CHEMISTRY

BOOKS - UNITED BOOK HOUSE

Set-2

Exercise

1. If a stands for the edge length of a cubic systems simple cubic, body centred and face

centred cubic, then ratio of radii of spheres in these systems are.

A. $\frac{\sqrt{3}}{2}a : \frac{\sqrt{2}}{2}a$

B. $a : \sqrt{3}a : \sqrt{2}a$

C. $\frac{a}{2} : \frac{\sqrt{3}}{4}a : \frac{a}{2\sqrt{2}}$

D. $\frac{a}{2} : \sqrt{3}a : \frac{1}{2}\sqrt{2}a$

Answer:

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2. If E° cell for a given rexn has negative value, then which of the following given correct relationships for the values of ΔG° and Keq.

A. $\Delta G^{\circ} > O, keq < 1$

B. $\Delta G^{\circ} > O, keq < 1$

C. $\Delta G^{\circ} < O, keq > 1$

D. $\Delta G^{\circ} < O, keq < 1$

Answer:

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3. Which of the following is true for phsisorption.

A. In increase with increase in temperature

B. Entropy of system increases

C. Non spontaneous

D. Involves how heat adsorption

Answer:

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4. On addition of $KMrO_4$ toconc. H_2SO_4, a gree oily compound is ob-tained wich is explosive. Identify. `

A. Mn_2O_7

B. MnO_2

C. $MnSO_4$

D. Mn_2O_3

Answer:

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5. Which of the following is an antihistamine drug?

A. Chlorophniramine

B. Ciprofloxacin

C. Chloramphenicol

D. Chloroquine

Answer:

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6. Name three oxoacids of nitrogen. Write the disproportionation reaction of that oxoacid of nitrogen in which nitrogen is in +3 oxidation state.

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7. What will be product/s if benzal chloride is heated with a concentrated aqueous KOH solution?

A. benzaldehyde

B. benzoic acid

C. benzylalcohol

D. Aldol

Answer:

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8. The electrolytic reduction of nitrobenzene in strongly acidic medium produces:

A. (a) azobenzene

B. (b) aniline

C. (c) p-aminophenol

D. (d) azoxybenzene

Answer:

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9. $HCHO + C_6H_5CHO \xrightarrow{NaOH}$ A+B,A is _____.

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10. Which of the following bases is not present in DNA?

A. Adenine

B. Guanine

C. Cytosine

D. Uracil

Answer:

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11. Alkyl iodide can be prepared by:

A. $RCH_2COOAg + I_2 \longrightarrow$

B. $RCH_2Cl + NaI \longrightarrow$

C. $R - OH + Hi \xrightarrow{RedP}$

D. $CH_4 + I_2 \longrightarrow$

Answer:

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12. Arrange increasing order of acid strength:

HClO, $HClO_2$, $HClO_3$, $HClO_4$ options are:

A.

$$HCIO_3 > HCIO_2 > HCIO > CHIO_4$$

B.

$$HCIO > CHIO_2 > CHIO_3 > HCIO_4$$

C.

$$HCIO > HCIO_4 > HCIO_3 > CHIO_2$$

D.

$$HClO_4 > HClO_3 > HClO_2 > HClO$$

Answer:

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13. How many optically active stereoisomers are possible for butan-2-3-diol:

A. 1

B. 2

C. 3

D. 4

Answer:

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14. What happens when Methyl bromide is treated with KCN separately and hydrolised.

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15. Which of the following compounds will give HVZ reaction?

A. (A) CH_3CHO

B. (B) $HCHO$

C. (C) CH_3COOH

D. (D) CH_3COCH_3

Answer:

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16. Which element is mixed with copper to form Brass?

A. (A) Pb

B. (B) Zn

C. (C) Mg

D. (D) Hg

Answer:

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17. Which is stronger reducing agent among Cr^{2+} & Fe^{2+}?

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18. State with an example. What is hydrophobic colloid?

