CHEMISTRY

BOOKS - UNITED BOOK HOUSE

SET-15

Exercise

1. On what condition two solution be isotonic?

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2. What do you mean by molal ebuloscopic constant K_b for water $0.515^\circ C$ kg mol^{-1}.

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3. Draw temperature vs degree of adsorption curve for both physical and chemical adsorption.

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4. Write two differences between lyophilic and lyophobic sol.

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5. Why oxygen only forms diatomic molecule among group 16 elements and others form octa atomic solid?

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6. Chrome alum is a double salt but potassium ferricyanide is a complex salt-Explain why?

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7. What is co-polymerisation?

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8. Write the name and formula of monomer unit of natural rubber.

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9. Chromium, forms a body centred Cubic lattice. If the side length of the cube be 287 pm them what is the radius of chromium atom and density of the solid?

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10. What is schotsky defect? Find the packing efficiency of face centred cubic latice.

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11. State the factors on which osmotic pressure of a liquid depends. 10gm glycerine dissolved in 1 litre solution is isotonic with 2% Glucose solution. What is the molecular weight of Glycerine?

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12. Define equvalent conductance and state its unit. To make 0.005 mm thick silver coat on a

$80cm^2$ metal sheet calculate the time required for 3 amp current passed through $AgNO_3$ solution. Density of Ag beign $10.5gmcm^{-3}$

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13. Calculate the EMF of the electrochemical cell for which the following cell reaction is given below-

$Zx(S) + ni^{2+}(aq) \rightarrow Zn^{+2}(aq) + Ni(S)$

Given

$E^{\circ}_{zn^2/zn} = -0.76V E_{Ni^{2+}/Nl} = -0.25V.$

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14. State with proper reason for which ores calcination and roasting applicable. What is matt?

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15. Write with balanced chemical equation what will happen when a mixture of NaCl, MnO_2 and concentrat3ed H_2SO_4 is strongly heated.

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16. Complete the followign reaction.

$XeF_6 + H_2O \rightarrow$

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17. Write General electronic configuraiton for group 18-f-block element. How would you carry out the change of chromate ion to dichromate ion?

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18. Show mechanistic path way of the reaction tertiary butyl bromide is treated with aqueous KOH solution. Convert Iodobenzene from benzene.

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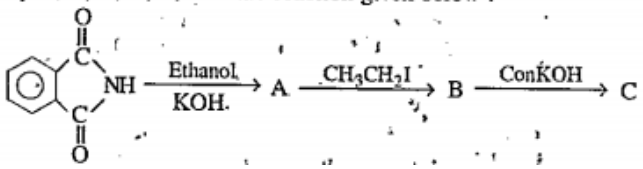
19. Identify A,B,C,D,E,F in the reaction given below:

(i) 

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20. An organic compound A (C_3H_5N) when heated with concentrated $NaOH$, NH_3 gas evolved with formation of a sodium salt of carborylic acid (B). On reduction A give $C(C_3H_9N)C$ when treated with Nitrous acid gives D. Find A,B,C,D and writes the relevant reactiosn involved.

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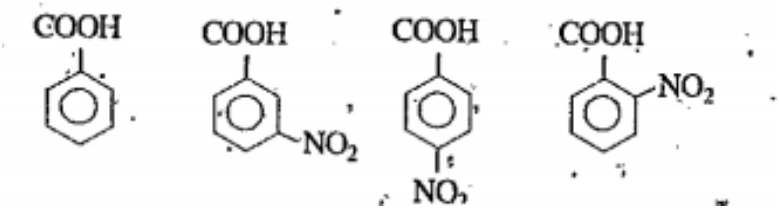
21. Arrange the following acid as per their increasing strength - State reason behind it-



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22. State the arrowhead equation for the reaction given below: Propanone is heated

strongly with Iodine and concentrated NaOH solution.

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23. State the product:-

$$CH_3 - CH = CH - CHO + NaBH_4 \rightarrow \ ?$$

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24. State the product:-

$$CH_3CHO + SeO_2 \rightarrow \ ?$$

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25. State the product:-

$$C_6H_5COOH + Br_2 \xrightarrow{FeBr_3} ?$$

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26. State the product:-

$$CH_3COOH + CH_2N_2 \xrightarrow{Ether} ?$$

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27. State the product:-

$(CH_3)_2CO + CH_3MgBr \xrightarrow{H_2O} ?$

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28. What do you mean by isoelectric point of an amino acid being 9.5? Name a non-reducing sugar? Define non reducing sugar?

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29. Prove that for any first order reaction time to complete the reaction is infinity but for a zero order reaction, it is a fixed time.

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30. State the postulates of reaciton rate. What is temperature co-efficient of a reaction.

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31. The specific reaction-rate constant for a decomposition reaction at $15^{\circ} Cbe4.8 \times 10^{35}$ ^ -1. If the energy of activation for the reaction be 80KJ mol^{-1} then find the temperature in which it will be 1.5×10^{45} ^ -1

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32. Mention two differences between bleaching action of SO_2 and CI_2.

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33. Which one has highest Catenation property between N_2 and Phosphorus and why?

