CHEMISTRY

BOOKS - NTA MOCK TESTS

NTA NEET TEST 22

Chemistry

1. Blue colour of alkali and alkaline earth metals in liquid NH_3 is due to

A. ammoniated complex cation

B. ammoniated e^-

C. $d - d$ transition

D. both (A) & (B)

Answer: B

Watch Video Solution

2. The volume of atom present in a face-centred cubic unit cell of a metal (r is atomic radius) is

A. $12/3\pi r^3$

B. $16/3\pi r^3$

C. $20/3\pi r^3$

D. $24/3\pi r^3$

Answer: B

Watch Video Solution

3. Which of the following is not present in nucleotide?

A. Guanine

B. Cytosine

C. Adenine

D. Tryoxine

Answer: D

Watch Video Solution

4. Molar conductivity of a solution of an electrolyte AB_3 is $150 Scm^2 mol^{-1}$. If it

ionises as $AB_3 \rightarrow A^{3+} + 3B^-$, its equivalent conductivity will be :

A. 150 (in Scm^2eq^{-1})

B. $75\left(\text{in}Scm^2eq^{-1}\right)$

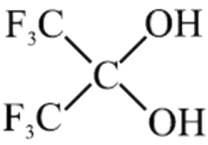
C. $50\left(\text{in}Scm^2eq^{-1}\right)$

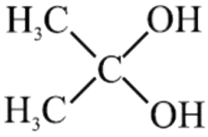
D. $80\left(\text{in}Scm^2eq^{-1}\right)$

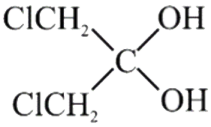
Answer: C

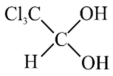
Watch Video Solution

5. Which of the following geminal diols is most unstable:

A. 

B. 

C. 

D. 

Answer: B

Watch Video Solution

6. The standard enthalpy of neutralization of strong acid and strong base is $-57.3kJ\text{equiv}^{-1}$. If the enthalpy of neutralization of the first proton of aqueous H_2S is $-33.7kJmol^{-1}$ then the $(pK_a)_1$ of H_2S is

A. $\left(\frac{23.6\times10^3-T\Delta s^\circ}{2.303RT}\right)$

B. $\left(\frac{23.6\times10^3-T\Delta s^\circ}{2.303RT}\right)$

C. $\left(\frac{T\Delta S^\circ-23.6}{RT}\right)$

D. $2.303\left(\frac{T\Delta S^{\circ}-23.6}{RT}\right)$

Answer: A

Watch Video Solution

7. In a reversible adiabatic change ΔQ is

A. infinity

B. zero

C. equal to $C_v dt$

D. equal to $nR\ln V_2/V_1$

Answer: B

Watch Video Solution

8. Which of the following pair of species have identical shape?

A. CO_2, SO_2

B. CIF_3, BF_3

C. XeF_2, I_3^-

D. SO_4^{2-}, XeF_4

Answer: C

Watch Video Solution

9. $CH_3 - \overset{\overset{OH}{|}}{CH} - \overset{\overset{O}{||}}{C} - CH_2 - CH_3$ will respond to

A. only Fehling solution

B. Only Tollen's reagent

C. Both Tollen's reagent and Fehling solution

D. none of these

Answer: C

Watch Video Solution

10. Given that equilibrium constant for the reaction $2SO_2(g) + O_2(g) \Leftrightarrow 2SO_3(g)$ has a value of 278 at a particular temperature. What is the value of the equilibrium constant for the following reaction at the same temperature ?

$SO_3(g) \Leftrightarrow SO_2(g) + \frac{1}{2}O_2(g)$

A. 1.8×10^{-3}

B. 3.6×10^{-3}

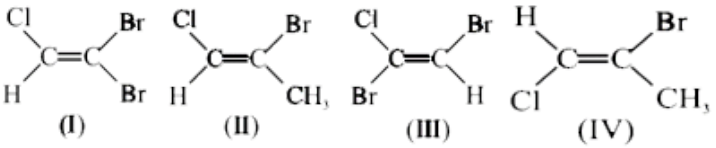
C. 6.0×10^{-3}

D. 1.3×10^{-3}

Answer: C

Watch Video Solution

11. Which is a pair of geometrical isomers?



A. I and II

B. I and III

C. II and IV

D. III and IV

Answer: C

Watch Video Solution

12. The temperature of a sample of a gas is raised from $127^{\circ}C$ to $527^{\circ}C$ .The average kinetic energy of the gas