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19. How does osmotic pressure of a dilute solution of a nonvolatile non electrolyte depend on number of moles of solute?

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20. In coagulation of arsenious sulphide, $AI(NO_3)$ is a better coagulating agent than KNO_3. Explain why?

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21. Colloidal particles display Brownian movement but particles of suspension donot.

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22. Explain why chlorobenzene is less reactive towards nucleophilic substitution (SN_1) and (SN_2) reaction.

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23. What do you mean by D (-)- lactic acid and L (+) - lactic acid. Give structure.

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24. Explain the solvent effect on the rate of SN_2 reaction.

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25. How is n-propyl benzene converted to benzoic acid?

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26. Why is halogen atom attached to benzene ring ortho and para directing but deactivating in nature?

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27. Draw the structure of $H_2S_2O_8$. What is trailing of mercury?

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28. How will you carry out following conversions: 1) Aniline to phenyl hydrazine 2) Benzene to 1,3,5 tribromo benzene.

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29. How is aspirin prepared from benzene diazonuim chloride?

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30. What is frenkel defect?

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31. Nickle crystallises in a cubic close packed structure. In thisstructure. In this structures,

the distance between two nearest neighbour is 250 pm. Atomic mass of Ni=58.7. am. Calculate the density of Ni Crystal.

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32. Calculate ΔG° and equilibrium constant for the reaction.

$$Cu^{2+} + In^{2+} \leftrightarrow Cu^{+} + In^{3+}$$

$$E^{\circ}_{Cu^{2+}Icu} = 0.15V \qquad E^{\circ}_{In^{2+}In} = -0.4V$$

$$E_{In^{3+}IIn^{+}} = -0.42V$$

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33. 19.5 g of CH_2FCOOH is dissolved in 500 gm water. The depression in freezing point in $1^\circ C$. Calculat the vant factor and dissociation constant of fluroacetic acid.

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34. Differentiate: Mineral and ore

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35. Differentiate: Calcination and roasting

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36. Differentiate: Flux and slag

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37. Why does cerium exhibit +4 oxidation state?

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38. Complete the reaction

$\rightarrow TiCI_4 + H_2O \rightarrow$

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39. The color of complex compounds of a block elements depend on the ligands attached to them but this does not happen in block elements-explain.

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40. Caclulate the sin only magnetic moment of M^{2+} (z=27)

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41. Arrange the following aqueous solution in order of increasing freezing point and give reason: 0.01M KCI, 0.01M glucose, 0.01M $BaCl_2$.

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42. A dried grain of grape is placed in water is swells and gets back its normal shape. But when this swollen grain is placed in the concentrated aqueous solution of suggar it shrinks-Why.

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43. What happens when glucose is treated within: phenylphydrazine

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44. What happens when glucose is treated within: Br_2/H_2O

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45. What happens when glucose is treated within: $NaBH_4$

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46. What are the monomus of Buna-S.

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47. In nylon-6, 6 what does the designation $6, 6$ mean?

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48. Mention one important use of Bakelite Teflon and PAN.

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49. Give example of on elastomer.

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50. Draw the fishcher projeotion formula of the enantiomer of m-D glucopyranose and write its name.

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51. What is peptide linkage?

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52. How will you convert: aniline to p-aminophenol

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53. How will you convert: nitroben-zene to p-aminobenzoic acid

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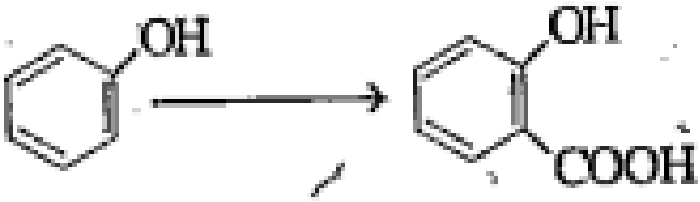
54. How would you convert?



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55. Explain why $[NiCI_4]^{2-}$ ion is paramagnetic but $[Ni(CN)_4]^{2-}$ is diamagnetic.

