climate. Calculate the amount of ethylene glycol to be added to 5 kg of water to prevent it from freezing at $-6°C$. Given K_f for water = $1.85 kg mol^{-1}$.

35. State Raoult's law of relative lowering of vapour pressure.

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36. The vapour pressure of a solvent at $25°C$ is 270 mm Hg. Calcualte the number of moles of a non-volatile solute per mole of solvent needed to get a solution with vapour pressure 170 mm Hg at $25°C$.

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37. State Kohlrausch's law.

38. Calculate the molar conductivity at infinite dilution Λ_m° of acetic acid. Given that Λ_m° of HCl, NaCl & CH_3COONa are 426, 126 and $91 Ohm^{-1}cm^2mol^{-1}$ respectively.

39. Write the composition of electrolytes used in the extraction of aluminium by electrolytic process.

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40. Write the chemical reactions occuring at the two electrodes.

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41. What is used as flux in the extraction of iron from hematite?

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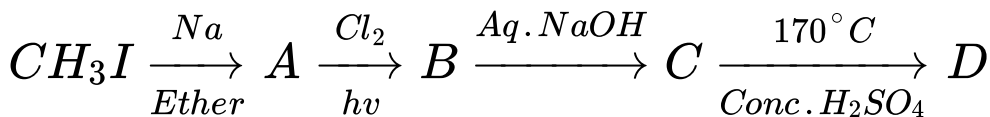**42.** Iron is not extracted from iron pyrites. Explain the reason.

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43. What is Lanthanide contraction?

44. Identify A, B, C, D.

$$CH_3I \xrightarrow[Ether]{Na} A \xrightarrow[hv]{Cl_2} B \xrightarrow{Aq.NaOH} C \xrightarrow[Conc.H_2SO_4]{170°C} D$$

45. Write the structural formula of DDT.

46. How can you prepare $2°$ alcohol using CH_3MgBr?

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47. Identify A

$$\xrightarrow[\text{350°C, 300 atm H}^+]{\text{6—8\% NaOH}}$$
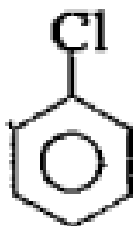
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48. Carry out the conversion

$Ethanal \rightarrow Ethanol.$

49. A first order reaction takes 100 minutes for completion of 50 % of the reaction. Find the time when 75 % of reaction will be completed.

50. Aliphatic primary amine is more basic than aniline. Explain with reason.

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51. Describe the reaction with example - Gabriel's phthalimide Synthesis,.

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52. Aniline is weaker base than ethylamine.

Explain the reason.

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53. $C_2H_5COOH \xrightarrow[\Delta]{NH_3} A$, identify 'A'.

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54. What is called peptide bond?

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55. Explain the terms Nucleoside.

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56. Explain the terms Nucleotide.

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57. Explain the term: Rate constant of a reaction.

58. Explain the terms Activation energy of a reaction.

59. The rate of a reaction increases four times when the temperature changes from 300 K to 320 K. Calculate the energy of activation of the

reaction assuming that it does not change with temperature.

60. Show on the basis of rate equation, that a first order reaction does never go to completion.

61. Differentiate between molecularity and order.

62. Let's add the following- (v) (-5) + (+9)

63. Explain the following.

XeF_2 is a linear molecule.

64. Explain the following.

Fluorine is stronger oxidising agent than chlorine.

65. Explain the following.

Interhalogen compounds are more reactive than halogens.

66. Explain the following.

ammonia is highly soluble in water

67. Draw the structures of H_3PO_2.

68. Write with equation what happens when?

Enthyl alcohol is heated with concentrate

$H_2SO_4 at 180°C$ temperature.

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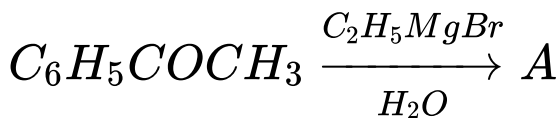**69.** NH_4OH is added to aqueous solution of

$CuSO_4$.

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70. NaCl is heated with concentrated H_2SO_4 in presence of MnO_2.

71. Identify A

$$C_6H_5COCH_3 \xrightarrow[H_2O]{C_2H_5MgBr} A$$

72. Write suitable chemical test to distinguish between the following

Benzaldehyde & acetaldehyde

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73. Write suitable chemical test to distinguish between the following

Formic acid & acetic acid.

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