CHEMISTRY

BOOKS - UNITED BOOK HOUSE

SET-11

Exercise

1. What role plays by intermolecular force of attraction for determining vapour pressure for the following solutions?

Chloroform Acetone

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2. What is the unit of rate constant of first order reaction?

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3. 1.26 gm of a protine dissolved in 200 cc aqueous solution shows an osmotic pressure of 2.57×10^{-3} bar at 300K. Calculate the molecular weight of the protine.

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4. What are shape selective catalysts?

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5. Give an example of anionic surface active agent? Name one protective colloid uses in ice cream.

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6. Compete the following reactions (balanced)

$HgCl_2 + PH_3 \rightarrow$

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7. Compete the following reactions (balanced)

$XeF_4 + O_2F_2 \rightarrow$

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8. Why NF does not hydrolysed but NCl_3 does? What is the geometrical shape $XeOF_4$?

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9. $[NiCl_4]^{2-}$ paramagnetic but $[Ni(CO)_4]$ diamagnetic though both are tetrahedral in shape. Explain why?

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10. Give an example of condensation polymerisation. State two monomers for the polymer $\left(NH-(CH_2)_6-NH-CO(CH_2)_4-CO\right)_n$

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11. Why phosphorus as an impurity increases conductivity of silicone?

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12. Silver forms fcc lattice with edge length 409 pm calculate density of silver. What is the radius of silver atoms.

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13. Why $CaCl_2$ is used to melt the ice deposited on road?

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14. The cell used in watch has the following cell reaction. Calculate E° & ΔG° for it.

$$Zn(s) + Ag_2O(s) + H_2O(l) \rightarrow 2Zn^{2+}(aq) + 2Ag(s) + 2OH^{-(aq)}$$

Given $E^\circ\_\left(Ag^+ / Ag\right) = +0.80V,$

$E^\circ\_\left(Zn^{2+} / Zn\right) = -0.76V$

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15. State Kohlrausch law of independent migration of ion.

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16. 0.0024 (M) Acetic acid solution has specific conductance $7.896 \times 10^{-5} Scm^{-1}$. What is the molar conductance of ACOH and also find degree of dissociation of it?

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17. What is the role of stabilizer and depressant in froth flotation process? Give on example of each.

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18. Which element of lanthanoid shows +4 oxidation state?

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19. Why Ag is considered to be a transitional element though it has d^{10} ground state electronic configuration?

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20. Complete the reaction : $MnO_4 + C_2O_4^{2-} + H^+ \rightarrow$

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21. Why Gadolinium (Z=64 and Lutetium (Z=71) shows +3 oxidation state?

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22. State with chemical equation when pH is excessively reduced for aqueous solution of potassium chromate.

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23. Why 2% enthanol is mixed in preservation of chloroform?

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24. Identify $A \to D$

$$CH_3Br + Mg \xrightarrow[ether]{Dry} A \xrightarrow[ice]{dry} B \xrightarrow{H_2O} C \xrightarrow{AgOH} CH_3COOAg + Br_2 \xrightarrow{\mathbb{C}l_4} D$$

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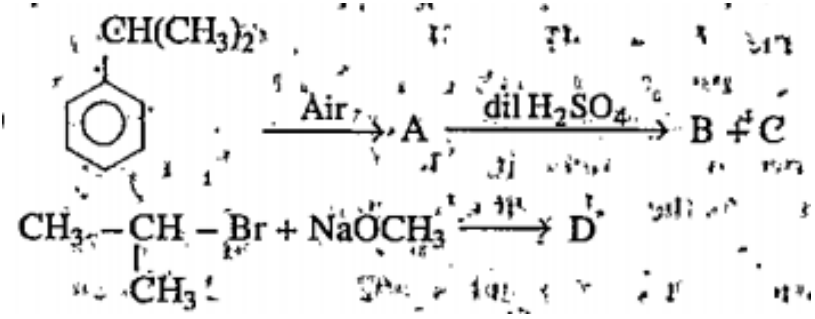
25. Identify A to D



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26. Why orthomethoxy phenol has less acidic nature than nitrophenol?