A. does not change

B. is doubled

C. is halved

D. cannot be calculated

Answer: B

 Watch Video Solution

13. In the radioactive decay of ${}_{Z}X^{A}$, which of the following could be considered as incorrect statement?

A. α-decay involves the decrease of both A and Z by 2

B. β-dacay involves the increase of Z by one, A remaining constant

C. K-electron capture results in the decrease of Z by one with no change in A

and emission of γ- rays

D. γ- ray emission is followed by the emission of α or β - particles

Answer: A

Watch Video Solution

14. Give the IUPAC name of $m - ClCh_2C_6H_4CH_2C(CH_3)_3$

A. 1-(3-chloro-3-methylphenyl)-2-2-diethyl propane

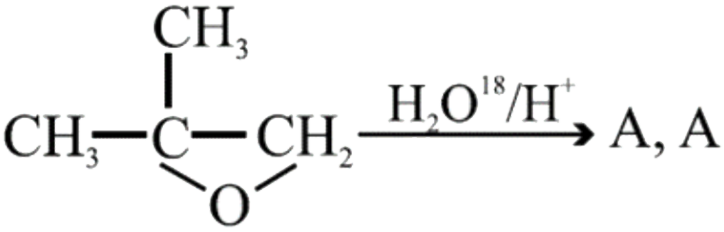
B. 2-(3-Chloromethyl propyl) - 2, 2-dimethyl propane

C. 1-(3-Chloromethyl propyl) - 3, 3-dimethyl propane

D. 1 - Chloromethyl - 3- (3, 2 - dimethyl propyl) benezene

Answer: D

 Watch Video Solution



15.

A. $CH_3 - \underset{\underset{OH}{|}}{\overset{\overset{CH_3}{|}}{C}} - \underset{\underset{OH}{|}}{CH_2}$

B. $CH_3 - \underset{\underset{^{18}OH}{|}}{\overset{\overset{CH_3}{|}}{C}} - \underset{\underset{OH}{|}}{CH_2}$

C. $CH_3 - \underset{\underset{OH}{|}}{\overset{\overset{CH_3}{|}}{C}} - \underset{\underset{OH^{18}}{|}}{CH_2}$

D. $CH_3 - \underset{\underset{CH_3}{|}}{CH} - OH$

Answer: B

16. Benzene and toulene form an ideal solution. 3 mole benzene and 2 mole toulene are added. V.P. of pure benzene and toulene are 300 & 200 mm of Hg respectively. The V.P of the solution (in mm of Hg) is

A. 500

B. 250

C. 260

D. 440

Answer: C

Watch Video Solution

17. Which of the following oxides is strongly basic?

A. TI_2O

B. B_2O_3

C. Al_2O_3

D. Ga_2O_3

Answer: A

Watch Video Solution

18. Amongst NO_3^-, AsO_3^{3-}, CO_3^{2-}, ClO_3^-, SO_3^{2-} and BO_3^{2-}, the non-planar species are :

A. CO_3^{2-}, SO_3^{2-} and BO_3^{2-}

B. AsO_3^{3-}, ClO_3^- and SO_3^{2-}

C. NO_3^-, CO_3^{2-} and BO_3^{3-}

D. SO_3^{2-}, NO_3^- and BO_3^{3-}

Answer: B

Watch Video Solution

19. Which of the following is hypnotic drug?

A. Luminal

B. Salol

C. Catechol

D. Chemisol

Answer: A

 Watch Video Solution

20. Calculate Q and w for the isothermal reversible expansion of one mole an ideal gas from an initial pressure of 1.0 bar to a final pressure of 0.1 bar at a constant temperature of 273 K respectively.