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34. Which solutions can be reduced by phosphine?

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35. Give one example each for the the folloiwng: Hunsdicker reaction.

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36. Give one example each for the the folloiwng: Stephen reaction

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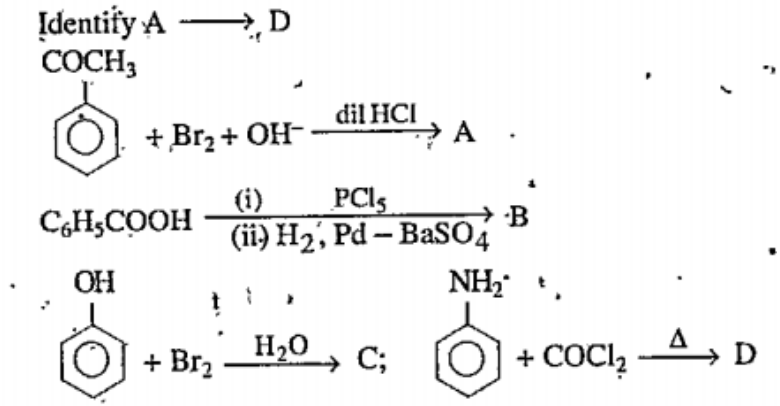
37. Give one example each for the the folloiwng: Reimer tiemann reaction.



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38. Two isomeric compounds A and B having the molecular formula $C_3H_7B_r$ form the same compound C on dehydrobromination. C on

ozonolysis produces acetaldehyde and formaldehyde. Identify A. B and C.

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39. Carry out the following convertion

$HCHO \rightarrow (CH_3)_2CO$

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40. How would you convert.

1 propanol $\rightarrow$ 2 propanol

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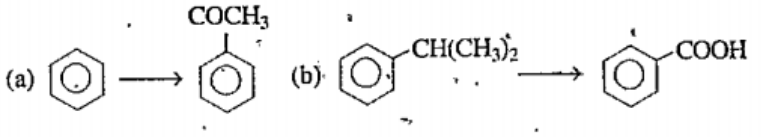
41. Name the reagent:



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42. Which type of detergent is formed usign polythylene Glycol.

A. Cationic

B. anionic

C. non ionic

D. soap

Answer:

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43. Which on used as Tranquilizer

A. Mifepristone

B. Promethazine

C. Vallium

D. Naproxen

Answer:

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44. What is condensation polymerisation? Write with an example.

A. Backelite

B. Teflon

C. Butyl Rubber

D. Melamyne-formaldehyde resin

Answer:

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45. Which one does not undergo azo coupling reaction with Benzene diazonium chloride

A. aniline

B. Phenol

C. Anisole

D. Nitrobenzene

Answer:

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46. Which one among the following is a vitamin

A. Aspertic acid

B. Ascorbic acid

C. Adipic acid

D. Saccaric acid

Answer:

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47. Which of the following does not react with both acetone and benzaldehyde.

A. Fehling solution

B. $NaHSO_3$

C. Phenyl Hydrozine

D. Grignard reagent

Answer:

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48. The reagent used to discriminate 2-pentanone and pentanone is.

A. $K_2Br_2O_7 \mid concH_2SO_4$

B. $Zn - Hg \mid HCI$

C. SeO_2

D. $I_2 / NaOH$

Answer:

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49. Which one among the following is paramagnetic

A. $\left[Ni(H_2O)_6\right]^{2+}$

B. $\left[Ni(CO)_4\right]$

C. $\left[Zn(NH_3)_4\right]^{2+}$

D. $\left[Co(NH_3)_6\right]^{3+}$

Answer:

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50. In which of the following pairs, the hybridisation of central atoms is same, but geometry is not the same ?

A. $\left[Ni(CN)_4\right]^{2-}$

B. $\left[Cu(NH_3)_4\right]^{2-}$

C. $\left[Pt(CI_4\right]^{2-}$

D. All

Answer:

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51. P-H bond is not present in.

A. H_3PO_2

B. $H_3PO)3$

C. $H_4P_2O_5$

D. H_3PO_4

Answer:

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52. Delta is formed due to

A. Emulsification

B. Colloid

C. Coagulation

D. Peptization

Answer:

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53. if SiO_2 is present as impurities then the flux used.

A. CaO

B. $MgCO_3$

C. $CaCO_3$

D. All of these

Answer:

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54. Quantity of charge required to get 1 mole Al from Al_2O_3

A. 1F

B. 6F

C. 3F

D. 2F

Answer:

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55. Which one is not a ferromagnetic substance.

A. Cobalt

B. Nickel

C. Manganese

D. Iron

Answer:

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56. How would you understand that the AS_2S_3 sols particles are negetively charged?

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57. Which types of ligands form chelates? Give example.

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58. Which reagent can differentiate $[Co(NH_3)_3]$ and $[Co(NH_3)_4CI_2]CI$?

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59. State one differnece between Lanthanoid and Actinoid.

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60. What do you mean by limiting molar conductivity?

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61. Write the relation between specific conductivity and cell constant of a solution.

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