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27. What will happen when $C_6H_5\overset{\oplus}{N}_2\overset{\ominus}{Cl}$ as added to alkaline phenol solution?

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28. How would you carry out the following conversion Propene $\rightarrow$ Propan-1-ol

Phenole $\rightarrow$ Salol

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29. Which of the following metals can be purified by electrorefining?

A. (A) Cu

B. (B) Zn

C. (C) Ca

D. (D) Al

Answer:

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30. What will happen when aniline is heated with oleum at $180^\circ C$?

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31. Why aromatic primary amine can't be synthesised by Gabriel thalimide process?

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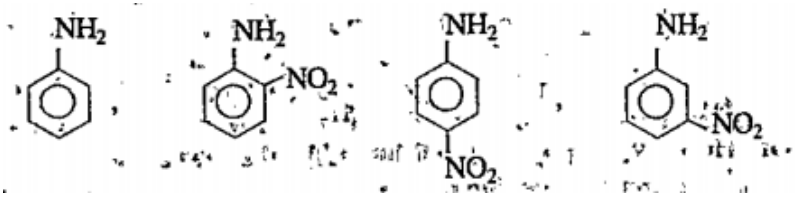
32. Arrange the compounds as per increasing basicity.



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33. What is the cause of pernicious anaemia?

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34. Write two reactions of Glucose with Br_2 water and $NaBH_4$

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35. Establish the equation for half life of a zero order reaction.

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36. Dissociation reaction of PH_3 at $120^\circ C$ is as follows. $4PH_3(g) \rightarrow P_4(g) + 6H_2(g)$. Write equation for the reaction and half life period for rate = $K[PH_3]$ and 37.9 see respectively. How much time required for 3/4 part dissociation? How much part remain undissociated after 1 minute.

A. `

B.

C.

D.

Answer:

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37. Show that the time required to complete 99% of a 1st order reaction is twice than that of time required to complete 90%.

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38. For increasing temperature from 300K to 320K the rate of reaction increases by 4 times calculate energy of activation for that reaction.

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39. Write with complete balance equation what will happen when O_3 is passed through KI solution acidified with H_2SO_4.

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40. Draw the structure of $H_2S_2O_7$.

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41. How many type(s) of bonds is/are present in PCl_5

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42. Identify A-F.

$CH_3COCH_3 \xrightarrow{SeO_2} A$

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43. Identify C

$$CH_3COOH \xrightarrow{HN_3 / conc.\, H_2SO_4} C$$

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44. Identify A-F.

$$C_6H_5COOH \xrightarrow{SOCl_2} D \xrightarrow{CH_2N_2} E \xrightarrow[H_2O]{(Ag_2O) / \Delta} F.$$

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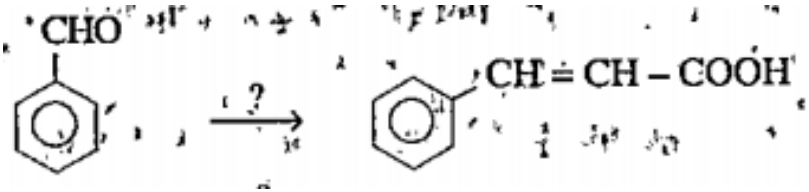
45. Write the reagents required for the following changes



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46. Write the reagents required for the following changes

$CH_3COCH_3 \rightarrow CH_3\mathbb{C}l_2CH_3$

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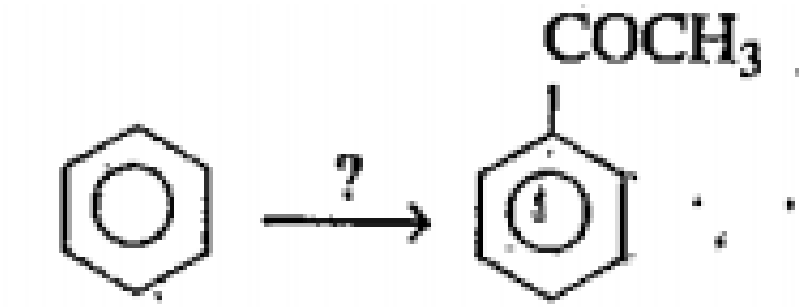
47. Write the reagents required for the following changes



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48. Mention the reagents used for the following conversions.