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56. Draw the structures of optical isomer of $\left[PtCl_2(en)_2\right]^{2+}$. Write IUPAC name and hybridization of $K_4\left[Mn(CN)_6\right]$

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57. The reactant concentration of a 1st order reaction at various times 0, t, 2t and 3t are. Co, 2 Co, a^yCo and a^2Co and a^zCo respectively a = constant 0 < a < 1. Establish relation between x, y, z.

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58. What is the significance of activation energy of a reaction? State the difference between average and instantaneous rate of a reaction.

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59. Explain the following observation: Only Xe is known to form chemical compounds among all other noble gases.

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60. Explain the following observation: Sulphur dioxide is a stronger reducing agent in alkaline medium than in acidic medium.

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61. Explain the following observation: The N-O bond in NO_2^- ion is shorter in length than the $N-O$ bon in NO_3^- ion.

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62. Complete the following reactions: 1) $P_4 + SO_2Cl_2$ 2) $XeF_6 + H_2O$

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63. Write the structure of $XeOF_4$

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64. Write the structure of : S_8

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65. What happens when a mixture of mixture acetaldehyde and acetone is teated with dill NaOH? Answer with mechanism of the reaction.

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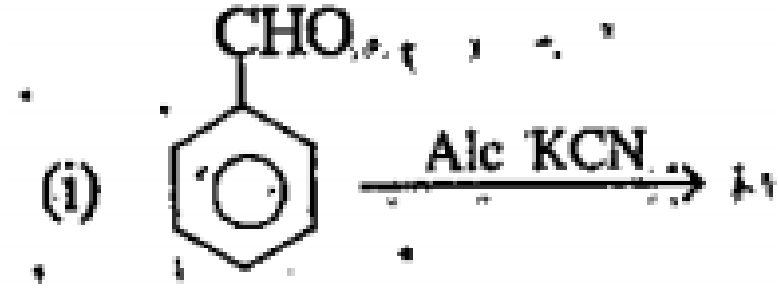
66. Write the products



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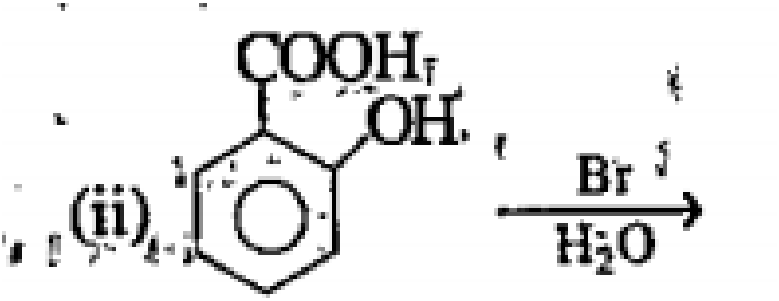
67. Write the products



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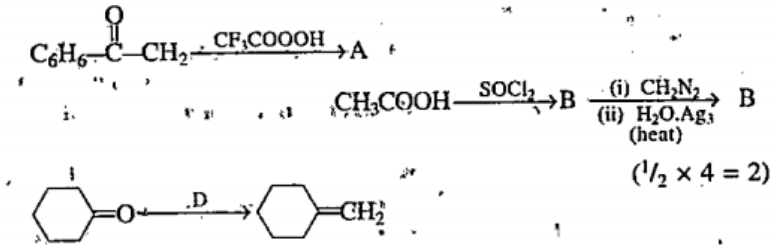
68. Identify:



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69. An organic compound A gives positive test with Tollen's reagent, on treatment with amonia form B which is an eye medicine. A on treatment with concenteated KOH forms C and

D. C is on oxidation forms A agains. D on acidification responds to Tollen's Test. A comines with CH_3Mgl followed by hydrolysis forms E, which on oxidation followed by decarboxylation forms methane. Identify A to E (only structure).

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70. Distinguish between: acetylchloride and acetic anhydride.

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71. How will you convert: butan-2-one to propanoic acid

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