A. 5.22kJ, -5.22 kJ

B. $-5.22kJ, 5.22kJ$

C. $27.3kJ, \ -27.3kJ$

D. $-27.3kJ, 27.3kJ$

Answer: A

 Watch Video Solution

21. If all the electrolytes removed from the colloid by persistent dialysis then

A. colloid becomes extermely stable

B. colloids get coagulated

C. No effect is observed

D. colloids convert into true solution

Answer: B

Watch Video Solution

22. The correct order of increasing basic nature of the bases NH_3, CH_2NH_2 and $(CH_3)_2NH$ is-

A. $CH_3NH_2 < NH_3 < (CH_3)_2NH$

B. $NH_3 < CH_3NH_2 < (CH_3)_2NH$

C. $CH_3NH_2 < (CH_3)_2NH < NH_3$

D. $(CH_3)_2NH < NH_3 < CH_3NH_2$

Answer: B

Watch Video Solution

23. Hybridization shape and magnetic moment of $K_3\left[Co(CO)_6\right]$ is

A. d^2sp^3. Octahedral , 4.9 BM

B. sp^3d^2, octahedral, 4.9 BM

C. dsp^2, square planer, 4.9 BM

D. sp^3, tetrahedral , 4.9 BM

Answer: B

Watch Video Solution

24. Which of the following reactions does not take place?

A. $F_2 + 2Cl^- \rightarrow 2F^- + Cl_2$

B. $Br_2 + 2I^- \rightarrow 2Br^- + I_2$

C. $Cl_2 + 2Br^- \rightarrow 2Cl^- + Br_2$

D. $Cl_2 + 2F^- \rightarrow 2Cl^- + F_2$

Answer: D

Watch Video Solution

25. Nitrobenzenen can be prepared from benzene by using a mixture of conc HNO_3

and conc. H_2SO_4 in the nitrating mixture. Nitric acid acts as a

A. Base

B. Acid

C. Reducing agent

D. Catalyst

Answer: A

Watch Video Solution

26. $Zn\left|Zn^{2+}(C_1)\right|\left|Zn^{2+}(C_2)\right|Zn$. For this cell ΔG is negative if

A. $C_1 = C_2$

B. $C_1 > C_2$

C. $C_2 > C_1$

D. None of these

Answer: C

Watch Video Solution

27. Gold has a fcc lattice with edge length 407 pm. The diameter of the gold atom is

A. 303.1 pm

B. 287.8 pm

C. 352.5 pm

D. 576.6 pm

Answer: B

Watch Video Solution

28. The product of following reaction is-

$C_2H_5O^- + CH_3CH_2I \rightarrow$

A. $C_6H_5OC_2H_5$

B. $C_2H_5OC_2H_5$

C. $C_6H_5O^- + CH_3CH_2I$

D. C_6H_5I

Answer: B

Watch Video Solution

29. Calculate the number of equivalents in 10 litre of $0.5Mba(OH)_2$ solution (Ba = 137)

A. 0.1

B. 10

C. 100

D. 1

Answer: B

Watch Video Solution

30. Facial-meridional isomers is associated with which one of the following complex ($M =$ central metal) .

A. $\left[M(AA)_2\right]$

B. $[MA_3B_3]$

C. $\left[M(AA)_3\right]$

D. $[MABCD]$

Answer: B

Watch Video Solution

31. H_2Se has higher boiling point than H_2S. This is best explained by

A. Higher extent of hydrogen bonding in H_2Se

B. Higher polarity of H_2S

C. Higher polarity of H_2Se

D. Higher dispersion forces in H_2Se due to its higher molecular weight.

Answer: D

Watch Video Solution

32. What is the highest oxidation state exhibited by group 17 elements ?

A. $+1$

B. $+3$

C. $+5$

D. $+7$

Answer: D

Watch Video Solution

33. H_2O_2 cannot be synthesized by

A. Addition of ice cold H_2SO_4 on BaO_2

B. Addition of ice cold H_2SO_4 on PbO_2

C. Aerial oxidation of 2-ethyl anthraquinol

D. Electrolysis of $(NH_4)_2SO_4$ at a high current density

Answer: B

 Watch Video Solution

34. The solubility products of $AI(OH)_3$ and $Zn(OH)_2$ are 8.5×10^{-23} and 1.8×10^{-14} respectively. If NH_4OH is added to a solution containing AI^{3+} and Zn^{2+} ions, then substance precipitated first is:

A. $Al(OH)_3$

B. $Zn(OH)_2$

C. Both together

D. None at all

Answer: A

Watch Video Solution

35. A colourless liquid $A(b.p.184^{\circ}C)$ is sparingly soluble in warm water to which it gives feebly alkaline. On treating with $NaNO_2$ and dil HCl in the cold solution, it yields a solution which reacts with an alkaline solution of β-naphthol to give an orange yellow precipitate. Compound A is -