$CH_3CHO \xrightarrow{A} CH_3COOC_2H_5$

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49. How would you carry out the following changes:

Acetone $\rightarrow$ Pinacol

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50. How would you carry out the following changes:

Toluene $\rightarrow$ Benzaldehyde

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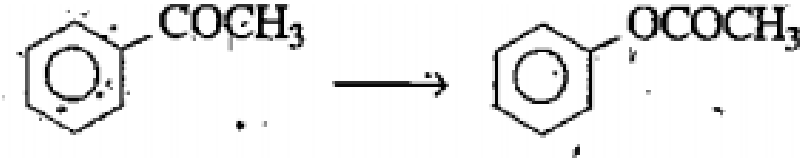
51. How would you carry out the following changes:



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52. How would you carry out the following changes:

$HCHO \rightarrow (CH_2)_6N_4$

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53. How would you carry out the following changes:

$CH_3CHO \rightarrow CH_3 - \underset{OH}{\underset{|}{C}}H - COOH$

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54. % of void space in body centred cubic unit cell.

A. 0.34

B. 0.25

C. 0.3

D. 0.32

Answer:

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55. Quantity of charge required to release one moe Al from Al_2O_3.

A. 1F

B. 6F

C. 3F

D. 2F

Answer:

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56. The most effective Co-agulant for Sb_2S_3 sol is.

A. Na_2SO_4

B. $CaCl_2$

C. $Al_2(SO_4)_3$

D. NH_4Cl

Answer:

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57. Number of O-bride bond in P_4O_{10}.

A. 6

B. 4

C. 2

D. 5

Answer:

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58. Having highest magnetic moment.

A. Fe^{2+}

B. CO^{2+}

C. Cr^{3+}

D. Ni^{2+}

Answer:

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59. The state of hybridisation of the central atom of which of the following is sp^3d^2?

A. Sp^3

B. dSp^2

C. d^2sp^3

D. d^2Sp

Answer:

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60. Which one gives inversion of configuration is SN^2 reaction.

A. CH_3Cl

B. $(C_2H_5)CH_2Cl$

C. $(CH_3)_3\mathbb{C}l$

D. $(CH_3)_2CHCl$

Answer:

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61. In which solvent ether gets dissolved.

A. dil HCl

B. concn. H_2SO_4

C. NaOH

D. H_2SO_4

Answer:

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62. The producvt obtained when calcium benzoate an calcium acetate is heated.

A. acetophenone

B. Benzophenone

C. Acetone

D. None of these

Answer:

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63. Number of primary amines having of $C_4H_{11}N$ general formula:

A. 1

B. 2

C. 3

D. 4

Answer:

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64. Which one among the following is a polyamide polymer.

A. Teflon

B. Nylon-6, 6

C. Terrylene

D. Backelite

Answer:

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65. Which one is used as a tranquilizer.

A. Equanil

B. Naproxen

C. Tetraeyclin

D. Gelusin

Answer:

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66. Which one is not used as a food preservatives.

A. Edible salt

B. Sodium bi carbonate

C. Sodium Benzoate

D. Potassium metabisulphate

Answer:

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67. The amino acid which is not optically active is

A. Glycene

B. Alanine

C. Valine

D. Lucine

Answer:

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68. To measure the conductivity of a solution which one is used AC or DC?

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69. Calculate the charge in coulomb unit of 1 gm ion N^{3-}.

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70. What will happen when $Fe(OH)_3$ is added to AS_2S_3 sol?

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71. Cu^+ ion is colourless. Why?

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72. Which one of the +3 law lanthanoid compound having highest size?

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73. What is used as sweetening agent per sweets of diabetic patients?

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