A. $C_6H_5N_2Cl$

B. $C_6H_5NHNH_2$

C. $n - C_4H_9NH_2$

D. $C_6H_5NH_2$

Answer: D

Watch Video Solution

36. Autoreduction process is used in the extraction of

A. Cu and Hg

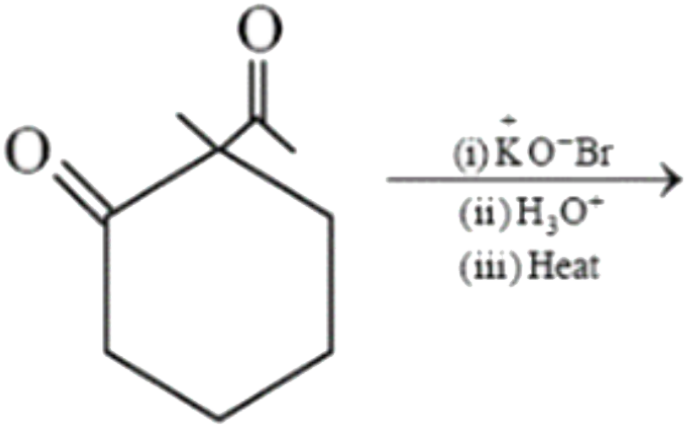
B. Hg and Zn

C. Cu and Al

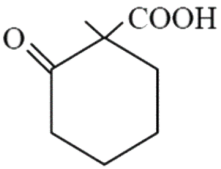
D. Fe and Pb

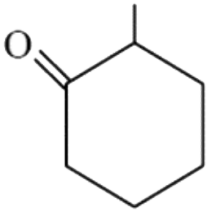
Answer: A

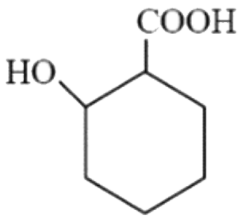
 Watch Video Solution

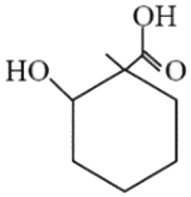


37. The compound finally gets converted into-

A. 

B. 

C. 

D. 

Answer: B

Watch Video Solution

38. In a 10 litre box 2.5 mole hydroiodic acid is taken. After equilibrium `2HI

A. 2.4

B. 0.15

C. 1.5

D. 7.5×10^{-2}

Answer: D

Watch Video Solution

39. The common impurities in bauxite are

(i) Fe_2O_3

(ii) SiO_2

(iii) CuO

(iv) ZnO

A. $1, 3$

B. $2, 3$

C. $1, 2$

D. $2, 4$

Answer: C

Watch Video Solution

40. Which of the following is a tridentate ligand?

A. dien

B. trien

C. en

D. dmg

Answer: A

 Watch Video Solution

41. Arrange the following compounds in order of increasing dipole moment:

(I) Toluene

(II) m-Dichlorobenzene

(III) o-Dichlorobemzene

(IV) p-Dichlorobenzene

A. $I < IV < II < III$

B. $IV < I < II < III$

C. $IV < I < III < II$

D. $IV < II < I < III$

Answer: B

Watch Video Solution

42. Which of the following electrolytes will be most effective in the coagulation of gold sol :

A. $NaNO_3$

B. $K_4\left[Fe(CN)_6\right]$

C. Na_3PO_4

D. $MgCl_2$

Answer: D

Watch Video Solution

43. The thermal stability of alkaline earth metal carbonates $MgCO_3, CaCO_3, BaCO_3$ and $SrCO_3$ decreases as:

A. $BaCO_3 > CaCO_3 > MgCO_3$

B. $BaCO_3 > MgCO_3 > CaCO_3$

C. $CaCO_3 > MgCO_3 > BaCO_3$

D. $MgCO_3 > CaCO_3 > BaCO_3$

Answer: A

Watch Video Solution

44. In metal carbonyls, there is -

A. No π bond between CO and metal atom

B. only σ bond between metal atom and CO molecules

C. One σ and one π bond (back-donation) between metal atom and CO molecules

D. The metal-carbon bonds does not exist at all

Answer: C

Watch Video Solution

45. Which of the following compounds on hydrolysis gives acetylene ?

A. CaC_2

B. Mg_2C_3

C. Al_4C_3

D. Be_2C

Answer: A

Watch Video Solution